CRANFIELD UNIVERSITY

NITISH KHETAVATH

INNOVATION CULTURE IN BUSINESS TO BUSINESS (B2B)
CONSULTANCIES – KEY FACTORS

CRANFIELD SCHOOL OF MANAGEMENT

PhD Thesis
Academic Year: 2016 - 2017

Supervisor: Professor Keith Goffin &
                    Professor Marek Szwejczewski

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This thesis is submitted in partial fulfilment of the requirements for the
degree of PhD

ABSTRACT

Innovation has become a necessity for the survival of organizations. Recent academic and practitioner publications have focused on the importance of the *culture of innovation* and have identified a number of cultural practices (referred to as 'factors' in this thesis) that enable organizations to be innovative. To understand the factors of innovation culture further, a systematic literature review (SLR) was undertaken. The SLR identified 27 factors of innovation culture, but showed that there is conflicting evidence on which of these factors is most important for innovation. Further, the SLR showed there is only sparse evidence on the reasons why the 27 factors are important. From an academic research standpoint, there is thus a lack of clarity around the phenomenon of innovation culture. From a practitioner standpoint, managers do not have clarity on which aspects to focus, when trying to create a culture of innovation. These gaps in the extant literature led to two research questions (RQs): RQ1 – *"What are the most important factors of innovation culture as perceived by managers?"; RQ2 – "Why are the factors* (from RQ1) *of culture considered to be important?"*

To investigate these questions, the PSF (Professional Services Firm) sector was chosen because: (a) such firms are constantly under pressure to differentiate themselves by offering innovative solutions to clients, (b) PSFs face a unique set of challenges to overcome in order to innovate, and (c) there are practically no studies on innovation culture in the PSF industry, providing an opportunity to make a contribution to knowledge. Three in-depth exploratory case studies were conducted using a complex research design employing multiple data sources (interviews, focus groups, documents, and observations). Although each individual case study identified a set of factors most relevant to its business context, the cross-case analysis identified 12 key factors of innovation culture relevant to all three cases. The findings from both individual cases and the cross-case analysis form the contribution of this thesis.

The main contribution of this thesis to theory is that it identified 12 key factors of innovation culture and so clarifies the phenomenon. Compared to the literature, the study added two new key factors and also provided more empirical evidence for others that had previously been considered as less important. The thesis also highlighted that the industry (PSF)/sub-industry (e.g. IT, management, engineering consultancies) and organizational context determine what factors are relevant for innovation culture. From a practitioner standpoint, this thesis examined each of the 12 key factors and generated insights into how they contribute to addressing the challenges that inhibit the PSFs from innovating. These insights will be helpful to managers at a practical level to be able to create a culture of innovation.

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1.0 INTRODUCTION TO THE THESIS

1.1 INTRODUCTION

Both academic and practitioner interest have focused on innovation as a means of competitive differentiation and as a way to create customer value (Tushman & O'Reilly, 1997; Prajogo & Ahmed, 2006; Dobni, 2008). Innovation is now becoming increasingly important to organizations as a minimum requirement for their survival (Ahmed, 1998). Many academic scholars have noted that, lately, organizations have turned to organizational culture as their key enabler for innovation (Schein, 1992; Martins & Terblanche, 2003; Kenny & Reedy, 2007; Dobni, 2008; Buschgens et al., 2013). Also, from a practitioner's perspective, well-known firms such as Apple, 3M, Google, P&G, renowned for their innovation, frequently emphasize their unique cultures and how they support innovation (Patterson et al., 2009; Buschgens et al., 2013). Mike Addison, Open Innovator, Procter & Gamble (cited in Paterson et al., 2009: p. 21) said *"Culture and history are the main catalysts. The view that innovation is the right way forward for the business occurs from the top down and it has been ingrained in the company since its formation, over 170 years ago. It is absolutely true that innovation is the lifeblood of the organization."* This sentiment is echoed by other top consultancies. PwC-acquired Strategy&, in their published annual study (Jaruzelski et al., 2011: p. 2), showed that *"spending more on R&D won't drive results"* and that one of the most crucial factors that will drive results is *"a culture that supports innovation."* Additionally, there is evidence from other practitioner research that culture is a key differentiating factor for an organization to be innovative (e.g. Archer & Walczyk, 2006; Patterson et al., 2009). Therefore, a number of cultural practices have been highlighted by both academics and practitioners as to how they can have an impact on innovation.

Contemporary research on culture and practices supporting innovation has linked certain types of culture, i.e., cultures that espouse certain organizational values, beliefs, and practices, to innovation (e.g. Deshpande et al., 1993; Judge et al., 1997; Jaskyte &

Dressler, 2005; Khazanchi et al., 2007). Given the importance of organizational culture to innovation, the organizational practices associated with the types of cultures supportive of innovation become a subject of research interest. Woodman et al. (1993: p. 316) note that *"we ...know little about how organizations can successfully promote and manage individual and organizational creativity* [broadly referring to creativity and innovation].*"* Despite the importance accorded to a culture that supports innovation in both research and practice, empirical evidence is still scarce; especially in terms of what practices of organizational culture have an influence on innovation (Judge et al., 1997; Jaskyte & Dressler, 2005; McLean, 2005). Therefore, more recently, researchers have started focusing on innovation culture, i.e., an organization's culture and practices that engender successful innovation (Tushman & O'Reilly, 1997; Ahmed, 1998; Christensen & Raynor, 2003; Hammer, 2004; Govindarajan & Trimble, 2005; Jaskyte & Dressler, 2005; McLean, 2005).

So, what is innovative culture and what cultural practices, or more formally cultural factors[1], does it constitute? Janiunaite (2010: p. 496) argues that *"'Innovation culture' is one of those frequently used but rarely defined concepts encountered in the recently booming literature on innovation."* Additionally, the plethora of cultural factors under investigation has helped little in demystifying what innovation culture is both for academics and practitioners. Therefore, this has led to a fragmented concept or understanding of the phenomenon of innovation culture (Buschgens et al., 2013). Arguably then, the concept of 'innovation culture' can be understood and explicated when there is clarity on what organizational cultural factors actually support innovation. Some of the organizational culture factors that researchers identified as supporting innovation are individual creativity, risk taking, open and transparent communication, flexibility, and empowerment, etc. (e.g. Scott and Bruce, 1994; Amabile, 1995; Filipczak, 1997; Tushman & O'Reilly, 1997; Chandler et al., 2000; Martins & Terblanche, 2003). While these factors are innovation-supportive, this stream of research still lacks systematic empirical evidence (Detert et al., 2003; Dombrowski et al., 2007; Dobni, 2008; Nanda & Singh, 2009; Buschgens et al., 2013). Jaskyte and Dressler (2005: p. 26) who extensively

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[1] *Often 'factors' is synonymously used in the literature to indicate variables (e.g. Jaskyte, 2004), elements (e.g. Dombrowski et al., 2007), or attributes (e.g. McLean, 2005) of culture. In this thesis, 'factors' will be used to refer to an organization's cultural practices.*

research culture and innovation famously quoted: *"While there are quite a few conceptual propositions about what constitutes an innovation-oriented culture and the effect of culture on innovation, empirical support for them is scarce and unsystematic."* Further, in the various other published studies in this field, there is a general lack of consensus in terms of how researchers conceptualized innovation culture. For example, some researchers included customer focus and the infrastructure to implement innovations explicitly in their conceptualization of innovation culture (e.g. Dobni, 2008), others did not (e.g. Eckermann et al., 2003; Kenny & Reedy, 2006; Dombrowski et al., 2007). Some included the focus on patents as important (e.g. Kenny & Reedy, 2006; Dobni, 2008), while others clearly did not (e.g. Eckermann et al., 2003; Martins & Terblanche, 2003; Dombrowski et al., 2007). Further, some emphasized exploring innovations externally as a factor (e.g. Kenny & Reedy, 2006; Dombrowski et al., 2007), others clearly ignored it (e.g. Eckermann et al., 2003; Jamrog et al., 2006) or at best made only a mention of it (e.g. Dobni, 2008). Equally, it is not clear as to what other factors could be added into the mix, over and above those that have been broadly discussed in the literature as the current literature still draws on studies in related fields of research, such as creativity, innovativeness or organizational innovation.

Although it can be argued that the above-mentioned studies are contextual (for which again there is no definitive context-based empirical evidence) i.e., depending on the context, one factor may be more important than others, there is still much lack of clarity and empirical evidence around what factors constitute an innovative organizational culture (Wang & Ahmed, 2004; Dombrowski et al., 2007; Dobni, 2008; Buschgens et al., 2013). Added to this, the literature review undertaken in this research study raised a deeper question around whether there are factors that are more important or relevant than others. Further, there is also very little understanding of how the factors actually contribute to innovation (Jassawalla & Sashittal, 2002), i.e., what are the reasons why culture is important for innovation as understood by managers? This same sentiment was expressed by Judge et al. (1997) when they raised the question around how an organization's management can create an innovation supportive culture. The former (i.e., the question around whether there are more important factors than others) and the latter (i.e., the reasons why the factors of culture are relevant to managers for innovation) are

inextricably linked. This is because some factors can be more important than others, depending on the impact they have on innovation (i.e., perceived from the strong reasons there may be for their importance). Logically, what follows then is an inherent challenge for managers, i.e., what factors of culture specifically are most important for them to target in order to improve the return on investment of their efforts in supporting innovative endeavours and is there a valid rationale for such a targeted focus? This area of understanding the most important or key factors of innovation culture has been researched very little, and therefore provides a good opportunity for this research study, i.e., to not only make a direct contribution to the identification of key practices or factors of innovation culture most relevant to managers, but also, in the process, enhance the understanding of the concept or the phenomenon of innovation culture.

Therefore, this research study examines these two fundamental questions. First, what are the most important factors of innovation culture as perceived by managers? Second, why are these factors (derived in question 1) important? Through the investigation of these two questions, there will be an opportunity to directly appeal to practitioners, and also make a contribution to the academic field of enquiry primarily on the nature of the concept or the phenomenon of innovation culture. The less defined a concept is, the less good research in the future can be developed from such an endeavour (Adcock & Collier, 2001). Therefore, given that 'innovation culture' as a separate area of enquiry is still in its fledgling stages of development as a concept, the timing of this research is apt.

This chapter covers the following topics:

- The background to this research study (Section 1.2) and positioning the field of enquiry (Section 1.3);
- The research outline, including the research objectives, and a short description of the research design and methodology (Section 1.4);
- The context of this study (Professional Services Firms), key characteristics of PSFs and the inherent challenges with regard to the culture of innovation in light of recent trends (Section 1.5);

- Description of the intended contribution of the research (Section 1.6);

- Description of the structure of overall thesis (Section 1.7); and

- Chapter summary (Section 1.8)

1.2 BACKGROUND TO THE RESEARCH

The motivation for this research is based on previous practical experience of the researcher as a research analyst at the Business Innovation Lab, Tata Consultancy Services, Pune, India. The researcher's initial area of interest was to understand how organizations can innovate across the various facets of organizational life: marketing; internal organizational practices – business processes, information technology, etc.; supply chain management processes; customer engagement and management processes; etc. Further research into the study of innovation in marketing, supply chain, customer focus, organizational practices, and based on a number of discussions with the researcher's supervisors, the research focus narrowed down to one single aspect of an organization that could make a potential difference to the many facets of its life: the culture of an organization and how it impacts on innovation. This planted the initial seed of an idea of the focus on 'innovation culture'.

Having narrowed down the focus of this study to innovation culture, it was clear that the researcher was dealing with two broad and mature domains of literature – organizational culture and innovation, and more specifically, perhaps an area that overlaps them both. With regard to the former, a number of studies published in the field of organizational culture for innovation indicated the importance of specific factors of culture such as freedom to fail, risk taking, learning, collaboration, etc., required for innovation (e.g. Wallach, 1983; O'Reilly et al., 1991; Jaskyte, 2004). With regard to the latter, a similar set of factors could be observed as being researched; there are references in the innovation literature to organizational culture, indicating which factors of culture could be relevant for certain types of innovation such as product innovation (e.g. Valencia et al., 2010), technology innovation (e.g. Judge et al., 1997), organizational innovation (e.g. Hoffman, 1999), process innovation (e.g. Khazanchi et al., 2007), etc. Further, a quick search of the literature on innovation research carried out in various industries such as technology and IT (e.g. Claver et al., 1998; Twati & Gammack, 2006), manufacturing

(e.g. Malik & Wilson, 1995; Vecchi & Brennan, 2009), pharmaceutical (e.g. Dorabjee et al., 1998), software (e.g. Koc, 2007) etc. or a different domain of enquiry such as project management, knowledge management (e.g. Lemon & Sahota, 2004), organizational learning (e.g. Van der Sluis, 2004), training and development (e.g. Roffe, 1999) etc., also indicates a similar set of factors of culture being investigated.

Also, based on some further reviews, it became clear that there was more to innovation culture than just organizational culture; there was organizational climate[2] as well, which is associated with innovation culture (Ashkanasy et al., 2000). Therefore, it was evident that in order to understand innovation culture better, it was not only required to clearly understand what organizational culture and its traditions are, but also to understand and establish how organizational climate is related and/or not related to organizational culture (Ashkanasy et al., 2000). Given the multitude of topical overlaps and the lack of much clarity around the area of enquiry into innovation culture, an initial *Scoping Study*[3] was undertaken. Tranfield et al. (2003: pp. 214, 215) underscore the importance of such a scoping study in this way: *"Scoping studies are required to assess the relevance and size of the literature and to delimit the subject area or topic. Such studies need to consider cross-disciplinary perspectives and alternative ways in which a research topic has previously been tackled. The scoping study may also include a brief overview of the theoretical, practical and methodological history debates surrounding the field and sub-fields of study. Where fields comprise of semi-independent and autonomous sub-fields, then this process may prove difficult and the researcher is likely to struggle with the volume of information and the creation of transdisciplinary understanding."* A brief discussion on the scoping study and the findings from the scoping study are presented next.

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[2] *The definitions of organizational culture and organizational climate and how they are similar/different are explained in Chapter 2. But for now, organizational climate may be understood as the aggregate perception of the practices in the current immediate environment within an organization (McLean, 2005), which can be reflective of culture. And culture is defined as "a pattern of basic assumptions invented, discovered and developed, as it learns to cope with its problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore be taught to the new members as the correct way to perceive, think and feel in relation to those problems" Schein (1992)*

[3] *This later blended into the systematic review of literature (Appendix 1-1) in the form of being the basis for developing the review questions for a systematic review of the literature.*

1.3 POSITIONING THE FIELD OF ENQUIRY – INNOVATION CULTURE

The researcher, with an initial view concerning the breadth of the field of research, identified and divided the scoping study into the following areas before arriving at the exact scope of this research work (please refer to Figure 1.1):

- Innovation – this is a broad area, therefore the scope of the scoping study was to define innovation and identify, within the innovation literature, what cultural factors may be relevant for different types of innovation
- Organizational culture – this has a legacy of tradition in research, therefore there was a need to clearly understand the concept and also identify the factors of culture that relate to innovation
- Organizational climate – this too has a legacy of tradition (in fact there is a huge body of literature studies where culture and climate are studied in conjunction with each other, therefore there was a need to clearly explicate the concept of climate and also identify any overlaps with the concept of culture

The aim of the scoping study was to clear the overlapping haze around these three areas and identify specific and deeper questions pertaining to innovation culture, i.e., the white space marked on the diagram in Figure 1.1 as 'Area of Interest'.
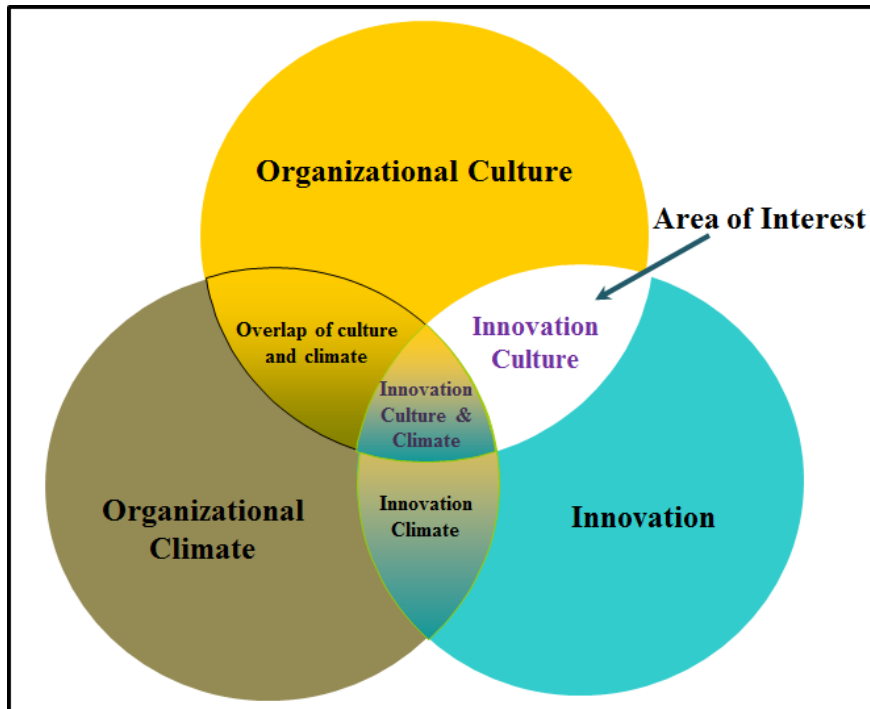
Figure 1.1: Scope of this research study

The following are the key findings from the scoping study:

1. There are acrimonious debates within the literature on organizational culture in terms of what it is and what it is not and also overlaps with the literature of organizational climate (Schneider et al., 1996)

2. The area of innovation culture is rudimentary in terms of lacking clarity on the concept of innovation culture (Eckermann et al., 2003; Kenny & Reedy, 2006; Dobni, 2008)

3. The research in the area of innovation culture is still not an independent domain of enquiry; it predominantly draws on the work carried out in the domains of innovation, organizational culture, and organizational climate (also studies of climate in conjunction with culture) (e.g. McLean, 2005; Nanda & Singh, 2009)

4. An understanding of the factors of innovation culture can also be gained from reviewing the various instruments used to measure organizational culture (e.g. Tushman & O'Reilly, 1997) and innovation culture (e.g. Dobni, 2008)

5. Practitioner journals also published papers on innovation culture and hence they would need to be included in the scope of the literature review (e.g. Patterson et al., 2009)

Two broad learnings gleaned from the above are: (1) Point 1 indicated that the literature review needed to clearly consider defining organizational culture for this study by way of not only establishing what it is but also how it is related/not related to organizational climate with the necessary rationale to progress this research on innovation culture, and (2) Points 2 to 5 indicated that the literature review on innovation culture needed to search for factors of culture linked to innovation in the domains of organizational culture research, organizational climate research, innovation culture and innovation climate research (though rudimentary) and their associated measurement instruments, and also the literature on innovation broadly.

In the case of the former (Point 1 above), given that organizational culture is a fairly mature area of research, with many significant contributions from researchers (e.g. Deal & Kennedy, 1982; Wilkins & Ouchi, 1983; Ott, 1989; Hofstede et al., 1990; Schein, 1992; Hatch, 1993; Wilson, 2001; Reigle, 2003; Driskill & Brenton, 2011), it would not be difficult to identify relevant papers for the literature review. Also, from the scoping study, it was evident that there would be more traceable references to the background and relevant arguments through meta-analyses/reviews in this field. For example, the scoping study identified a few papers that conducted comprehensive reviews of the field (e.g. Moran & Volkwein, 1992; Verbeke et al., 1998), which could be easily referred to when required. Therefore, a traditional narrative-based review was undertaken, building on the work done in the scoping study. This review is presented in Chapter 2.

In the case of the latter (Points 2 to 5 above), various reasons have been noted that prompted the researcher to undertake a systematic literature review (SLR) of innovation culture literature (see Appendix 1-1 for full details of the SLR); in addition to the fact that an SLR is a type of assessment, it has *"the potential to develop significant contribution to [...] research"* (Macpherson & Jones, 2010: p. 110). First, given that the focus on innovation culture is very broad and that it is required to draw on other related areas of

enquiry, such as creativity, climate, etc., there is a risk that heterogeneity of studies prevents the pooling of results and an effective consolidation of a large set of literature (Tranfield et al., 2003) and hence a more efficient and high quality method for identifying and evaluating extensive literature would be required (Mulrow, 1994), potentially leading to a relatively smaller, tighter, and more relevant set of papers derived through a defined protocol of a literature search. Second, since the purpose of the literature review in management research is broadly to derive research questions, the *"Systematic review of literature process can help to justify/qualify the near/final research question which is posed"* (Tranfield et al., 2003: p. 212). Third, from a literature synthesis perspective – improving upon traditional narrative – systematic reviews enable adopting explicit and rigorous processes and by *"the bringing together of findings on a chosen theme, the results of which should be to achieve a greater level of understanding and attain a level of conceptual or theoretical development beyond that achieved in any individual empirical study"* (Campbell et al., 2003: p. 2) the *"synthesis is achieved through summarizing the findings of a group of studies"* (Tranfield et al., 2003). Fourth, given that practitioner literature is also an area to consider (Point 5 above), an SLR would enable a controlled and consistent shortlisting of practitioner papers. Additionally, it makes provision for practitioners' participation in reviews that will enable taking on board practitioner views as the process of SLR progresses (Tranfield et al., 2003). Thus, it *"bears the hallmarks of scientific rigor (irrespective of whether it be quantitative and/or qualitative in nature), but which also engages a wider body of stakeholders in the knowledge production process, presents a set of formidable challenges for the management research community at this juncture"* (Hodgkinson et al., 2001: p. 46).

Based on the key findings from the scoping study (points 2 to 5), in order to understand which factors of culture contribute to innovation, the following SLR questions were raised:

Systematic Review Question 1 (SRQ1): *What are the factors of innovation culture?*
Systematic Review Question 2 (SRQ2): *What tools or instruments are available to measure innovation culture?*

While the actual synthesis and findings of SLR on innovation culture are presented in Chapter 3, the details of the SLR protocol, the descriptive analysis of the literature and related findings, and the systematic analysis undertaken, are presented in Appendix 1-1.

The next section provides a brief outline of this research study.

1.4 RESEARCH OUTLINE

1.4.1 Introduction: The Main Research Interests

The main area of interest of this research is to understand what key factors of innovation culture are most important for managers and why they may be important. This section provides an overview of the research design and methodology to answer the two research questions.

1.4.2 Research Design and Methodology

This thesis describes an empirical investigation into the phenomenon of innovation culture, i.e., the key factors of innovation culture and their relevance for managers in Business to Business (B2B) consultancies (details of the context of this study are discussed in Section 1.5). This perspective of looking at the key factors of innovation culture and their relevance to managers within a singular context has been very limited in management research so far. Consequently, this was an exploratory approach, and multiple exploratory case studies was identified as the most appropriate research strategy to understand the phenomenon better within the selected context of B2B consultancies. Three detailed case studies were conducted using multiple sources of data. The choice of a multiple-method approach was a conscious one, taken to facilitate data triangulation, where possible, and create a good supportive evidence base. The data sources used and analyzed at each case were:

- Interviews with managers, senior managers and members of leadership teams
- Focus group discussions
- Company documentation, such as annual reports, press releases, white papers on innovation providing references to organizational practices, etc.

- Basic observations of the building layout, work layout, kitchen areas, and basic company facilities

The findings from these data sources were then analyzed in the context of the findings from the literature centred on the main research interests highlighted earlier.

1.4.3 The Stages of Research

The research presented in this thesis was conducted in three stages:

- Research Stage 1: Literature review and development of theoretical basis discussed in Chapters 2 and 3
- Research Stage 2: Research design/methodology and specific data collection methods/analysis – discussed in Chapter 4
- Research Stage 3: Empirical data collection, analysis, findings and conclusions – discussed in Chapters 5 to 9

Although these stages indicate a stepwise approach, a certain degree of interaction and looping was necessary across the three stages. For example, empirical insights informed the theoretical basis, and that theoretical basis helped in the interpretation of empirical results, etc.

The next section provides an overview of the industry context in which this study has been undertaken.

1.5 THE INDUSTRY CONTEXT OF THIS RESEARCH STUDY

1.5.1 Introduction: Professional Services Firms (PSFs)

The current research study is positioned in the *consulting industry¸* which broadly falls into the category of *professional service firms* (PSFs) in the literature. While PSF is a very broad term used in the literature, von Nordenflycht (2010: pp. 159,162,164) published a very compelling classification of PSFs on the basis of three characteristic features: knowledge intensity (referring to "*knowledge embodied in individuals''* i.e., the

firm relies on the knowledge of individuals), capital intensity (non-human assets such as inventories, factories, equipment, etc.), and professionalization of the workforce (dominant professional association, *"which controls the ability to practice consulting or stipulates how consultancies can be organized"*). Management consulting firms (e.g. PwC, EY, Deloitte, McKinsey), technology consulting firms (e.g. IBM, Accenture, CapGemini), or engineering consulting firms (e.g. Arup, Mott McDonald) are classified as those that have high knowledge intensity, low capital intensity and low professionalization of the workforce. There are other PSFs (e.g. legal services such as law firms, accountancy firms) that are similar to the first two features, but have a different third feature, high professionalization of the workforce (i.e., they are governed by professional associations that control practice). The former (e.g. management, technology and engineering consulting firms) are also referred to as 'Neo-PSFs' to differentiate them from other PSFs. This research is undertaken in the context of Neo-PSFs. As an example of a Neo-PSF (which will now be broadly referred to as PSFs or consultancies or consulting companies), management consulting services was defined by Greiner and Metzger (1983: p. 7) as follows: *"Management consulting is an advisory service contracted for and provided to organizations by specially trained and qualified persons who assist, in an objective and independent manner, the client organization to identify management problems* [or problems related to any specific field of work], *analyze such problems, and help, when requested, in the implementation of solutions."*

Support for the selection of PSFs as a context for this study[4] on innovation culture can be found in Smets et al. (2011: p. 1) who state that *"Innovation is the sine qua non of PSF success, as clients constantly seek novel solutions to their problems and PSFs need to overcome the problem of knowledge commoditization. As solutions to client problems become widely known, professional service firms risk price reductions and the reputational damage associated with delivering 'cookie-cutter' solutions. For PSFs, constant innovation is not an option – it is a necessity."* So, the lack of studies specific to innovation culture in PSFs (based on the researcher's search for literature on innovation culture in PSFs) provides a unique opportunity to learn from them (for more details, see Appendix 1-2). Further, there is an increasing interest in studying PSFs among

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[4] *More details are available in Chapter 4, Section 4.3.5*

management theorists (Hinings & Leblebici, 2003; Greenwood et al., 2006) because PSFs are increasingly relevant to non-PSFs from the perspective of learning and understanding knowledge-based work (von Nordenflycht, 2010) as they are extreme examples of knowledge intensity for an increasingly knowledge-based economy (Hinings & Leblebici, 2003; Greenwood et al., 2006; Anand et al., 2007). Also, given that PSFs significantly contribute to the economy (globally, up to $280 billion) it is imperative that there is more understanding of this industry from an innovation culture perspective (additional details related to PSFs and the range of activities and size of the market are provided in Appendix 1-3).

The next two subsections discuss services in general (1.5.2) and the characteristics of the PSFs in particular (1.5.3).

1.5.2 Characteristics of Services

A few basic differences between services – of which the PSFs are a subset – and manufacturing industries are noted here. Evangelista and Sirilli (1995) identified four characteristics that are unique to services:

- A close interaction between production (co-production) and consumption
- The high information content of services which are intangible in their nature
- Very large and growing role played by HR (Human Resources) in service production, particularly in the sectors that are known as 'pure' services, such as professional services
- Finally, organizational factors, such as the link between front-office (interactions with the customers) and back-office (the actual production of services), play a critical role in producing and delivering new services

Broadly, services lack the *"physical reality of a traditional mass-market product"* (Malhotra, 1999: p. 1) and the service outputs are fuzzy in nature (Gallouj & Weinstein, 1997). Consequently, it is a challenge to measure and detect improvement or change (Prajogo, 2006). Therefore, the focus of scholars has been on organizational aspects, such as recruitment, development and retention of talented people (Starbuck, 1992), the social processes within the organization (Alvesson, 2004), and how employees' ongoing work

of developing knowledge leads to innovation (Brown & Duguid, 1991). While there are challenges around the intangible nature of services, Prajogo (2006) confirms that service firms place equal emphasis on innovation and its impact on customers compared to their manufacturing counterparts. The next section presents the characteristics specific to PSFs.

1.5.3 Key Characteristics of PSFs

Professional services are generally different from other service organizations. This includes aspects such as non-routine problem solving, highly educated workforce, co-production of value with clients, a strong dependence on firm reputation and use of professional networking in generating business (Alvesson, 2004; Lowenhahl, 2005; Kaiser & Ringlstetter, 2011). From the literature available on PSFs, six key characteristics of PSFs were identified. These characteristics are discussed in this section in light of (a) the specific challenges faced by PSFs with regard to innovation and (b) the consulting industry trends in general.

1. **Knowledge creation, dissemination, transfer (to client), and implementation.** Consulting firms are knowledge-based organizations and, at their core, have expertise as their competency (Starbuck, 1992). This competency is built on specialized knowledge, which is innovative, creative, and unambiguous (Alvesson, 2004). Three aspects are relevant here: creation of knowledge/expertise, dissemination or delivery to clients, and implementation of services to clients. First, PSFs are involved in knowledge creation or co-creation with clients (O'Mahoney, 2011). Knowledge creation can be a very creative process and is usually done, often in complementary ways (Haas & Hansen, 2001), in two forms: *Codification strategy* and *Personalization strategy*. The former refers to articulating, storing and disseminating knowledge via databases for consultants to reuse and build on existing knowledge and the latter refers to creating new knowledge through rich interaction between consultants (Haas & Hansen, 2001). Second, PSFs are also involved in transferring relevant knowledge back to the clients (Werr et al., 1997; Werr & Stjernberg, 2003). This is a necessary part of PSFs' activity because companies that engage consultancies do so to gain access to the specialized knowledge that is created by them (O'Mahoney, 2011). Sometimes, the transfer of knowledge can be an essential part of

the delivery of services itself (Maister, 2003) as it involves coming up with innovative ideas. Heusinkveld et al. (2009) and Anand et al. (2007) suggest that knowledge thus created can help consultancies in creating new practices, and in turn keep in tune with the market demand. However, this requires the firms to build a base of expertise that can enable them to improve performance of their services in a specific business domain area (Werr & Stjernberg, 2003). Third, an interesting trend is that clients are expecting the knowledge that is created in the form of deliverables, which usually have a set of recommendations (based on evidence of course), to be implemented. However, there is a sort of risk aversion to implementation on the part of clients. This is largely because the recommendations provided by PSFs are not tried and tested (Ciumara, 2011). So, the clients are now willing to enter into the model where they are ready to share some equity risk/reward with PSFs because they regard consultants as equal participants in their growth story. *"It's about walking along with the customer in their implementation journey and enabling them achieve tangible business outcomes"* i.e., the clients want consultants to *"'put your money where your mouth is' or 'do some execution, don't just give us knowledge'"* (Srinivasan, 2014: p. 269). This is taking the shape of outcome-based engagements where rewards are shared based on outcomes achieved (Srinivasan, 2014). This can enable companies to build demonstrable cases of delivery or implementation to showcase to other clients (Srinivasan, 2014). Therefore, because knowledge is an essential component that underpins the business of PSFs, the challenge for them is to start somewhere by looking for ways to build the capacity (with successful cases of implementation) or a base of expertise to innovate so they can respond to other clients' requests with innovative solutions.

2. **People are a key asset.** PSFs' main asset is the expertise and competence of their personnel (Engwall & Kipping, 2002). LexisNexis Research (2016: p. 3) highlights that *"A consulting firm is only as successful as the talent of its people and their abilities to achieve measurable results for clients."* In PSFs, employees' know-how and know-what are the critical components in the production of goods and services (Maister, 2003). PSFs therefore recruit eligible candidates from prestigious universities (Quinn et al., 1996) and also make sure they have appropriate retention mechanisms (Smets et al., 2011). With the recent trend of more demand for senior

staff (Smets et al., 2011) driven by competition for staff with experience and expertise (First Research, 2016), there is more pressure to recruit and retain experienced staff. In response to this trend, PSFs have started recruiting more senior permanent staff (Smets et al., 2011). In terms of retaining and growing a larger permanent base of senior staff, PSFs are looking to create opportunities for individuals to work on interesting problems, a broad-ranging learning and development experience without any expectation that unsuccessful candidates for promotion to partner level (a level within the firm at which individuals have a share in the profits of the firm) should leave the firm (Smets et al., 2011). Additionally, these trends are pushing the partners to look for more innovation opportunities to create a frontier-type of project work for their non-partner staff to keep them motivated (Smets et al., 2011). Also, with a non-partner permanent base, junior members of staff will now have access to more skills and experience required for innovation (Smets et al., 2011). Thus, recruitment and retention of senior staff provides the necessary support for junior staff and creates an environment supportive of innovation. Therefore, having more experienced staff builds the necessary capacity to innovate (Smets et al., 2011).

3. **PSFs work closely with clients.** Considering the specific nature of services (co-production and consumption as discussed above) and the nature of work undertaken (high content of information and their dependence on the clients to co-produce value), consultants are mostly client facing. Therefore, client satisfaction is their biggest measure of success (Maister, 2003). And with clients increasingly seeing innovation as a key differentiator (O'Mahoney, 2011), i.e., standardized approaches/solutions from consultants are no longer seen as value adding (Ciumara, 2011), consultants are under pressure to deliver innovative solutions. Also, consultants engage consultancies so that they bring on board a wealth of experience both from other companies and other industries to theirs (Anand et al., 2007; O'Mahoney, 2011). For example, based on the exposure consultants would have had on other projects, they see client problems and needs in juxtaposition to those of other clients more clearly, and therefore a key source of innovative solutions and ideas for the clients (Taminiau et al., 2009; Ciumara, 2011). Further, with the trend of a shift from large transformation types of programmes towards more focused local innovations, often in small joint venture projects between clients and consultancies (Ciumara, 2011; O'Mahoney,

2011), clients' expectations of consultants who are working closely with them become even higher. In this context, *"the onus of responding to new market demands falls squarely on the shoulders of front-line professionals"* (Smets et al., 2011: p. 2). This brings up the key imperative that innovation needs to be embedded in the everyday work of professionals rather than in a *"separate organizational unit"* or a *"dedicated team or R&D* [Research & Development]*"* (Smets et al., 2011: p. 2). Thus, working closely with clients poses a unique challenge of providing innovative solutions to them continually. On the other hand, by delivering innovative solutions to clients, PSFs are actually able to establish their reputation, which can in turn enable them to secure more challenging work (Reihlen & Werr, 2012). However, sometimes clients can be impediments to innovation as they may have other political agendas to meet (Reihlen & Werr, 2012). This dependency on an existing client base to build the necessary capability to innovate and learn creates challenges for PSFs, preventing them from identifying new areas of business opportunity (as clients themselves are a key source of innovation) (Ciumara, 2011). So, the challenge then would be to identify alternative ways of generating new ideas.

4. **PSFs are organized in a pyramid structure.** At the bottom of the pyramid are analysts, junior consultants, and senior consultants. The next level up is the junior/middle management layer with consulting managers, senior managers and directors who largely oversee the delivery of projects. The level above junior/middle management is senior management, including the partner and principal who actually own the firm, develop the business and have a share in the profits. The senior management is responsible for setting direction, identifying areas of new investment and growth, and making sure that the right messages are sent down the hierarchy in their teams (Maister, 2003). Firms leverage their high cost seniors (senior staff) with the low cost juniors (junior staff), which is called the principle of leverage (Maister, 2003). As the global consulting industry sees more fragmentation (owing to the demand for niche solutions from clients) and more competition (e.g. more senior managers from large firms move out to start their own firms and charge the customers less), medium and large sized firms are pushed to lower their daily rates and this hits the principle of leverage hard (Smets et al., 2011). To increase the margins, the only way out is to increase the utilization. But higher utilization can have adverse impacts

on availability of time for innovation leading to *"less time being available for training and research and development"* (O'Mahoney, 2011: p. 4). Also, Smets et al. (2011: p. 7) highlight that for innovation, utilization levels need to be lower: *"Innovation is more likely to emerge when professionals are not constrained by the utilization targets that underpin traditional fee billing. Traditional practice favored the billable exploitation of existing knowledge over the 'down-time' necessary to reflect on experience and generate innovations."* Therefore, the key challenge here is to strike a balance between time available for billable work and time allocated to non-billable or innovative work.

5. **Work in PSFs is largely project-based.** PSFs largely deliver work as projects. In some cases, depending on the type of service needed, long-term contracts are agreed (e.g. time and material contracts based on staff augmentation requests from clients) but the majority of work is project-based. For organizations to build knowledge and remain competitive in the marketplace, the type of project work undertaken and the level to which consultants or teams of consultants and, as a consequence, the organization itself, learn are important. While many partners are involved in obtaining challenging project work (Maister, 2003), teams on the ground need to keep learning from projects in order for organizations to develop and build knowledge (Hadley et al., 2012), and again in turn be in a position to bid for more challenging work. Hadley et al. (2012) highlight the importance of a project-based environment from the perspective of learning in PSFs. They discuss how team members, by working together towards a finite goal, can learn in a way that is difficult to achieve in a *"functionally structured arrangement where relationship and knowledge are typically segregated"* (Hadley et al., 2012: p. 65). In relation to this, the key challenge that arises in the context of project-based learning is how to ensure the necessary interactions are developed among the consultants or project team members, and also between them and the clients, in order that learning happens and creative ideas are generated. The projects can be innovative based on a number of factors: proximity and frequency of communication of project team members in terms of physical space orientation, the social and group structures that define relationships, and the exposure and experience that leads to an inclination to innovate (Hadley et al., 2012).

6. **Developing staff is a key priority.** PSFs compete in two marketplaces: *"They compete for clients and they compete for staff"* (Maister, 2003: p. 189). So, one of their key priorities is to grow and retain their staff. PSFs grow by growing more junior staff into partner roles. The quicker this process, the faster the growth. However, growing junior staff into senior roles does not come naturally as that needs to be balanced against the priorities of senior members of the firm as they are busy with the *"business getting and serving of clients"* (Maister, 2003: p. 158). But internally, there is competition to grow quickly into partner roles as individuals in PSFs are not only talented and competent but also very ambitious (Maister, 2003). Junior members of staff who have aspirations to grow into partner roles try to quickly develop and demonstrate their business acumen and an ability to innovate (Smets et al., 2011); however, they need considerable support both from their senior managers and the environment around them. Lately, organizations have started developing and evolving new career models, trying to provide the space for junior staff to grow (Maister, 2003; Smets et al., 2011). This includes coaching and mentoring of junior members of staff (top level of the pyramid downwards through all levels) so they build the relevant skills to grow as professionals and also in turn grow the business (Maister, 2003). Therefore, the challenge for management is to put junior members of staff on an internal growth path by way of creating an environment for them *"to explore innovative ways of solving their clients' problems"* as *"merely exploiting established solutions is unlikely to achieve that* [becoming a partner]*"* (Smets et al., 2011: p. 3).

1.5.4 Implications for the Research

As presented in the previous sections, PSFs have not been studied extensively in terms of innovation (Ross, 2015). However, the work available does allow the key characteristics of such firms to be identified (discussed in Section 1.5.3). It is significant that no previous study has concentrated on the culture of innovation in PSFs; although innovation is fundamental to them, the challenges in PSFs, which are inherently linked to their characteristics, are ultimately impacting on their ability to innovate (e.g. higher leverage reduces time for innovation, etc.).[Please refer to Table 1.1 and what it means for the research.] The key characteristics of PSFs, the challenges the key characteristics pose and the implications of innovation culture are summarized here. For example, with respect to

'No.4, PSFs are organized in a pyramid structure', the characteristic (pyramid structure) always focuses on increasing their leverage, which in turn leads to the key challenge of having a very limited amount of time available to innovate. This indicates that the key challenges noted here do need to be addressed in order to establish a culture of innovation. Likewise, the other characteristics of PSFs pose challenges that can inhibit PSFs from innovating[5].

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[5] *Please note that in Chapter 8 (cross-case analysis) an elaborate discussion is presented on how the key factors of innovation culture identified through this study actually address the key challenges to be able to establish a culture of innovation. Further, in Chapter 9, it is discussed how one or more factors of innovation culture work in conjunction with each other to address these key challenges.*

Table 1.1: Key Characteristics of PSFs, Implications for Innovation Culture and Key Challenges

No.	Key Characteristic	Challenges and Implications for Culture of Innovation in PSFs	Summary of Key Challenges	Key References
1	Knowledge creation, internal dissemination, and transfer to client	Knowledge creation, dissemination, transfer to client are critical for firms to build future capacity to innovate. With clients demanding implementations of solutions, firms need to (a) look for joint innovation initiatives with clients to implement solutions and (b) look for other ways such as sensing/tracking the market continually, training consultants and developing necessary skills to build the capacity to innovate.	Creating demonstrable cases of successful implementation and/or identifying other ways so firms *build capacity to innovate* **(d)**	Haas & Hansen (2001); Werr & Stjernberg (2003)
2	People are a key asset	People are key units of service production in PSFs. With more fragmentation of industry and competition, offering junior staff the support of more senior staff by recruiting them is a key challenge. This is important and needs to be addressed because senior staff with relevant skills create an environment for firms to build the capacity to innovate.	Retaining people and/or recruiting and retaining more senior permanent staff to *build the capacity to innovate* **(d)**	Maister (2003); Smets et al. (2011)
3	PSFs work closely with clients	Consultants are mostly client facing. With clients increasingly seeing innovation as a key differentiator, they are looking to consultants (the front-line staff) to provide innovative solutions to them. So, the challenge for PSFs is to create an environment to be in a position to meet clients' expectations of innovative solutions. Also, in cases where clients are less supportive of innovation, consultancies lose opportunities to identify new areas of business opportunity. Firms need to identify alternative ways to generate new ideas.	Providing the necessary support to consultants to enable them to provide *innovative solutions to clients* **(c)** and also navigating through the difficulties of *identifying new areas of business opportunity* **(e)**	Anand et al. (2007); Maister (2003); Smets et al. (2011); Ciumara (2011); Taminiau et al. (2009)
4	PSFs are organized in a pyramid structure	As the global consulting industry sees more fragmentation and increasing competition, firms are pushed to lower the daily rates. This trend hits the principle of leverage hard. To increase the margins, utilization needs to increase. But higher utilization will have adverse impacts on availability of time for innovation. This can severely impact on the culture of innovation.	Striking a *balance between (time allocated to) billing and innovation* **(a)**	Maister (2003); Smets et al. (2011); O'Mahoney (2011)
5	Work in PSFs is largely project-based	PSFs largely deliver work as projects. For organizations to build knowledge and remain competitive in the marketplace, the type of project work undertaken and the level of learning which takes place matters. For this, the team members need to work together towards a finite goal and learn collectively. More broadly, an environment that supports learning through better interactions and innovative behaviours would be needed.	Creating a culture of innovation where the focus is on *improving internal interactions and innovative behaviours* **(f)**	Maister (2003); Smets et al. (2011); Srinivasan (2014); Ciumara (2011)
6	Developing staff is a key priority	The key target area for PSFs is training junior staff to be able to move into partner roles quickly. As the junior members of staff grow, the organization grows. However, firms have less of partners' time for training the junior staff. But for aspiring juniors to grow, they need to have opportunities to learn and demonstrate they are different from others. Coming up with innovative ways of solving client problems can be a differentiator. But they need an environment of support to do that.	Creating a culture of innovation which can support *internal growth of consultants* **(b)**	Maister (2003); Smets et al. (2011); O'Mahoney (2011)

Note: Please note that the 6 key challenges in column 4 are identified using (a), (b), (c), (d), (e) and (f). These identifiers will be used in Chapters 8 and 9 again for discussion.

1.6 THE INTENDED CONTRIBUTION OF THIS THESIS

1.6.1 Contribution to Knowledge (academic theory and methodology)

- An SLR has not been undertaken in previous research studies, so this would be a step towards producing a list of key factors from literature through a tight review protocol

- There are no studies on innovation culture in the context of PSFs. It is the intention of this thesis to make a contribution to the fields of PSF research and innovation culture research

- Demonstrate the use of a robust methodology comprising a number of sources (for triangulation where possible) to provide empirical data to enhance the understanding of the construct of innovation culture

- Overall, this research aims to explicate the phenomenon of innovation culture by providing more insight into the factors of innovation culture that can inform measurement or assessment of innovation culture in the future

1.6.2 Contribution to Practice

- The key factors and the detailed set of reasons for their importance should provide practical evidence and, consequently, also confidence to managers to increase their focus on specific factors and also look for results in that direction; consulting managers will be able to prioritize the list of key factors based on the key reasons and the challenges they want to address

- This thesis should provide contextual explanation as to how the key factors can support managers in overcoming their business challenges in some practical ways, rather than apply the key factors (as they are available from literature) as 'one-size-fits-all' fixes/solutions

1.7 STRUCTURE OF THE THESIS

This thesis is divided into nine chapters as illustrated in Figure 1.2. Since the research is based on two specific areas of literature (organizational culture and innovation culture), the next two chapters concentrate on the detailed review of the relevant literature.

Building on these literature reviews, the chapters that follow concentrate on the research design, methodology, empirical data and research results.

Chapter 2 covers the literature on organizational culture, traditions of culture literature and its implications for innovation culture research, and overlaps with climate literature and how it is not/is related to culture.

Chapter 1: Introduction	Background and Objectives, and identification of relevant streams of literature to review	
Chapter 2-3: Literature Review	Organizational Culture (What it is and what it is not)	Innovation Culture - Systematic Review (What it is and what it is not)
Chapter 4: Research Design	Formulation of research questions from literature review conclusions and Selection of an appropriate research design and methodology	
Chapter 5-7: Empirical data and Within Case Analysis	Case Study A → Case Study B → Case Study C	
Chapter 8: Cross Case Analysis	Comparative analysis of results from different cases	
Chapter 9: Results and Implications	Conclusions and discussion on implications of overall research	

Figure 1.2: Structure of the Thesis

Chapter 3 covers the synthesis of the systematic review of the literature on innovation culture. This chapter explains the traditions of innovation culture literature, and synthesis of the factors of innovation culture extracted from the systematic review of the literature.

Chapter 4 revisits, reviews the insights derived from Chapters 2 and 3, identifies gaps in the literature and develops research questions for this study. Based on the research questions, this chapter also discusses the philosophical basis of this study and illustrates

in detail the methodological choices which were considered in order to arrive at a final research design in line with the overarching research agenda/purpose. Finally, this chapter explains the research design in detail in terms of the specific methods of data collection and analysis.

Chapters 5, 6 and 7 present background information on case studies A, B, and C and illustrate in detail the data collection and analysis undertaken. Therefore, these chapters answer research questions RQ1 and RQ2 – with details of evidence gathered across all relevant sources – and provide a discussion of the results in the context of each case study treated individually.

Chapter 8 presents the cross-case analyses concerning the key factors of innovation culture across all three case studies in comparison with the evidence from existing literature. The relevant reasons are summarized for each of the key factors of innovation culture. Additionally, a few specific differences of non-key factors across cases are also discussed.

Chapter 9 presents a summary of results from RQ1 and RQ2 and also a tentative model as to how the key factors identified in this study work in conjunction with each other to address some of the core challenges discussed in Section 1.5.4. Also, the contribution of this research is discussed, limitations of the study are highlighted, and suggestions for future areas are clearly identified and discussed.

1.8 CHAPTER SUMMARY

This chapter provided a brief introduction to the topic of the research, established the importance of innovation culture and also provided an overview of the initial thought process involved in arriving at the research topic. It highlighted the need for a systematic review of the literature and also positioned the field of enquiry of innovation culture vis-à-vis other related fields of enquiry, in order to clarify the scope of research. The chapter highlighted that innovation culture is the scope of the work, but the search protocol for suitable studies will include climate as well because some of the studies combine both.

It was also highlighted that two broad streams of literature will need to be reviewed for the purpose of the literature review and founding the theoretical basis for this research: organizational culture and, building on that, innovation culture. It was discussed that the organizational culture literature will be based on meta-reviews already available, while the systematic review will focus on the core subject of this research, the phenomenon of innovation culture.

Additionally, this chapter reviewed the context of professional services firms in which this research was undertaken. Six key PSF characteristics were identified. The section on PSFs then summarized the key characteristics and their implications for the culture of innovation in PSFs by highlighting the challenges that can inhibit innovation.

Next, this chapter also discussed the intended contribution of this thesis to knowledge (academic theory and methodology) and to practice. Finally, it also provided an outline of the organization of the entire thesis.

2.0 REVIEW OF ORGANIZATIONAL CULTURE LITERATURE

2.1 INTRODUCTION

The purpose of this chapter is to set the context for this thesis. Since the thesis is related to innovation culture within organizations, the first step is to gain an understanding of what organizational culture is. Also, in order to understand culture better, a close affiliate of culture (climate) is also discussed.

Therefore, this chapter covers the following topics:

- The traditions of organizational culture research, and their relevance to innovation culture research (Section 2.2);
- The conceptualization of organizational culture (Section 2.3);
- The definition of culture's close affiliate – climate, and how culture and climate are related/not related (Section 2.4);
- Key insights from organizational culture literature (Section 2.5); and
- The chapter summary (Section 2.6).

2.2 TRADITIONS OF ORGANIZATIONAL CULTURE RESEARCH

2.2.1   Introduction

Culture is *"one of the two or three most complicated words in the English language"* (Williams, 1976: p. 87 cited in Ghaziani, 2009), one that has *"acquired a certain aura of ill-repute... because of the multiplicity of its references and the studied vagueness with which it has all too often been invoked"* (Geertz, 1973: p. 89 cited in Ghaziani, 2009). It is for this reason that it is important to look at the origins of this subject of culture briefly. The study of organizational cultures emerged from the study of societies within the discipline of anthropology of the late 19th and early 20th century (Wallace et al., 1999; Wilson, 2001). Webster's New Collegiate Dictionary defines culture as: *"The integrated*

pattern of human behavior that includes thought, speech, action, and artefacts, and depends upon the human capacity for learning and transmitting knowledge to succeeding generations.'' Although this definition primarily relates to cultures of societies, as described in anthropology, the definition's broad areas of focus (or what would be called 'constituents of culture' in the rest of this chapter) are equally applicable in the field of management (Barger, 2007). This definition suggests a few key constituents of culture that are noteworthy: 'a collection of human behaviour', 'thought', 'speech (or 'language'), 'artefacts' (or 'physical symbols'), and 'action/ behaviours' that are learned and transmitted to succeeding generations (in this case, new employees in organizations). Similar constituents of culture are defined in the area of research in corporate cultures.

Research in the area of corporate cultures gained prominence in the late 1970s with the seminal works of both Peters (1978) and Pettigrew (1979) (cited in Wallace et al., 1999). Further, in the early 1980s the research on corporate cultures developed into formal organizational culture studies (Denison, 1996; Schein, 1992). Much in line with the dictionary definition comprising the key constituents of culture as noted above, academics Blake and Mouton (1969) defined corporate culture as the patterns of employee interactions, values, and attitudes including the assumptions and beliefs people accept, live by and pass on to new employees. While these are some of the key constituents of organizational culture, the tradition of culture research is very rich with a variety of views. The next subsection will be dedicated to tracing the traditions of culture research and their implications for the research on innovation culture.

2.2.2   Traditions of organizational culture research

At the heart of the development of the literature on organizational cultures is the debate as to whether organizational culture is something that an organization '*has*', where culture is treated as an organizational 'variable' (like strategy or structure), as opposed to something that an organization '*is*', where culture is treated as a 'root metaphor' (Smircich, 1983). The former (culture as a variable) is anchored in the idea that all organizations possess a culture and that it has an impact on observable aspects of the organizational outcomes, such as performance, integration, innovation, etc. (Deal & Kennedy, 1982; Smircich, 1983; Wilkins & Ouchi, 1983; Schein, 1992; Wilson, 2001),

i.e., culture is separate from the entity of an organization. Scholars subscribing to the culture as a 'variable' view research cultures through what is known as an *'etic'* approach. Consequently, a number of studies are being undertaken with this view of culture as a variable in the fields of innovation (e.g. Kenny & Reedy, 2006; Dobni, 2008), quality (e.g. Westbrook & Utley, 1995; Detert et al., 2003), marketing (e.g. Samer et al., 2014), etc. On the other hand, the latter (culture as a root metaphor) is anchored in the idea that culture resides within each individual as a function of cognitive and learning processes (e.g. Morgan, 1980; Smircich, 1983; Alvesson, 1985; Knights and Willmott, 1987) i.e., culture is organization. Scholars subscribing to culture as a 'root metaphor' promote an *'emic'* approach. That is, culture is a system of shared cognitions (human mind generates culture by a finite number of rules), shared symbols and meanings (organization is maintained through symbolic modes such as language that facilitates shared meaning and reality), and a projection of the mind's universal unconscious infrastructure (organizational practices are the manifestations of unconscious processes) (Smircich, 1983). The next section discusses the organizational paradigms relating to both *etic and emic* approaches under which culture is researched.

2.2.3   Organizational paradigms and organizational culture research

Smircich (1983) elaborately discusses five organizational paradigms under which culture is being researched both as a variable (two paradigms are covered) and as a root metaphor (three paradigms are covered). Please refer to Table 2.1 for this discussion. With regard to culture as a variable, research is being undertaken under two organizational paradigms: *Comparative Management* and *Contingency Management.*   Within the 'comparative management' paradigm, studies are undertaken viewing culture as an external variable (exogenous). As an external variable, national culture (for example) influences the development and reinforcement of core values within an organization; such influences are studied as part of cross-cultural studies for differences in outcomes due to national cultural differences. Therefore, under the 'comparative management' organizational paradigm, core underlying beliefs and values across cultures are studied more from the perspective of how cultures can be social instruments (as an influence from outside) for task accomplishment. Within the 'contingency management' paradigm, studies are being

undertaken viewing culture as an internal variable (endogenous). As an internal variable, culture could be seen as an independent variable endogenous to the firm where measures of corporate performance are influenced by shared values, identities and commitment to organizational members. This view is very strongly rooted in functionalist theory in sociology and falls under the 'contingency management' theory where underlying beliefs, values, patterns of behaviour and artefacts are exchanged between members of the organization and the environment within the organization (Smircich, 1983). Both the comparative and contingency models of culture view organizational culture as a lever or a tool to be used by managers to implement strategy (Smircich, 1983).

The root metaphor view of culture is grounded in anthropology rather than sociology. Three perspectives are covered under this: organizational cognition, organizational symbolism, and structural psychodynamics. In the 'organizational cognition' paradigm, organizational culture researchers strive to understand the 'rules' that guide behaviour – the shared cognitions, systems of values and beliefs, the specific ways in which individual organizational members view and organize their world. In the 'organizational symbolism' paradigm, an organization is seen as a society of shared meanings and symbols against which members organize and interpret their experience by trying to identify appropriate behaviour. The emphasis here is on the ways in which *"Organizations can and do socialize new members to achieve coordinated action and a sense of organizational identity"* (Deshpande & Webster, 1989: p. 7). In the 'structural/psychodynamic' paradigm, the researchers see organizations as a form of human expression rather than as 'goal-oriented', 'problem-solving' instruments. It is within these three perspectives that culture is treated as an outcome and a process by which the outcomes are generated, and not as a variable (exogenous or endogenous) that has an influence on organizational functioning (Smircich, 1983).

Table 2.1: Features of Organizational Culture Research Paradigms

No.	Organizational Paradigm	Key Theoretical features	Locus of Culture	Constituents of Culture Studied
1	Comparative Management	Grounded in functionalism and classical management theory	Exogenous, independent variable	Core underlying beliefs, values
2	Contingency Management	Grounded in structural functionalism and contingency theory	Endogenous, independent variable	Core underlying beliefs, values, behaviour patterns and artefacts
3	Organizational Cognition	Grounded in ethno-science and cognitive organizational theory	Culture as a metaphor for 'knowledge systems'	Rules that guide behaviour, systems of values and beliefs as shared cognition (no quantitative studies on individual constituents are involved)
4	Organizational Symbolism	Grounded in symbolic anthropology and symbolic organizational theory	Culture as a metaphor for 'shared symbols and meanings'	Slogans, rituals, symbolic processes (no quantitative studies on individual constituents are involved)
5	Structural/ Psychodynamic Perspective	Grounded in structuralism and transformational organizational theory	Culture as a metaphor for 'unconscious mind'	Unconscious human mind with overt expression (no quantitative studies on individual constituents are involved)

Note: Adapted from Smircich (1983) and Deshpande & Webster (1989)

Culture may be all of these things discussed above, but the differences arise because of the differences in theoretical approaches to studying the concept of culture (Smircich, 1983). Therefore, a question in the context of this research study is: How might the conceptualization of culture have a bearing on the way research is carried out, especially in the context of innovation? While the variable view considers the power of the influence of culture on other organizational variables (structures, processes such as recruitment or appraisals, etc.) to generate meaningful outcomes, the metaphoric view treats culture as the result of an expression of a human group. For example, 'physical symbols', which is one of the key constituents of culture, in the culture as a variable view can be studied using *"the principle of reinforcement (of artefacts) to help shape the emergence of culture in a particular direction"* (Bessant, 2003: p. 37) i.e., researchers believe that cultural artefacts *"can be used to build organizational commitment, convey a philosophy of management, rationalize and legitimate activity, motivate personnel and facilitate socialization"* (Smircich, 1983: p. 345). There is a huge body of literature here where artefacts, such as language including stories, myths, and legends, can have an influence on the behaviour of the individuals (e.g. Boyce, 1996). On the other hand, 'physical symbols', in the culture as a metaphoric view can be studied, just as Egyptian archaeological artefacts were studied in terms of how they shed light on the life of the people, so too can physical artefacts reflect underlying culture (Bessant, 2003), but as to what they mean, it can be left to the interpretation of the researcher or to the employees

witnessing such physical symbols or artefacts. It is because of this fundamental difference that studies in innovation, with the purpose of linking specific factors of culture to innovation, could mostly be placed in the area where culture is viewed as a variable. This is supported by the fact that most innovation studies tend to look at the importance or impacts of culture (touching areas such as organizational structures, vision and mission statements, innovation processes and measurement systems, appropriate systems of reward, etc.) on organizational outcomes such as innovation (to be discussed in Chapter 3, Section 3.2.1). They are mostly in the area of culture being treated as an endogenous variable. Therefore, the variable view (specifically, as an endogenous variable) of culture has started to gain prominence, both in the academic and practitioner world, because it affords treatment of the various factors of organizational culture (or organizational practices, as introduced in Chapter 1) subject to qualitative and quantitative measurement, including measurement of impacts on organizational outcomes, such as innovation.

2.2.4   Summary

In the context of this research on innovation culture, culture is viewed as a variable (endogenous to an organization) and falls broadly within the organizational paradigm of contingency management. In the culture as a variable view, what draws researchers' attention is *"What do organizations accomplish and how may they accomplish more efficiently?"* and in the culture as a root metaphor they view it as *"What organization is accomplished and what it means to be organized?"* (Smircich, 1983: p. 353). The next section discusses and reviews various conceptualizations of culture in terms of the key constituents studied by various authors. The differences are reviewed and the key constituents of culture are summarized to set the context for this study.

2.3 CONCEPTUALIZATION OF CULTURE

Verbeke et al. (1998), through their analysis of 54 definitions of organizational culture, confirmed that culture relates to patterns of interactions, values and attitudes, assumptions, and beliefs as important constituents that describe culture. The 54 definitions mentioned were published in the mainstream literature on organizational culture. Although this provides a broad view of what the key constituents of culture are,

specific authors made some very explicit contributions to the literature on culture. These are discussed in this section.

Schein's (1981) conceptualization, its support in the literature

Schein's (1981) contributions to this field of research have been widely recognized as one of the most significant (Ott, 1989; Hatch, 1993; Reigle, 2003; Wilson, 2001; Driskill & Brenton, 2011). While the literature defines culture in many different ways, one of the valid sources of reference has been Schein (1981, 1985) who was cited 6,686 times (Dauber et al., 2012). Schein (1992: p. 9) defines culture as *"a pattern of basic assumptions invented, discovered and developed, as it learns to cope with its problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore be taught to the new members as the correct way to perceive, think and feel in relation to those problems."* For new members, this is adaptive behaviour and these adaptive behaviours instilled through organizational values and beliefs are associated with rituals, myths and symbols to reinforce the core assumptions of culture. Schein (1985) created a model that captures this view. His model provides a high degree of abstraction and reduces the complexity of understanding culture to a significant extent. It consists of three domains: a) artefacts, b) espoused values, and c) basic underlying assumptions. Each domain has certain constituents of culture (some of them were briefly touched upon in Section 2.2). The first domain, artefacts, includes written, spoken language and jargon, office layouts, symbols, organization structure, dress, technology and behaviour patterns. The second domain, espoused values, is those values that guide people's behaviours. The third level, basic underlying assumptions, is formed of unconscious beliefs and values but determines how group members think and feel. Schein (1981) distinguishes between observable and unobservable constituents of culture. The first two domains have less observable constituents but the last one has observable constituents.

Schein (1985) argues that there is a certain amount of hierarchy with respect to these domains. The visible behaviour influences and is influenced by unobservable rules, standards and prohibitions. Further, he suggests that the underlying assumptions have an

impact on values and values on the artefacts, and vice versa. Hatch (1993) who significantly contributed to the literature on culture – cited 731 times (Dauber et al., 2012) – separated 'symbols' as a fourth domain to explain how culture functions (see Figure 2.1). Further, she defined processes that link all of the four domains. She observes that observable behaviour emerges from underlying assumptions in two possible ways: a) through 'manifestation' into values and 'realization' into artefacts, b) through 'interpretation' into symbols and 'symbolization' into artefacts.
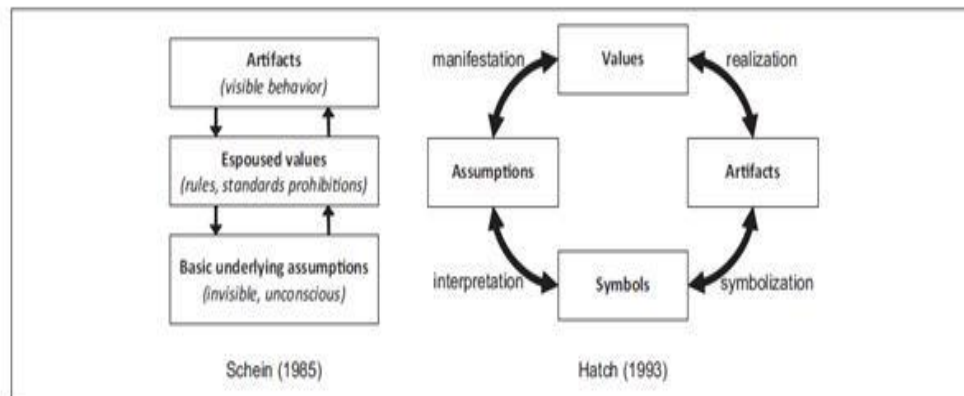
Figure 2.1: Schein (1985) and Hatch's (1993) Models Juxtaposed

Tesluk et al. (1997) also explain this relationship in a very similar way: basic values, assumptions and beliefs become enacted in established forms of behaviour and activities are reflected as structures, policies, management practices and procedures.

Other authors, however, do not strictly classify culture into three levels, but they broadly agree with Schein (1981) that culture can be classified into more and less visible[6] domains (e.g., Hofstede et al., 1990; Rousseau, 1990; Sackmann, 1991; Wilson, 2001), see Figure 2.2. With regard to the more visible constituents, other researchers, supporting Schein's (1981) conceptualization, argued that culture includes language, which comprises slogans, jargon and metaphors (Deal, 1985; Ott, 1989; Westbrook, 1993), tangible artefacts and symbols, and patterns of behavior, which comprises rituals and

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[6] *Prominent researchers such as Rousseau (1990) and Hofstede et al. (1990) described culture as an onion skin with the outside as having artefacts and symbols, which are more visible, and with the centre as having values and fundamental assumptions, which are deeper and less visible. Echoing these views, Sackmann (1991) used the analogy of an iceberg to differentiate between the visible (the tip), and the central and core components of culture (the underlying bulk). Wilson (2001) later suggested that, broadly speaking, the majority of culture researchers view culture as having two parts – the visible part and the deeper, less visible part.*

routines (Deal, 1985; Dyer, 1985; Hatch, 1993; Martin & Siehl, 1983; Ott, 1989). Similarly, further empirical research confirmed that stories and myths (Dyer, 1985) are also important constituents of culture. With regard to the deeper and less visible constituents, again, other researchers supporting Schein's (1981) conceptualization confirmed that espoused values (O'Reilly et al., 1991; McDonald & Gandz, 1992; Morris, 1992; Rogers & Ferketish, 1993; Mallak & Kurstedt, 1994) and basic underlying assumptions (Kilmann, 1984; Wilkins and Patterson, 1985; Barney, 1986; Denison, 1990; Westbrook & Utley, 1995; Berthon et al., 2001; McMurray, 2003) are important constituents of culture. From the above discussion, it is evident that Schein's (1981) conceptualization, supported by other independent research, identifies six key constituents of culture: language (including slogans, jargon and metaphors), stories/myths, tangible artefacts, patterns of behaviour (including rituals and routines), espoused values and basic underlying assumptions.
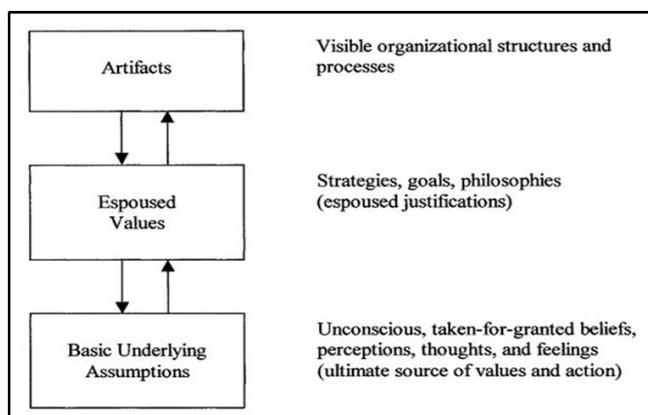
Figure 2.2: Schein's (1981) three domains of culture
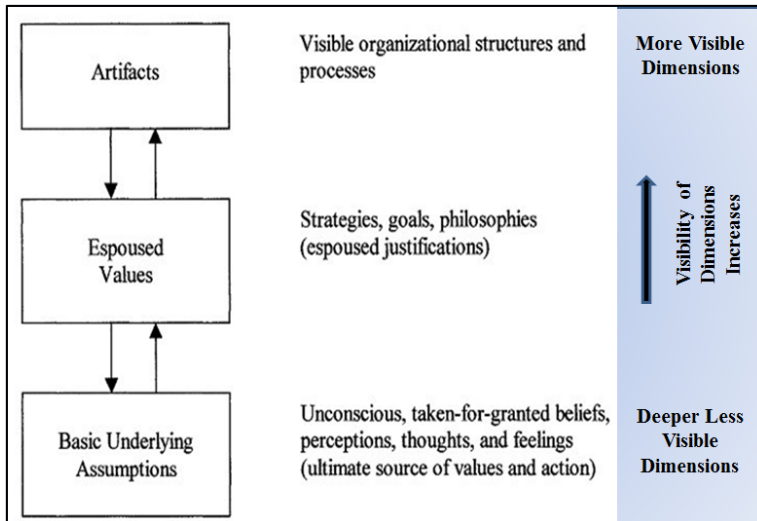
Figure 2.3: More Visible and Less Visible Constituents of Culture (Adapted from Schein, 1992)

Other, most noted conceptualizations of culture

In contrast to Schein's (1981) conceptualization, other widely studied conceptualizations of culture focus exclusively on espoused values and their associated practices (e.g. Denison, 1996, Harrison & Stokes, 1992). The research, based on values and associated practices, has contributed to the literature in identifying different types of culture in the form of topologies characterized by the type of espoused values. For example, Goffee and Jones (1998) investigated values, such as *sociability* (friendliness among the community) and *solidarity* (common tasks, mutual interests and clearly defined goals) as key values of culture. Cameron and Quinn (1999) used the competing values framework to describe culture along what they call 'dimensions': Flexibility and Discretion vs. Control and Stability, and External Focus and Differentiation vs. Internal Focus and Integration. Hofstede et al. (1990) researched IBM across companies in a global survey and classified the results into the following four key areas: a) *Power distance* – centres on the extent to which organization members feel comfortable in interactions across hierarchy levels. High power distance implies managers' role is to make decisions and low power distance implies that employees are empowered; b) *Uncertainty Avoidance* – concerns the degree to which organization members want to avoid ambiguity and uncertainty in favour of clear goals and operating guidelines; c) *Individualism and collectivism* – tracks the extent to which people prefer to be treated as unique individuals rather than as part of a group.

In collectivistic cultures, people find comfort in group settings; d) *Masculinity/femininity* – concentrates on the degree to which people feel that they should be results focused and insensitive to emotions versus feeling that they should be more nurturing, less results focused and more sensitive to emotions.

Further, concerning espoused values, Wallach (1983) studied three types of culture: *bureaucratic, innovative,* and *supportive*. The *bureaucratic* culture is similar to Harrison's role culture, in which there are clear lines of authority and responsibility; work is systematic and highly organized. Wallach believes that this culture is based on control and power. The *innovative* culture has a creative, exciting, and dynamic work environment with stimulation continuously present. However, this is not an easy place to work because of the constant pressure to innovate and achieve. On the other hand, the *supportive* culture has a warm and friendly work environment in which people are open, and tend to help each other and the organization in what they do. Personal as well as organizational values are constantly promoted in this culture.

Cooke (1989) also studied espoused values and described three types of culture: *Constructive culture* where members are encouraged to interact with each other and approach their tasks in ways that help them satisfy their needs. This culture is characterized by Achievement and Self-actualization norms of behaviour; *Aggressive-Defensive culture* where members of this culture approach their tasks in a forceful way to ensure their status within the organization. This culture is characterized by power, competitive, and perfectionistic norms of behaviour; *Passive-Defensive culture* where members interact with each other in a way that will not threaten their security. This culture is characterized by approval, dependent, and avoidance norms of behaviour.

Martin (1992) also made a significant contribution to the field of cultural values relating to culture and subcultures within an organization. Martin's (1992) conceptualization of cultures described three perspectives of culture based on consistency of values within the organization: integration (where values are consistent with formal practices, norms and attitudes), differentiation (values are consistent with practices but only within the boundaries of subgroups etc. leading to subcultures), and fragmentation (ambiguity is the norm marked by fluctuations between consensus and dissension).

According to Martin (1992), in addition to a distinctive core culture, organizations usually contain subcultures. Subcultures also have shared values and norms, yet they could differ from the main culture in which they are embedded. Most large organizations have a dominant culture and multiple subcultures. The dominant culture expresses the core values that are shared by the majority of an organization's employees (Gregory, 1983). Subcultures tend to develop in large organizations as a reflection of common problems, situations, or experiences that are faced by members of a work group (Gregory, 1983). Kilmann and Saxton (1983) suggest that the group culture which exists within an organization is moulded by its management, function, discipline, work process, and relationships with other subcultures as well as the organization's culture. Organizations usually contain subcultures that can be recognized. It is rare for an organization to possess a single, homogeneous, unitary culture (Kilmann, 1983; Kotter & Heskett, 1992; Schein, 1992; Trice, 1993); therefore, a description of organizations as monolithic cultural entities is not possible. Trice and Morand (1991) suggest that there are a few prominent locations where subcultures can arise: (a) occupations; (b) departments; (c) management; and (d) staff units. Martin and Siehl (1983) identified three types of subculture: *enhancing, orthogonal,* and *counterculture*. In *enhancing* subcultures, employees adhere strongly to the main values and beliefs of the main culture. A lengthy history of employment allows for strong commitment to the organization's dominant culture. On the other hand, *orthogonal* subcultures occur when employees adhere to cultures, the dominant organizational culture as well as another non-conflicting separate culture. Meanwhile, a counterculture presents a direct challenge to the dominant culture. This subculture presents pockets of resistance to top management's views and beliefs, especially when the organization engages in some changes. In summary, while it can be concluded that subcultures are not necessarily wrong, they are a natural consequence of decentralization.

While the conceptualizations described above are those of espoused values, because of the exclusive emphasis on only espoused values and their associated practices, some researchers criticized that ignoring strong symbolic aspects of culture (artefacts) and also underlying assumptions is tantamount to incomplete conceptualization of culture (e.g., Boyce, 1996; Reigle, 2003; Smircich, 1983). Further, broadly criticizing researchers in the field of culture research in general, Alvesson (1985) called for a redirection of focus

to more substantial aspects of culture, which according to him are productive work, structuring tasks, formalizing procedures, technical and bureaucratic control of work (control systems), productivity, participative and goal-setting leadership, and power relationships (power structures). Other authors also support adding *control systems* and *power structures* (e.g. Dauber et al., 2012; Johnson, 2000). Control systems are referred to as the measurement of budgeting, planning and control, and reward systems that monitor and guide members' actions to focus on what is important in an organization (Johnson, 2000). Control systems can be seen and observed by members. Therefore, control systems are more visible and tangible. Likewise, power structures relate to the role of organizational leadership; how leadership within an organization influences and shapes culture (Schein, 1985). More loosely, both control systems and power structures were already categorized as 'artefacts' by other researchers (e.g. Hatch, 1993; Schein, 1981), but Alvesson (1985) put more emphasis on these two constituents in particular as explained above. Therefore, adding the two additional constituents i.e., control systems and power structures, there are eight constituents (six have already been discussed earlier) altogether that broadly describe or constitute an organizational culture (see Figure 2.4).
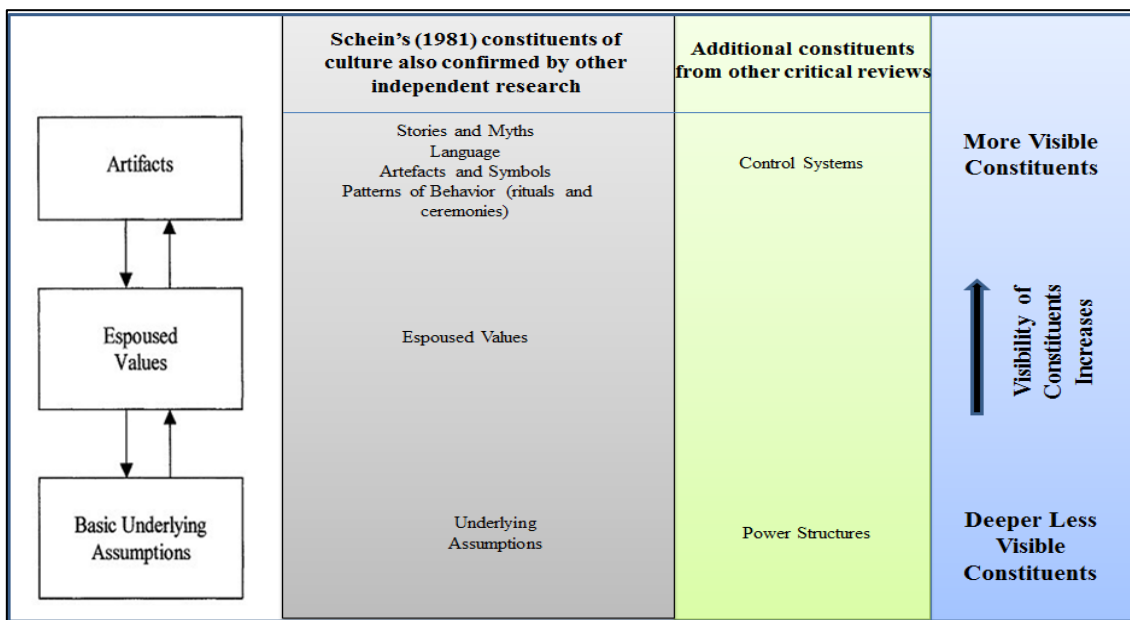
Figure 2.4: Summary of the Key Constituents of Culture (Adapted from Schein, 1992 and Alvesson, 1985)

Largely, these constituents have been the focus for researchers in the area of organizational culture research. From the perspective of innovation culture, these eight

constituents together could form a good reference framework against which the various factors of innovation culture can be better understood (discussed in Chapter 3, Section 3.3.1).

Alongside the development of the literature on organizational culture, organizational climate, a related stream of literature, had started developing in the 1960s (Schneider, 1990). It is important to discuss this briefly as there are criticisms that both climate and culture are being regarded as the same phenomenon (e.g. Denison, 1996). The definition of climate, its relationship with culture and how they are related/not related are briefly described in the next section.

2.4 ORGANIZATIONAL CULTURE, ITS CLOSE AFFILIATES

Following Adcock and Collier (2001) who suggested that in order to understand the concept or phenomenon under study better, other related constructs need to be explored and to be understood regarding how they relate or do not relate to the core concept under study. Therefore, in this section, the construct of climate, which is a close affiliate of culture, is discussed in order to clarify its role in this study and clearly establish how it is different from culture as used in reference to this research study.

Organizational climate is defined as a concept that reflects the general atmosphere or mood of a workplace (Moran & Volkwein, 1992; Andriopoulos, 2001). This general atmosphere of a workplace, which is transient, emerges from employees' collective and shared perceptions of organizational functioning and practices (Yahyagil, 2006) relating to values such as trust, autonomy, cohesiveness, risk-taking, etc. (Moran & Volkwein, 1992). The general atmosphere emerging from employees' perceptions is assumed to influence the motivation, satisfaction and behaviour of the individuals in an organization (Dastmalchian, 1986), individuals' effectiveness (Wallace et al., 1999), innovation (Amabile et al., 1996; Anderson & West, 1998; Ekvall, 1996), etc. In this sense, there appears to be an overlap between climate and culture (Schneider, 1990).

Therefore, there has been criticism of both climate and culture research having a similar research focus. For example, researchers such as Denison (1996) and Van Den

Berg and Wilderom (2004) argued that there is a similarity in values such as risk-taking, trust, autonomy, etc. examined by researchers of organizational climate and culture, and therefore there is little difference between the two. Further, Denison (1996) stated that climate and culture are different ways of measuring the same phenomenon in an organization. Given this criticism, the question 'How then is climate related or not related to culture?' requires clarification.

Several researchers have made attempts to clarify the differences between climate and culture, stating that climate emerges from individuals' perceptions of organizational practices (e.g. Litwin & Stringer, 1968; Reicher & Schneider, 1990; Schneider, 1990; Moran & Volkwein, 1992; Wallace et al., 1999) while culture is the norms and value systems within the organization that give rise to those practices (Hofstede et al., 1990; Verbeke et al., 1998; Isaksen & Lauer, 2002). Organizational climate can thus be seen as the perceptions of organizational practices and not the practices themselves (Jaskyte & Dressler, 2005). Verbeke et al. (1998), in their analysis of 32 definitions of climate, conclusively stated that climate refers to the perceptual construction of the members of an organization about the underlying practices followed.

Although climate and culture are different in the sense that they are explained above, they can mutually influence each other (Moran and Volkwein, 1992; Tesluk et al., 1997; Glisson & James, 2002). Hofstede et al. (1990) and Chandler et al. (2000) argued that practices, which characterize organizational culture, have an influence on members' perceptions that give rise to climate. They also confirmed that the practices are nothing but visible manifestations of deeper, less visible values and assumptions (i.e. the visible part of culture). Therefore, it follows that the visible part of culture has an influence on climate. Likewise, climate (mood/atmosphere) arising from collective perceptions of individuals has an influence on the visible part of culture (attitudes, behaviours and norms) and eventually on the deeper part (in forming underlying assumptions) (McMurray, 2003; McLaughlin et al., 2008). It is also worth mentioning that Scott and Bruce (1994: p. 602) noted the following in their empirical study on determinants of innovative behaviour: *"The role of climate as a mediator may be overstated in the literature, at least as it relates to innovative behavior."* They reported that they could not

find any individual or group characteristics that engendered differences in climate perceptions. Also, Saleh and Wang (1993) reported no impact of climate across more innovative and less innovative companies. They said (p. 19), *"This may mean that the general climate of the organization is not a strong factor in promoting or discouraging innovation."* However, there is a separate stream of research (e.g. Panuwatwanich et al., 2008) endeavouring to study such mutual influences (e.g. Moran and Volkwein, 1992; Wallace et al., 1999; Sušanj, 2000).

An interesting perspective provided by McLean (2005) throws more light on the differences. McLean (2005: p. 229) highlighted that *"climate is the surface level manifestation of practices and patterns of behavior rooted in the assumptions, meaning and beliefs, that make up the culture"* and that its focus is on creativity (*"ability to produce work that is both novel and appropriate"*) and not necessarily innovation (*"a process of developing and implementing a new idea"*). He further adds, that *"the distinction, similarities and relationship between the two terms (climate and culture) is important for the study of creativity and innovation because it drives the methodology that is used in conducting research and because the majority of the research in the literature is really looking at the relationship between climate, creativity and innovation and not innovation culture."* Therefore, at this point, it is important to clarify that the focus of this research is on organizational practices, their impact on innovation, and the underlying assumptions and values that give rise to those practices. This thesis acknowledges that perceptions of the practices (as discussed above) as climate and culture can have mutual impacts (Moran and Volkwein, 1992) and that there should be congruence between what the organization values (as culture) and what the employees perceive (as climate); the lower the incongruence the better it is for innovation-supportive cultures (McLean, 2005). However, the study of the specific constituents of climate and how perceptions may be enabled is not included within the scope of this study.

2.5 KEY INSIGHTS FROM ORGANIZATIONAL CULTURE LITERATURE

The following are the key insights (and implications for this research) from the discussion presented in this chapter:

First, taking one research paradigm or another (e.g. comparative, contingency, cognitive, etc.), in terms of culture research, can have an implication for innovation culture research. The variable view of culture lends itself easily to view culture as a lever to produce outcomes such as innovation. Therefore, this research, in that sense, can be placed within the contingency management of organizational paradigms from a research perspective.

Second, there is broad consensus that culture has two parts (more visible and less visible culture). The literature review identified eight key constituents of culture: stories/myths, language, artefacts and symbols, patterns of behaviour (rituals and routines), control systems, espoused values, power structures and underlying assumptions. All of these are important constituents and therefore together they can form a good reference framework to understand factors of innovation culture better.

Third, there can be subcultures within an organizational culture. There can be specific nuances with regard to constituents of culture and organizational practices by specific departments/functional disciplines in an organization. In a similar vein, there could be common practices shared across the organization. When undertaking culture research, studies should consider a wider cross-section of the business rather than a single individual (or a department) representing an organization. This is equally applicable to the studies on innovation culture.

Finally, although the literature reveals little consensus with regard to the overlapping nature of the studies of climate and culture, a few renowned researchers argued that they are different in that culture refers to the organizational practices (not their collective perception) and the values and underlying assumptions. Therefore, for the purpose of this research, climate is treated as out of scope.

2.6 CHAPTER SUMMARY

This chapter has given an overview of the culture in general, its traditions of research from a management perspective. It has been discussed that there are two broad perspectives from which culture is viewed: variable view and root metaphor view. An important aspect of the impact of culture on performance of a firm in the variable view is discussed. The former is usually studied under two organizational paradigms of research and the latter three. Altogether, the five different organizational paradigms of research were discussed and it was concluded that this research study will broadly fall under the category of contingency management.

Also, reviewing the numerous conceptualizations of culture by a number of scholars, it was shown the scholars mostly agreed that there are two parts of culture (visible and less visible) and eight constituents of culture. Further, it was discussed how an organization has subcultures and that existence of subcultures is not necessarily wrong. On the contrary, subcultures are a necessary consequence in any context of decentralization. So, from a research perspective it was noted that more representation from an organization needs to be present to better understand the culture of an organization.

Additionally, the relationship between culture and climate was also discussed and it was concluded that the focus of this research is culture and not climate, although the influence of climate on the visible part of culture has been acknowledged.

The next chapter (Chapter 3) will identify the various conceptualizations of innovation culture and present a discussion on the various factors of innovation culture (from the SLR presented in Appendix 1-1).

3.0 REVIEW OF INNOVATION CULTURE LITERATURE

3.1 INTRODUCTION

The purpose of this chapter is to provide a synthesis of the systematic review of literature on innovation culture. Building on what organizational culture is (as discussed in Chapter 2), this chapter traces the traditions of innovation culture research, provides details of the conceptualization of innovation culture in the literature, and clarifies the phenomenon of innovation culture against the backdrop of other related concepts (but not the same) that can potentially overlap with it.

Therefore, this chapter covers the following topics:

- The traditions of innovation culture research (Section 3.2);
- The conceptualization of innovation culture (Section 3.3);
- The definitions of innovation culture's close affiliates – creative climate, organizational innovativeness, organizational innovation, and how they are related (or not) to innovation culture (Section 3.4);
- Key insights from innovation culture literature (Section 3.5); and
- The chapter summary (Section 3.6).

3.2 TRADITIONS OF INNOVATION CULTURE RESEARCH

3.2.1   Introduction

In this section, before delving into the details of the traditions of innovation culture research, the terms *innovation* and *innovation culture* will be briefly discussed. The literature on innovation is replete with definitions of innovation. Joseph Schumpeter's definition was the most influential. He considered five aspects of innovation (Schumpeter (1934) cited in Goffin & Mitchell (2005)): the introduction of a good (product or service), new methods of production, opening of new markets, use of new sources of supply, and

new forms of competition. While Schumpeter's definition covers 'newness' broadly, some researchers have added that innovation is associated with 'change' (Becker & Whisler, 1973; Damanpour, 1991; Coopey et al., 1998), and others have added 'newness' associated with the relevant unit of adoption and how it benefits individuals who produce innovation and also those who consume it (e.g., Zaltman et al., 1973). West and Farr's (1990: p. 310) definition captures the above discussed ideas very succinctly. They define innovation as, *"the intentional introduction and application within a role, group or organization of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group, organization or wider society."* Innovation in this thesis broadly refers to this definition.

As discussed in Chapter 2, as with organizational culture[7], *innovation culture* is also a very frequently used, but a rarely defined term (Jucevicius, 2007). For example, if one types 'innovation culture' into Google Search, there are more suggestions on 'ways to create and sustain' innovation culture, 'strategies to build' innovation culture, 'behaviours' that can create innovation culture, etc., than there are definitions. Also, from a research perspective, there is very little evidence of any firm definition of innovation culture; on the contrary, the literature on innovation culture pays greater attention to what 'constitutes' an innovative organizational culture (Jucevicius, 2007). This was confirmed by the Systematic Literature Review (SLR), which looked at the factors of innovation culture. However, a broad definition can be provided here. AECA (1995) defined innovation culture as *"a way of thinking and behaving that creates, develops, and establishes values, attitudes within a firm, which may in turn raise, accept and support ideas, changes involving an improvement in the functioning and efficiency of the firm, even though such changes may mean a conflict with conventional and traditional behavior."* While innovation culture in this thesis broadly refers to this definition, it more specifically embraces the idea that innovation culture constitutes a set of factors (Jucevicius, 2007) as described in Section 3.3.

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[7] *In Chapter 2, it was discussed that organizational culture, at its core, is underlying assumptions or unstated rules, which manifest in the form of espoused values and norms within the organization, which can in turn be seen in more observable practices called artefacts (including symbols, rituals, and patterns of behaviour).*

3.2.2   Traditions of innovation culture research

Although the concept of innovation culture only recently started developing more fully, the acknowledgement that there are specific factors which support innovation has been there in the literature since the beginning of the development of the idea of organizational culture. For example, Burns and Stalker (1965), two of the earliest recorded authors on organizational cultures, described how flexible and less bureaucratic organizational structures can support innovation. Also, some more relatively recent studies in the field of organization cultures such as those of Wallach (1983) and Schein (1985, 1992) identified factors (e.g., flexibility, empowerment, risk-taking etc.) supportive of innovation. However, more studies on innovation culture have been published post 2000 (see Appendix 1-1, Section A.4, Descriptive Statistics). Between the early fledgling publications in the 1980s and the fully fledged publications on innovation culture post 2000 (e.g., Jassawalla & Sashittal, 2002; Eckermann et al., 2003; Martins & Terblanche, 2003; Jaskyte, 2004; Jaskyte & Dressler, 2005; Kenny & Reedy, 2006; Dombrowski et al., 2007; Dobni, 2008; Tellis et al., 2009), i.e., during the 1990s, a number of significant studies have been published that provided empirical evidence that culture is a key determinant of innovation (e.g., Damanpour, 1991; Amabile et al., 1996; Denison, 1996; Ahmed, 1998; Cameron & Quinn, 1999; Hoffman, 1999) and also how cultures with certain types of values are supportive of innovation (e.g., Harrison & Stokes, 1992; Cameron & Quinn, 1999).

Building on research in the 1980s and 1990s, more papers were published post 2000 and the vast majority of them can be broadly divided into two streams of scholarly work[8]: (a) the studies interested in the generic culture profile looking at an overall impact of culture on innovation (e.g., Jaskyte & Dressler, 2005; Tan et al., 2008) using generic culture measurement instruments (e.g., Harrison & Stokes' (1992) culture profiles, and Cameron & Quinn's (1999) competing values framework) and (b) the studies interested in understanding specific factors of culture and their impact on innovation outcomes (e.g.,

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[8] *More on these types of research (culture profile versus looking at factors of innovation culture) are discussed in Section 3.3.5.1. A culture profile is a multi-dimensional construct of culture that has factors but the relationship between the factors and the construct itself is not very clear. This can be contrasted against a multi-dimensional construct that has factors in it which are an aggregation of the direct summation of the factors. More specific details of a culture profile of multi-dimensional constructs can be found in Law et al. (1998).*

product, process, administrative innovation, etc.) using specific instruments developed to measure innovation culture (e.g., Eckermann et al., 2003; Kenny & Reedy, 2006; Dobni, 2008). Both these streams of research are very much in line with the *etic* approach to researching culture (the *etic* approach was discussed in Chapter 2, Section 2.2.2). This research looks closely at the factors of innovation culture and falls broadly into the latter body of scholarly work, which uses the *etic* approach to researching culture.

3.2.3 Organizational paradigms of innovation culture research

In Chapter 2 (see Section 2.2.3, Table 2.1) five paradigms of organizational research under which culture is being researched were discussed. Building on that discussion, Table 3.1 provides examples of the studies in innovation culture that fall into those five paradigms. It is not surprising that a large number of studies in innovation culture research (see No. 2, 'Contingency Management'), which considers culture as an endogenous variable, use *etic* approaches as discussed above (Section 3.2.2). Table 3.1 indicates that there are very few studies on innovation culture under the organizational paradigms of 'organizational cognition', 'organizational symbolism', and 'structural psychodynamic perspective', which belong to the culture research that uses *emic* approaches. For example, research carried out by Jassawalla and Sashittal (2002) on stories, layout and symbols falls into the 'organizational symbolism' perspective. Within this organizational paradigm, innovation culture is seen as being part of the organization (and not a separate entity) where leadership, decision making, interactions, and the surrounding physical environment and symbols shape human interactions and from them emerge a shared reality and a shared value system against which members organize and interpret their experience. Also, there are very limited studies on the 'comparative management' organization paradigm of research where cross-cultural research is undertaken. An example of this is that of Hoffman (1999) who studied various cultures (Belgium, France, Switzerland, Germany etc.) and the impacts of changes in the environment on organizational innovation (specifically, structural innovation i.e., changes in the organization with regard to new positions or departments as well as formal or informal relationships among them).

Table 3.1: Organizational Culture Research Paradigms and their Implications for Innovation Culture Research

No.	Organizational Paradigm	Key Theoretical features	Examples of Innovation Culture Research	Reference Studies (From Systematic Review)
1	Comparative Management	Grounded in functionalism and classical management theory	Cross-cultural studies of innovation culture	Tellis et al. (2009) Hoffman (1999)
2	Contingency Management	Grounded in structural functionalism and contingency theory	Impact of culture on organizational innovativeness	Jaskyte & Dressler (2005)
			Impact of culture on innovation and performance	Khazanchi et al. (2007)
			Innovation culture as a moderator of the relationship between leadership and business performance	Panuwatwanich et al. (2008)
			Innovation culture as a moderator of the relationship between knowledge accumulation and organizational innovation	Chang & Lee (2008)
			Impact of strategy, culture and structure on innovation in organizations	Saleh & Wang (1993)
			Impact of culture on innovation implementation	Caccia-Bava et al. (2006)
			Impact of determinants of culture such as strategy, structure, behaviours, communication etc. on innovation	Zdunczyk & Blenkinsopp (2007)
			Impact of innovation culture on organizational performance	Chandler et al. (2000)
3	Organizational Cognition	Grounded in ethno-science and cognitive organizational theory	Organization culture seen as knowledge repository and how it impacts innovation	Lemon & Sahota (2004)
4	Organizational Symbolism	Grounded in symbolic anthropology and symbolic organizational theory	Research on the use of symbolism and rituals in an organization and their impact on innovation	Jassawalla & Sashittal (2002)
			How do "organizational culture artefacts" have an impact on innovation	Higgins & McAllaster (2002)
5	Structural/ Psychodynamic Perspective	Grounded in structuralism and transformational organizational theory	Qualitative research on the impacts of founders' will on developing innovation culture	Feldman (1988)

Note: Basic Framework adapted from Smircich (1983) and Deshpande & Webster (1989)

3.2.4   Summary

This research work falls into the category of research that considers culture as an endogenous variable, clearly positioning this study in the 'contingency management' paradigm of organizational research. Therefore, the implication for this research study is that culture is viewed as an instrument or tool (Smircich, 1983) that can influence behaviours that are important and necessary for innovation (Martins & Terblanche, 2003).

3.3 CONCEPTUALIZATION OF INNOVATION CULTURE

This section introduces the concept of innovation culture as a set of factors and how they relate to organizational culture, provides a brief note on the approach adopted to synthesize the SLR (Section 3.3.1), and presents the synthesis of the SLR (3.3.2 to 3.3.4).

3.3.1   Introduction

As discussed in the previous section, this research treats innovation culture as a set of cultural factors that support innovation within an organization. From the SLR, a total of 27 factors of innovation culture have been identified (see Appendix 1-1 for full details of the SLR and Appendix 3-1 for the full list of 27 factors). These 27 factors are related to one or more of the eight key constituents of culture, which are either less visible or more visible (discussed in Chapter 2, Section 2.3). For example, the factor 'leadership support and commitment' is a cultural 'value' espoused by leadership. Likewise, 'rewards and recognition' is an internal mechanism or 'control system' by which employees are motivated. This result is not surprising as the importance of both visible and less visible domains of culture[9] was discussed in culture research as well (in Chapter 2). While some scholars have emphasized the

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[9] *Tesluk et al. (1997) explain that 1) the basic underlying assumptions and beliefs (less visible domains of culture) become enacted in established forms of behaviours and activity, and are reflected as structures, policy, practices, management practices and procedures (more visible domains of culture). They further explain that through socialization processes individuals learn what behaviour is acceptable and how activities should function, and that these in turn have an impact on the underlying assumptions based on the outcomes of these behaviours, thus highlighting the nature of impacts both ways (between the less and more visible domains of culture). Thus, both the visible and less visible domains of culture (discussed in Chapter 2, Section 2.3) play an important role in shaping culture.*

importance of both less visible and more visible aspects of culture (e.g., Schein, 1985; Hofstede et al., 1990; Rousseau, 1990; Sackmann, 1991), not too long ago, Alvesson (1985) highlighted the importance of visible practices within an organization. He argued that culture forms the core activities/practices (more visible) in an organization that are in turn influenced by values, beliefs and underlying assumptions (less visible) etc. He added a more granular level of detail to, for example, 'artefacts' to include practices such as recruitment processes to recruit creative people, and 'control systems' to include appraisals and management performance reporting processes, etc. Empathetic to the idea of turning the focus onto core activities/practices (i.e., more visible aspects of culture), a few organizational culture researchers (e.g., Hatch & Cunliffe, 2006; Dauber et al., 2012) have created frameworks that highlight all possible organizational areas that relate to more visible culture. For example, Hatch and Cunliffe's (2006) organizational culture model includes: organizational strategy, strategic response to the environment, organizational culture and identity, organizational design and processes, and organizational behaviour and performance. Dauber et al. (2012) created a model that relates to Schein's (1985) model and Hatch and Cunliffe's (2006) model (which puts more emphasis on the visible organizational core activities and practices). This is shown in Figure 3.1 (shaded rectangles represent the domains – basic underlying assumptions, espoused values and artefacts – from Schein's model and the ovals represent Hatch and Cunliffe's model). This captures the contemporary view of culture incorporating more visible practices of culture. This aligns to the findings from the SLR as factors of innovation culture relating to strategy (e.g., innovation vision, mission and strategy), structure (e.g., flat organizational structure), processes (e.g. learning processes) etc.
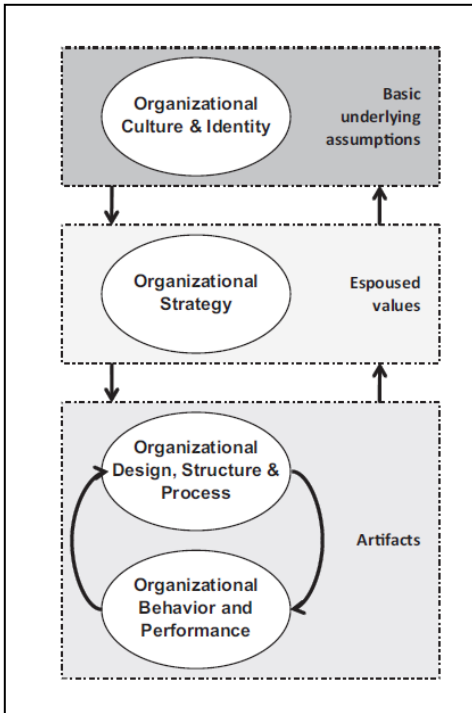
Figure 3.1: Relating culture to other organizational areas (Source: Dauber et al., 2012)

The alignment of innovation culture to the contemporary view of organizational culture becomes clearer when the organizational culture model developed by Dauber et al. (2012) is conflated with the innovation culture model developed by Martins and Terblanche (2003), which has five key areas of culture[10] (strategy, structure, support mechanisms, behaviours, communication) most of them relate to more visible parts of culture. [Please refer to Figure 3.2] The 'organizational design, structure and processes' and 'organizational behavior and performance' from Dauber et al. (2012) are mapped to the 'structures and supporting mechanisms' and 'behaviors' and 'communication' respectively of Martins and Terblanche's (2003) model. There is of course a direct one-to-one mapping to strategy. The only area that is left unmapped is the underlying assumptions. For the sake of completeness,

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[10] *Strategy – refers to an innovation strategy that promotes development and implementation of new products and services*
Structure – refers to an organizational structure that promotes values that are supportive of creativity and innovation
Support mechanisms – refers to means or mechanisms by which innovation is supported (e.g., rewards and recognition)
Innovative behaviours – refers to values and norms that manifest themselves in specific behavioural forms that promote or inhibit creativity and innovation
Communication – refers to an open and transparent communication that is based on trust

one can make a reasonably good assumption that Martins and Terblanche[11] (2003) refer to the basic underlying assumptions as applying to all five areas of their innovation culture model.
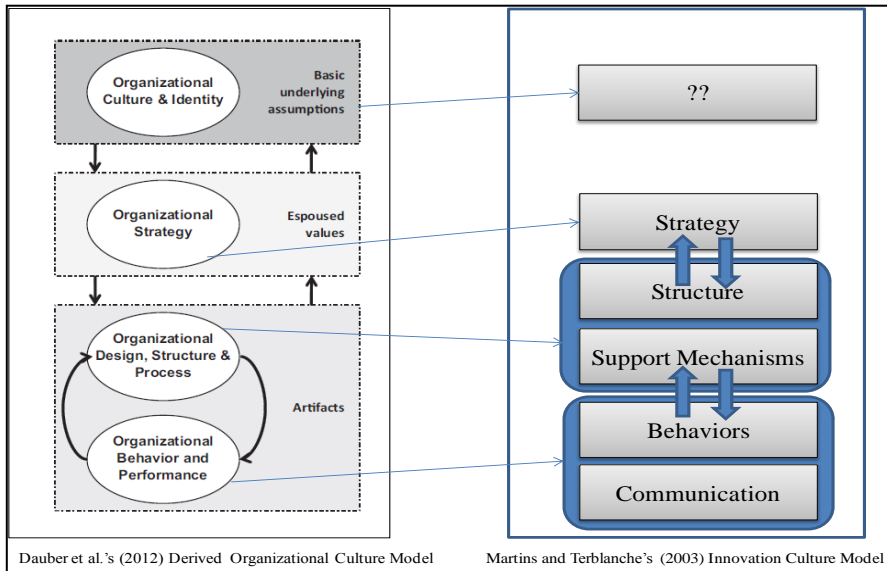
Figure 3.2: Conflation of organizational culture model and innovation culture model

Using these broad guidelines (as presented above and the mapping in Figure 3.2), the factors of innovation culture (summarised in Appendix 3-1) have been mapped onto the five areas of culture as shown in Table 3.2.

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[11] *For example, Martins and Terblanche (2003) mentioned in their paper that "the assumptions of personnel in the organization on how to act and behave...will have an impact on the degree of creativity and innovation" (p. 69). Also, discussing support mechanisms, they say "the values and beliefs of management are reflected in the type of people that are appointed" (p. 71). Both examples refer to underlying assumptions.*

Table 3.2: The 27 Factors from SLR Mapped to Culture (Martins and Terblanche, 2003)

No.	Determinants of Culture	Key Factors from the systematic literature review (in bold and italics)
1	Strategy	Embodies *innovation vision/mission and strategy* (KFL8), and *scanning and tracking market* (KFL20) and *leadership support and commitment* (KFL10)
2	Structure	*Flexible Organizational Structures* (KFL6), *networking and boundary spanning* (KFL12)
3	Support Mechanisms	Include *focus on innovation portfolio* (KFL3), *diversity* (KFL4), *innovation process* (KFL7), *job rotation* (KFL9), *physical symbols* (KFL15), *rewards and recognition* (KFL17), *safe spaces* (KFL19), *slack resources* (KFL21), *talent and creativity* (KFL23), *task orientation* (KFL24), *team composition* (KFL25), *technology tools to support innovation* (KFL26), and *workgroup support* (KFL27)
4	Innovative Behaviour	Include *client focus* (KFL1), *collaboration (internal)* (KFL2), *empowerment and autonomy* (KFL5), *learning and development* (KFL11), *participative safety* (KFL14), *quick decision making* (KFL16), *risk-taking and experimentation* (KFL18)
5	Communication	*Open and transparent communication* (KFL13), *stories and myths* (KFL22)

Note: This table includes factors from SLR aggregated under five determinants of innovation culture[12]

Examples of how the mapping was undertaken are provided in Appendix 3-2. Table 3.2 shows how the factors of innovation culture can potentially map onto (or relate to) organizational culture (or the five areas of culture). Relating the factors of innovation culture to organizational culture reinforces the idea that organizational culture can be used as a lever or instrument to generate innovation outcomes using the factors of innovation culture. A short note on justification for this type of assessment has been presented in Appendix 3-4.

The SLR noted that the factors of innovation culture were studied at three levels within an organization: individual, group and organizational. Therefore, the synthesis is also presented at these three levels. There are studies covering (a) factors at an individual level (e.g., individual personality traits and how they are relevant in the context of innovation culture (Woodman et al., 1993; Scott & Bruce, 1994; Tesluk et al., 1997; Ahmed, 1998; Malaviya & Wadhwa, 2005; Patterson et al., 2009), (b) factors at a group/team level (e.g.,

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[12] *Words that are bold (highlighted) are the variables included in their model. As mentioned in Table 3.2, they call them "determinants" of culture i.e., the broad dimensions (or aggregation of factors) that determine the culture of innovation*

team composition, diversity of groups) and how they are relevant to innovation culture (Woodman et al., 1993; Judge et al., 1997; Anderson & West, 1998; Mohamed, 2002), and (c) factors at an organizational level (e.g., leadership direction, innovation vision, mission and strategy) (Woodman et al., 1993; Tushman & O'Reilly, 1997; Hartmann, 2006; Tellis et al., 2009) that impact both on individuals and groups (Woodman et al., 1993). The discussion presented in the next three subsections relates to the 27 factors from the SLR[13] at all of the three levels.

3.3.2 Factors of Innovation Culture: Individual Level

Individuals are a core part of the innovation process[14] (Scott & Bruce, 1994; Malaviya & Wadhwa, 2005). Therefore, Ahmed (1998: p. 35) suggests that *"organizations need to consider the type of employees that can most effectively drive innovation."* Woodman et al. (1993) and Ahmed (1998) highlighted that individual personality traits can range from *cognitive factors* such as fluency of expression, originality, elaboration, ideational fluency etc., to *personal creativity* to *intrinsic motivation* to *personal initiative* to *skills and knowledge*. However, Ahmed (1998) argues that this comes with a warning, as the organizational environment may be more relevant to innovation than individual creative ability. The SLR noted that there was more focus on *personal initiative, skills and knowledge* (Scott & Bruce, 1994; Malaviya & Wadhwa, 2005; Çakar & Ertürk, 2010) than on *cognitive factors* or the *creative personality*.

Jamrog et al. (2006: p. 15) in their survey study noted that *"the corporate environment plays a large part in helping people live up to their creative potential."* In his measurement instrument to measure innovation culture, Dobni (2008) used phrases such as 'I consider myself to be a creative/innovative person' and 'I am prepared to do things differently if given a chance'. Although on the former (individual creativity) there was a

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[13] *Please note that the shortlisting of factors of innovation culture (as explained in Appendix 1-1, A.3 Stage 3) was done on the basis that there should be at least one theoretical and one empirical paper or at least two empirical papers to qualify to be in the final list of factors.*

[14] *Innovation Process is a "discontinuous set of activities of innovation rather than discrete, sequential stages, individuals can be expected to be involved in any combination of these behaviors at any one time" (Scott & Bruce, 1994).*

lower factor loading, the latter (I am prepared to do things differently) indicated that personal initiative (rather than creative ability) had a higher factor loading towards the factor he called 'Employee Creativity'. Scott and Bruce's (1994: p. 601) study provided similar results; their findings suggest that *"individuals do not need to be highly intuitive problem solvers to be innovative."* And so did Patterson et al.'s (2009) survey study, Wang and Ahmed's (2004) study, and Valencia et al.'s (2011) study; their findings supported the importance of personal initiative (over creative ability), of taking the responsibility to initiate and continually persevere to take innovations from their initial stages through to delivery. In addition to personal initiative, another area of importance noted was *skills and knowledge* of individuals. Koc's (2007) and Kenny and Reedy's (2006) studies indicated the importance of skills, knowledge and competence of individuals as influencing or having an impact on innovation. This aspect of individual's personal initiative, skills and knowledge (and not necessarily cognitive factors) have been coded as *'Talent & Creativity'* (see Appendix 3-3 for details of evidence available) and its definition considers all aspects discussed above (see Appendix 3-1).

Summary

While different aspects were highlighted in terms of the creative personality, the weight of evidence seems to suggest both 'personal initiative' and 'skills and knowledge' are more important than cognitive factors (or creative ability) in the context of an innovative organizational culture. There are only a limited number of studies that focus on individual *'Talent and Creativity'* (e.g., Scott & Bruce, 1994) as a factor of innovation culture; however, it is unclear how creative talent can perpetuate a culture of innovation.

3.3.3 Factors of Innovation Culture: Group/Team Level

The factors of innovation culture have also been studied at a group level. A group/team[15] behaves as a focused community responsible for both generating and perpetuating innovation within the organization (West & Farr, 1990; Judge et al., 1997; Isaksen & Lauer, 2002; Rasulzada & Dackert, 2009). Groups/teams are viewed as subsystems embedded in a large system (Mohamed, 2002); these subsystems (of an organization) or teams initiate innovation and subsequently develop it into a 'routine' practice within the organization (Tesluk et al., 1997; Anderson & West, 1998; Mohamed, 2002; Dackert et al., 2004). This is why innovation at a group level is important. At the level of groups/teams, innovation has been studied in terms of organizational factors that (a) create a climate for group innovation (Anderson & West, 1998), (b) contribute to group innovative behaviour (Dackert et al., 2004) and (c) group innovation (Judge et al., 1997; Mohamed, 2002; Archer & Walczyk, 2006). This review however focused only on the latter two as the former (climate for group innovation) studies directly relating to climate are considered to be outside the scope of this review (see Chapter 2, Section 2.4). Please refer to Appendix 3-3 for details of weight of evidence (as per the SLR in Appendix 1-1) available for each of the factors discussed below.

One particularly significant study of innovation culture at a group level, i.e., R&D teams, was that of Judge et al. (1997). Their empirical investigation concluded that *balanced autonomy, personalized recognition system, integrated sociotechnical systems* and *continuity of slack* contribute to group/team innovation. The first aspect, i.e., *balanced autonomy,* refers to setting strategic goals for individuals but giving them operational autonomy/freedom to achieve those goals (Judge et al., 1997). In his study, Mohamed (2002) found that the decentralized teams/groups with more discretion, decision latitude and autonomy had a positive impact on group level innovation. McLaughlin et al. (2008) also provided support for how group freedom and latitude to experiment supports radical innovation. All the three

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[15] *Please note that the literature on groups and teams makes a distinction between a group and a team – a group does not have common goals but a team does (Belbin, 1981). In this research, for the sake of simplicity, even a 'department' (as in the study by Mohamed, 2002) has been considered to be a group and both group and team are synonymously used. More generally, any informal group of people/employees brought together to achieve a targeted purpose is also considered to be a group here.*

studies together indicate that individuals within a team and the team or group itself need to be given autonomy and freedom in order to increase innovation at a group level. This has been coded as *'Empowerment'* but it is not clear how this leads to innovation. This factor has been identified at an organizational level as well (i.e., organization/management supporting empowerment as a value, see Section 3.3.4).

The second aspect is a *personalized recognition system*. Judge et al. (1997) argued that organizations which have personalized intrinsic reward systems (i.e., finding meaning in one's work, being recognized by one's peers, and receiving acknowledgement from superiors) in place are more successful than those that do not. They also highlighted that there are negative impacts of having more extrinsic rewards (i.e., monetary rewards) and this was supported by Tushman and O'Reilly's (1997) and Patterson et al.'s (2009) studies. Both intrinsic and extrinsic rewards[16] together have been coded as *'Rewards and Recognition'*. This factor has been identified at an organizational level as well (Section 3.3.4).

The third aspect is *integrated sociotechnical systems*. This refers to not only having employees who are technically qualified but also are a social fit. This combination produces group cohesiveness, which engenders innovative behaviours (Judge et al., 1997). Since this factor was researched in only Judge et al.'s empirical paper (Ahmed, 1998 made only a theoretical reference), it has not been coded as a key factor of innovation culture. Another aspect Judge et al. (1997) discussed was the *continuity of slack* or availability of slack resources. They found resource slack to be an important factor for technological innovation. Also, McLaughlin et al. (2008) found slack to be important for radical innovation within groups/communities. Availability of slack is important, but here a threshold of sufficiency must be present to counter misuse of resources (Judge et al. 1997). This has been coded as *'Slack Resources'*. This factor has been identified at an organizational level as well (Section 3.3.4).

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[16] *Archer and Walczyk (2006) and Tushman and O'Reilly (1997) discussed group rewards, but no empirical evidence was provided by them. Touching individual versus group rewards, Martins and Terblanche (2003) make a suggestion that organizations need to be sensitive to what types of reward – individual or team – are given. Owing to the lack of empirical evidence, this aspect of individual versus group rewards has not been discussed beyond this point.*

Another important aspect discussed in the context of teams/groups is the support provided by the team/group to individuals within the team/group. Amabile et al. (1996), Malaviya and Wadhwa (2005), Saleh and Wang (1993), through their studies, supported the view that perceived congeniality in the work environment and workgroup encouragement can lead to creative idea generation. Mohamed's (2002) study showed how positive group experiences have an impact on group innovation. Wang and Ahmed (2004) highlighted that the team's adaptability to change, driven by group dynamics, is important for innovation. While the above-mentioned studies supported workgroup support as a factor, Jaskyte and Dressler's (2005) and Jaskyte's (2004) studies in non-profit organizations suggested that the more team consensus and close orientation there is, the less challenge there would be among teams and hence the teams can tend to be less innovative. In contrast, Scott and Bruce's (1994) study found that there is no link between team exchange and innovation and they suggest that this could be because of a lack of any task interdependence. But the weight of evidence suggests that there is more support provided by an immediate workgroup that has task dependence between individuals, and this has been coded as *'Workgroup support'*.

Further, Mohamed's (2002) study supported the idea that leadership support, through appropriate communication within groups, motivating employees and ensuring confidence levels, visioning and goal setting, was found to be enabling group innovation. Further, Amabile et al. (1996), Judge et al. (1997), Dackert et al. (2004), through their studies, provide a link between supervisory support, in terms of enhanced member exchange with supervisors, and support of team's work and new ideas. Additionally, Scott and Bruce's (1994) empirical investigation of the LMX theory (leader-member exchange theory) confirmed that the perceptions of employees of their leaders' or supervisors' support drive their innovative behaviour. Thus, the idea of leadership support is coded as *'Leadership support and commitment'*. This factor has been identified at an organizational level as well (Section 3.3.4).

Yet another aspect that relates to group innovation is collaboration. Although collaboration is a 'meta-capability' (Liedtka, 1996 cited in Dombrowski et al., 2007), it has been discussed in the context of studies that supported both within and across functional groups/teams. McAdam et al. (2010) found that a team with a focused agenda to target produces innovation. Mohamed's (2002) study provided evidence of how groups with departmental members engaging actively in a continuous search for innovative ideas across departments/groups, will have a higher rate of innovation. Additionally, Saleh and Wang (1993), Dombrowski et al. (2007), and Zdunczyk and Blenkinsopp (2007) found that collaboration can happen through sharing information within and across teams. While Jamrog et al. (2006) also mention cross-functional team collaboration as important for innovation, no evidence has been provided by them. However, there is enough empirical evidence for this factor which has been coded as *'Collaboration'*.

Team composition is another area that pertains to group level innovation. Only three studies within the consideration set have noted this as a factor that supports an innovative culture and all three highlighted the importance of a mix of skills and competency for team innovation. Saleh and Wang (1993) noted the importance of integration, intermingling of talents in a team, setting up multi-disciplinary teams for innovation; McLaughlin et al. (2008) found that teams with a mix of people, including non-conforming and creative people, supports radical innovation in teams; Mohamed (1995) found that team innovation needed a well-selected, confident, knowledgeable and enthusiastic project team. This has been coded as *'Team Composition'*. A related, but not the same, aspect is team diversity at a group team level, i.e., having teams with individuals that are different (in terms of ethnicity, religion, experience, gender, etc.) far beyond just skills and competency. Mohamed's (2002) study provided empirical evidence of the link between team diversity and departmental innovation. Jamrog et al.'s (2006) study findings on diversity also supported team diversity and its importance for innovation. While Amabile et al. (1996) also highlighted the importance of team diversity, no direct empirical evidence was provided. Although having limited empirical evidence, it has been coded as *'Diversity'*. '*Diversity'* has also been identified at an organizational level (Section 3.3.4).

Another important aspect that is applicable at a group level is the setting of performance objectives and goals for team members. Setting performance goals and objectives ensures excellence of quality of task performance in relation to shared vision or outcomes of a group typically involving evaluations, modifications, control systems and critical appraisals. Although Amabile et al. (1996) and McLaughlin et al. (2008) discuss this in detail, only the latter provided empirical evidence that setting clear project team objectives supported group innovation. This has been coded as *'Task orientation'*; however, it is not clear how specifically task orientation leads to innovation. This has also been identified at an organizational level (Section 3.3.4).

Summary

A number of factors have been highlighted as relevant for innovation at a group/team level. Factors such as *'Empowerment', 'Rewards and Recognition', 'Workgroup support',* and *'Leadership support and commitment'* have more empirical support than other factors such as *'Slack resources', 'Team composition', 'Task orientation',* and *'Collaboration'* at a group/team level. It is, however, not very clear as to why certain factors are mentioned and researched more than others. Also, while the studies showed a link between each factor and innovation, it is unclear how some of the factors such as *'Empowerment', 'Task orientation',* etc. at a group level actually lead to group innovation.

3.3.4 Factors of Innovation Culture: Organizational Level

The majority of the studies in the consideration set relates to factors of innovation culture at an organizational level, but influences both individuals and groups as well. This subsection discusses the details of various factors of culture having an impact on innovation at an organizational level. For the purpose of continuity, some of the factors discussed at the group level and applicable at an organizational level as well, have been discussed first in addition

to other relevant organizational factors. Please refer to Appendix 3-3 for details of weight of evidence (as per the SLR in Appendix 1-1) available for each of the factors discussed below.

Empowerment. Many researchers have found a link between empowerment and innovation and argue that individuals are more innovative when they perceive themselves as having the autonomy to perform and achieve their day-to-day tasks (e.g., Amabile et al., 1996; Tushman & O'Reilly, 1997; Lemon & Sahota, 2004; Hartmann, 2006; Dombrowski et al., 2007; Tellis et al., 2009; Çakar & Ertürk, 2010). However, Jung et al.'s (2003) study using a sample of companies from Taiwan reported a negative link between empowerment and innovation. They explain this finding as coming from companies where cultural values are relatively high in power distance[17] (Hofstede et al., 1990), and employees tend to prefer having top managers both take more control of the work process and lead by example. However, Jung et al.'s (2003) explanation of less empowered employees, when provided with structure and direction can be innovative, still does not explain how they produce more innovation. While this is only a single study that reported a negative link, the weight of the evidence is more supportive of empowerment as a factor of innovation culture. This has been coded as *'Empowerment'*.

Rewards and recognition. Chandler et al.'s (2000) study linked employee perceptions of the reward systems positively to innovation-supportive cultures. Research on rewards and recognition discusses two types of rewards: *intrinsic rewards* (Tushman & O'Reilly, 1997; Dombrowski et al., 2007; Patterson et al., 2009) and *extrinsic rewards* (Tushman & O'Reilly, 1997; Patterson et al., 2009). *Intrinsic rewards* are inherently linked to intrinsic motivation[18] (Ahmed, 1998); the literature supports the idea that organizations need to reward individuals who venture out to explore and build new enterprises (Tellis et al., 2009), exhibit entrepreneurial spirit (Saleh & Wang, 1993) or complete a successful technological experimentation (Caccia-Bava et al., 2006). However, extrinsic rewards are linked to

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[17] *The extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally (Hofstede et al., 1990)*
[18] *Intrinsic motivation – the individual's desire to perform the task for its own sake; Extrinsic motivation – the individual's desire to perform the task because of the rewards he/she receives (Benabou & Tirole, 2003)*

extrinsic motivation. Malaviya and Wadhwa (2005) showed a link between pay and benefits (extrinsic rewards) and perceptions of innovation performance. While more focus is accorded to intrinsic rewards, extrinsic rewards cannot be ignored and hence some form of balance is in order (Martins and Terblanche, 2003); however, there is no empirical evidence noted for this view. This aspect has been coded as *'Rewards and Recognition'*.

Slack resources. The literature suggests two dimensions of this: the actual impact of inadequate resources and the perceptual impact. Touching on the former, Amabile et al. (1996), Chandler et al. (2000), Rasulzada and Dackert (2009) reported that lack of adequate resource allocation can lead to work pressure; Jamrog et al. (2006) found that a lack of resources is the biggest barrier to innovation. Kenny and Reedy's (2006) study has shown a positive link between the R&D investment (making adequate resources available) and the number of new products and services launched. Dobni (2008), Eckermann et al. (2003) and Hartmann (2006) also reported a positive link between balanced workload (adequate human resources) and innovation. Gudmundson et al.'s (2003) study (in the context of a family-owned business) and McAdam et al.'s (2010) study both linked allocation of adequate resources to innovation performance. Touching on the latter (perceptual impact of inadequate resources), Ruiz-Moreno et al. (2008), Rasulzada and Dackert (2009), reported a positive link between perceptions of the support necessary to implement innovations and innovative behaviours. This factor has been coded as *'Slack resources'*.

Leadership support and commitment. This factor is discussed at both organizational and supervisory levels of leadership in an organization. At an organizational level, studies have found that leadership provides legitimacy and access to resources (Jassawalla & Sashittal, 2002), management commitment, encouragement and involvement (Mohamed, 1995; Mohamed, 2002; Patterson et al., 2009), infuses new vision and values (Jassawalla & Sashittal, 2002), supports entrepreneurial activity (Saleh & Wang, 1993) and new ways of working (Jung et al., 2003; Wang & Ahmed, 2004), and provides the space for individuals to be creative, question assumptions and reframe problems (Jung et al., 2003). At a supervisory level, management support is demonstrated by way of appreciation of ideas,

immediate feedback from the supervisor (Malaviya & Wadhwa, 2005; Hartmann, 2006) active implementation support in diffusion of innovation (Panuwatwanich et al., 2008), and building of better relationships with employees (Malaviya & Wadhwa, 2005). Jamrog et al. (2006) found that lack of leadership and management support is one of the biggest inhibitors of innovation. While there is much support in the literature for this factor, Jaskyte's (2004) study provides a warning (based on findings of their study) that more directive leaders (a type of leadership and not necessarily leadership itself) have a negative impact on innovation. Overall, the empirical research supports the view that when management is perceived as supportive, there has been an increase in the number of new products (Kenny & Reedy, 2006) and increased positive perception of an innovative environment (Chandler et al., 2000; Hartmann, 2006). This factor has been coded as *'Leadership support and commitment'*.

Task orientation. Hartmann's (2006) and Caccia-Bava et al.'s (2006) studies support the view that providing clarity of goals, through setting of goals, could influence intrinsic motivation and strongly influence individual innovation-related performance by directing efforts towards those goals. Khazanchi et al. (2007) provide empirical evidence that explicit goal setting, although it is a measure to control, moderates flexibility/freedom and output of innovation/productivity. This aspect has been coded as *'Task Orientation'*. However, although Hartmann's (2006) view throws some light on how goals direct action, in both these latter studies it is not very clear how goal-setting has led to a productivity increase and how that in turn relates to innovation.

Participative Safety. A related aspect, but slightly different, is a safe environment characterized by (a) mutual trust and respect for each other's ideas (Dombrowski et al., 2007; Dobni, 2008) so they can have a healthy challenge (Zdunczyk & Blenkinsopp, 2007); (b) high levels of employee participation in general (Eckermann et al., 2003; Dobni, 2008; Patterson et al., 2009; McAdam et al., 2010) and also in critical decision making (Amabile et al., 1996; Dobni, 2008; Çakar & Ertürk, 2010); (c) no fear of job loss/security of employment (Mohamed, 1995; Lemon and Sahota, 2004; Valencia et al., 2011) . These characteristics have been extracted from studies that demonstrated empirical links between

the characteristics described and higher levels of innovation. Such a safe environment as described above has been coded as *'Participative Safety'*[19].

Networking and boundary spanning. While *'collaboration'* (Section 3.3.3) within the organizational boundaries is important, there is also a need for collaboration transcending organizational boundaries. Chesbrough (2003) discusses this as 'open innovation' and has found links to innovation. It is interesting to find this aspect occurring in the innovation culture literature because it creates an environment where organizations breed, sustain and live the idea of going out of their current comfort zone to look for innovation. This refers to (a) externally communicating or having high levels of information exchange with clients and other firms (Kivimäki et al., 2000; Zdunczyk & Blenkinsopp, 2007; McLaughlin et al., 2008) and interacting with others in the value chain (Mohamed, 1995; Dobni, 2008) leading to the production of a large number of patents (Kivimäki et al., 2000); (b) actively reaching out to other sources such as universities, government agencies etc. for ideas (Jamrog et al., 2006; Kenny & Reedy, 2006; Dombrowski et al., 2007), exploring both breadth and depth of sources for new ideas, which is curvilinearly (taking an inverted U-shaped curve) related to innovative performance (Laursen & Salter, 2005); (c) building the necessary organizational structures that can support boundary spanning with external organizations (Dombrowski et al., 2007). These characteristics have been collectively coded as *'Networking & boundary spanning'*.

Open Communication. The following are the ways in which open communication is critical for innovation: open communication (a) leads to a good relationship between supervisors and employees (Amabile et al., 1996; Lemon & Sahota, 2004); (b) creates an environment that is open and honest (Eckermann et al., 2003; Malaviya & Wadhwa, 2005; Caccia-Bava et al., 2006; Dobni, 2008) including enabling discussions on areas of performance (Malaviya & Wadhwa, 2005); (c) enables democratic and lateral communication within the organization (Mohamed, 1995; Dombrowski et al., 2007); and (d)

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[19] *This term has been borrowed from Anderson and West's (1998) study, but has been redefined for suitable use in this thesis (see Appendix 3-1)*

creates channels for sharing information openly (Tushman & O'Reilly, 1997) including exchange of ideas and lessons learnt (Amabile et al., 1996; Jamrog et al., 2006; McAdam et al., 2010) and problem related information (Hartmann, 2006). An environment supportive of open communication as described above has been coded as *'Open Communication'*.

Flexible organization structure. This refers to having a less hierarchical and flatter (Caccia-Bava et al. 2006; Patterson et al., 2009), flexible (Zdunczyk & Blenkinsopp, 2007), and innovation-supportive organizational structure (Jamrog et al., 2006), which can support values such as flexibility, freedom/empowerment, cooperative team work and collaboration (Martins & Terblanche, 2003; Zdunczyk & Blenkinsopp, 2007). This also means that there should be less formalized human resource practices such as rigidity and control that can stifle innovation (Chandler et al., 2000; Valencia et al., 2011; 2010). However, Valencia et al.'s (2011) study indicated that sometimes formalization is necessary in cases where formalized learning for innovation needs to take place. Saleh and Wang's (1993) study, on the other hand, showed no impact of flexible structures on innovation and they suggest that this could be because of the lack of drawing a distinction between organic (with no role specifications and blurred hierarchy) and flexible structures (with proper role specifications and clear hierarchy but flexible to make changes) in their survey. This, however, does not indicate any strong evidence to the contrary. This factor been coded as *'Flexible organizational structure'*.

Learning and development. With respect to learning, two key themes emerged: one related to individual learning and the other to organizational learning[20]. Studies found links between learning and innovation: individuals learn (a) through formally training themselves/sharing information (Eckermann et al., 2003; Gudmundson et al., 2003; Dombrowski et al., 2007), through knowledge, experience and exploration (Dobni, 2008;

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[20] *On organizational learning, Murray and Blackman (2006) and Bessant (2003) discussed the importance of learning and managing knowledge in an organization, but provided no empirical evidence. Therefore, this facet of learning has not been considered as a part of this factor; it is likely it would take longitudinal studies to actually evaluate the impacts organizational learning has on innovation from a cultural orientation perspective. Therefore, organizational learning has not been discussed beyond this point.*

McLaughlin et al., 2008); (b) through formal training of personnel (Gudmundson et al., 2003; Kenny & Reedy, 2006), when tools and techniques are made available to them (Lemon & Sahota, 2004), and in actually coaching people (Dobni, 2008); (c) through a learning orientation and creativity (Zdunczyk & Blenkinsopp, 2007); and (d) when organizations generally espouse the value of learning (Caccia-Bava et al., 2006). However, it is not very clear how learning and development (formal/informal) initiatives create a culture of innovation. This factor has been coded as *'Learning and development'*.

Risk-taking. A number of researchers have provided empirical evidence to demonstrate the link between innovation and (a) the behaviour of valuing risk-taking (or tolerance for risks) (Saleh & Wang, 1993; Tushman & O'Reilly, 1997; Eckermann et al., 2003; Jaskyte & Dressler, 2005; Caccia-Bava et al., 2006; McLaughlin et al., 2008; Tellis et al., 2009); (b) visible willingness to take risks (Valencia et al., 2011; 2010), experiment (Jaskyte & Dressler, 2005; Khazanchi et al., 2007), including cannibalization of an organization's own assets, i.e., *"an attitude that puts up for review and sacrifices current profit-generating assets, so the firm can get ahead with the next generation of innovations"* (Tellis et al. 2009: p. 8); and (c) learning from failures/mistakes (Saleh & Wang, 1993; Eckermann et al., 2003; Jamrog et al., 2006; Zdunczyk & Blenkinsopp, 2007). While the above studies highlighted its importance, Jamrog et al.'s (2006) ABI/HR practitioner survey ranked risk-taking 11th (in 2006) and 12th in what its importance would be in 10 years' time (i.e., in 2016). This finding was further reviewed in conjunction with a widely upheld practitioner research in this field by Booz & Co. (Jaruzelski et al., 2011); risk-taking was noted as the least important factor of innovation culture. Jaruzelski et al. (2011) suggest that more research work needs to be undertaken to question companies' approach to innovation and how risk-taking is relevant to innovation in various contexts. This has been coded as *'Risk-taking'*.

Innovation vision, mission and strategy. Dombrowski et al.'s (2007: p. 193) research found that 'vision and mission statements' is the primary and most important factor of an innovation culture as it focuses *"the energy of the organization" on innovation goals.* There

is also empirical research that linked a well-articulated, coherent set of innovation goals/ vision/objectives and innovation (Mohamed, 1995; Kenny & Reedy, 2006; Dobni, 2008; Patterson et al., 2009). Eckermann et al.'s (2003) study showed that focus and clarity of direction, fostered through a clear and shared purpose of values and strategies, are linked to innovative companies. Other scholars have agreed that innovation vision needs to be shared (e.g., Caccia-Bava et al., 2006; McAdam et al., 2010). Zdunczyk and Blenkinsopp (2007) linked vision and mission/purposefulness of companies, in terms of developing new products/services to solve customers' problems, and innovative companies. Although this factor does not figure in the top 14 factors from the findings of Jamrog et al.'s (2006) ABI/HR survey, the survey does indicate that no formal strategy for innovation together with a lack of clear goals/priorities is one of the top inhibitors of innovation. This has been coded as *'Innovation vision, mission and strategy'*.

Technology tools to support innovation. Mohamed's (1995) study, which was undertaken across four industries (pharmaceuticals, oil and gas, basic metals, and food and beverages), identified that technology that is proven, tested, and user-friendly is a key factor for the implementation of innovation, although the level of its importance could really vary from industry to industry[21]. Dombrowski et al.'s (2007) study identified that ICT (Information Communication Technology) can facilitate and support collaboration within and across organizational boundaries. While this factor has also been discussed in theoretical papers as important for innovation (e.g., Hauser, 1998; Bessant, 2003; Martins and Terblanche, 2003), the empirical evidence suggesting its importance is scant (see Appendix 3-3). Also, it is not clear from the empirical papers how technology support creates a culture of innovation and supports innovation outcomes. Notwithstanding the limitations, this factor has been coded as *'Technology tools to support innovation'* as per the rules of shortlisting factors through the SLR.

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[21] *One can expect the "technology used in food processing to be less complex than the one used in oil and gas refining" (Mohamed, 1995: p. 381)*

All of the factors discussed until this point, except for networking and boundary spanning, have also been noted in the literature review undertaken by Martins and Terblanche (2003). McLean (2005) later carried out an independent review of the literature and identified similar factors as noted by Martins and Terblanche (2003) except for 'innovation vision, mission and strategy' as a factor of innovation culture. Additionally though, McLean (2005) noted the importance of employee diversity. Patterson et al. (2009) also highlighted diversity (of backgrounds, ethnicity and even interests) as one of the top catalysts for innovation. Ernst & Young's (2010) practitioner's survey highlighted diversity in all forms (cultural background, generation, education, skills, personality, and life experiences) as the most important factor for innovation. Focusing on specific types of diversity, Østergaard et al. (2010) found a positive link between gender diversity, education diversity and innovation. However, they found a negative link between age diversity and innovation, and no link between ethnic diversity and innovation. But little explanation was offered by them with regard to their observations. Although there could be specific types of diversity that might contribute more to innovation than others, studies in general as discussed above have highlighted diversity's importance for a culture of innovation. However, specifically how diversity is relevant to an innovative culture is not discussed much in innovation culture literature. This factor has been coded as *'Diversity'*.

Company's focus on innovation portfolios. Jamrog et al.'s (2006) AMA/HRI survey identified that a balanced portfolio of incremental and radical innovations is important for innovation culture. A similar kind of focus is advocated by Tellis et al. (2009) but in terms of balancing the portfolio of projects where projects based on current technology focus are balanced against emerging new generations of technologies in the future. Thus, a balanced portfolio of work would give employees the necessary direction and a framework to work within and that would generate more focus and produce more innovations. This factor has been coded as *'Company's focus on innovation portfolio'*. It is evident that this has not been mentioned by other researchers, but since two empirical papers have highlighted this factor, it has been included in the final list of factors.

Safe Spaces. Dombrowski et al. (2007) found similar factors to those mentioned above in their study of factors of innovation culture. Their review added the importance of skunk-works or focused R&D groups and called them *'Safe Spaces'* referring to well-funded, long-standing or dedicated teams with a specific innovation agenda to deliver innovation without being distracted by business-as-usual activities. Lemon and Sahota (2004) identified the importance of skunk-works within one of their archetypes of innovation culture. They noted that under a fuzzy type of culture (i.e., at an initial stage on the path to becoming an innovative organization) safe spaces are required. Although Dombrowski et al. (2007) have identified this as one of their top factors of innovation culture, empirical evidence suggesting its significance as a key factor is scarce. Because this has been supported by two empirical papers (as per the SLR in Appendix 1-1), it has been coded into the final list as *'Safe Spaces'*.

Job rotation. Also, another factor identified by Dombrowski et al. (2007) was job rotation. It specifically refers to any functional, geographical, cross-country job rotation and even job swapping. Dombrowski et al. (2007: p. 195) argue that job rotation is important as a means of encouraging a *"global mindset"* to *"gain knowledge through intimacy with the business."* Also, this was highlighted as important through the discussion of case studies by Tushman and O'Reilly (1997); there is, however, no direct empirical evidence as to how job rotation can impact on innovation outcomes, much less how it specifically contributes to innovation culture. However, job rotation was highlighted in two empirical studies, and therefore it has been included in the final list and coded as *'Job rotation'*.

Client focus. Dobni's (2008) study identified customer/market orientation as important in addition to all of the above mentioned factors. This refers to companies having a strong association with the customer or the client to efficiently and effectively work towards enhancing customer experience (Jamrog et al., 2006) and to co-create value with customers (Dobni, 2008). Jamrog et al.'s (2006) AMA/HRI survey noted that client orientation or client focus is a top factor of innovation culture. Also, the findings from the survey by Booz & Co. (Jaruzelski et al., 2011) confirmed that client focus is one of the key factors of an innovative culture. Since there are two empirical studies that captured client orientation, this has been

included in the final list of factors and coded as *'Client Focus'*. However, this is not very common in the innovation culture literature as only two academic papers discussed its importance, as mentioned above.

Innovation process. Eckermann et al.'s (2003) study identified the importance of a formal process for creating and screening ideas based on the value they generate in innovative companies. The literature provides empirical evidence of the link between (a) a supportive innovation process (which includes critical measurement evaluation of innovation value) and innovation (Gudmundson et al. 2003), (b) ideas flowing smoothly to commercialization and supporting the successful implementation of innovations (Dobni, 2008), (c) measuring and tracking the progress of innovation initiatives and innovation (Jamrog et al., 2006), and (d) measurement of business value, business case-based decisions (again part of an innovation process) to invest in opportunities to innovate and innovative companies (Mohamed, 1995). All of the above aspects of an innovation process together have been coded as *'Innovation Process'*, on the basis that a granular level of distinction can be drawn, if required, during empirical investigation.

Quicker decision making. Tushman and O'Reilly (1997) discussed the importance of quicker decision making as they found it to be an important factor across a number of case studies they undertook. This was supported by a theoretical paper by Claver et al. (1998) who argued that quicker decision making enhances innovation outcomes but caution needs to be exercised in making decisions quicker in cases of high risk. Since this has been mentioned by two papers (one empirical and one theoretical), this has also been included in the final list and coded as *'Quicker decision making'*.

Scanning and tracking market. This refers to managers seeking trends and events in their environment which might impact on their organization, either now or in the future. Hoffman (1999) in his study across corporate cultures in different nations (Belgium, France, Switzerland, Germany and Nordic nations) found a link between environmental scanning or formal strategic planning activities, i.e., formal procedures used to forecast, plan, or control

firm strategy, and innovation (specifically, changes within the organization in regard to new position or departments). This factor of scanning the market was supported by a theoretical paper by Murray and Blackman (2006) who suggested that in the wider knowledge accumulation and organizational learning context, exploration outside the organization for information is important for managers to innovate. Since there are two papers (one theoretical and one empirical), scanning the market as a factor has been included in the final list and coded as *'Scanning and tracking market'*. However, it must be noted that there is limited empirical evidence for this factor.

Stories and myths. A more subtle form of communication is by way of stories and myths. Jassawalla and Sashittal's (2002) empirical study found the importance of the use of corporate stories and how they reinforce and exert a powerful influence on shaping values, beliefs, and desirable behaviours for innovation among employees. Higgins and McAllaster (2002) in their theoretical paper highlighted the success story of PostIt Notes at 3M and how that story reinforces values such as perseverance, openness to ideas, advocacy, rewarding success etc. Myths are a variant of stories – stories that may or may not be true, but are part of the culture and play a role, like the stories, in influencing and shaping the values and beliefs of employees (Ferris et al., 1989; Westbrook, 1993). Because 'Stories and myths' has been highlighted as important by two papers (one empirical and one theoretical), this factor has been coded as *'Stories and Myths'*. However, it must be noted that there is limited empirical evidence for this factor.

Physical symbols. Jassawalla and Sashittal (2002) found physical symbols, such as the layout and design of the work environment, displayed documentation, laminated mission statements etc., in innovative companies. They argue that physical symbols indicate free choice, equality, and entrepreneurial energy. Higgins and McAllaster (2002: p. 81) highlighted the importance of physical surroundings, such as cubicles, as opposed to fixed walls, and so the decision *"to cubicle or not to cubicle"* becomes an important one as cubicles indicate a more open and communicative culture. Although Malaviya and Wadhwa (2005) also highlighted the importance of physical symbols (e.g., layout in the kitchen areas), they

offered no empirical evidence to support the case of physical symbols. Because this aspect of physical symbols has been supported by one empirical and one theoretical paper (the first two papers as discussed above), it has been included in the final list and coded as *'Physical symbols',* but there is limited empirical evidence for this factor.

Please refer to Appendix 3-5 for details (and the rationale for exclusion) of other, less important, factors of innovation culture that were excluded from the final list of 27 factors of innovation culture.

Summary

The SLR highlighted a number of factors of innovation culture at an organizational level. While some factors such as *empowerment, rewards and recognition, leadership support and commitment, open communication, participative safety, risk-taking and experimentation* had significant empirical support, other factors such as *learning and development*, *networking and boundary spanning* have comparatively much less support and yet others such as *stories and myths, physical symbols, safe spaces, technology tools for innovation* have even less support in the literature. Also, it was found that only a few detailed studies have been undertaken on certain factors such as diversity (e.g., Østergaard et al., 2010), and communication (e.g., Kivimäki et al., 2000) etc., and as the majority of the studies that were undertaken were quantitative in nature, there was very little understanding gathered from the studies as to how the factors contributed to an innovative culture impacting on innovation outcomes (new products/services or value generated etc.). Also, there were some counter-intuitive results noted. For example, Jamrog et al. (2006) noted that *Client focus* is the most important factor, but the evidence from the literature does not indicate that this is the case. The results are quite the opposite in the case of risk-taking and experimentation; it has a significant amount of support in the literature, but was noted in practitioner surveys as less important. Overall, the literature shows conflicting evidence of the importance of the factors of innovation culture and that indicates that there is a lack of clarity in the understanding of the concept or construct of innovation culture and what factors definitively constitute it.

The next section, although acknowledging that some of the studies mentioned above would have already been included in the final list of factors, tries to present how innovation culture has been conceptualized broadly in studies that have 'holistically' looked at innovation culture (and not those that empirically tested one or more factors).

3.3.5   Measurement of Innovation Culture

The SLR asked a question (see Chapter 1, Section 1.3[22]) that relates to the measurement instruments used in measuring innovation culture in order to review and understand in more detail how the factors of innovation culture were identified and what level of coverage they have had as part of the instruments used to measure innovation culture. As discussed earlier, the literature has two broad types of instruments used in studies[23] that relate to innovation culture: 1) organizational culture models used in innovation culture studies, and 2) innovation culture models with specific and exclusive focus on innovation.

3.3.5.1 Organization Culture Measurement Models used in Innovation Culture Studies

This section discusses three generic organizational culture measurement models that have been widely used in innovation culture studies as noted in the consideration set.

The Organizational Culture Profile by O'Reilly et al. (1991)

OCP was developed by O'Reilly et al. (1991). The purpose of their questionnaire was to assess organizational and personal culture fit. Their questionnaire includes a set of 54 value statements forming seven value dimensions: Attention to Detail, Innovation, Outcome Orientation, Aggressiveness, Team Orientation, Stability, and People Orientation (O'Reilly

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[22] *Systematic Review Question 2 (SRQ2): What tools or instruments are available to measure innovation culture?*
[23] *This section deals with only those papers that used a full construct of innovation culture, not studies that focused on influences of specific factors of innovation culture on innovation (as they are already discussed in 3.3.2 to 3.3.4).*

et al., 1991; Chatman & Jehn, 1994; Sheridan, 1992 cited in Jaskyte, 2004). With respect to the 'Innovation' dimension, the following have been included in the questionnaire: being innovative, quick to take advantage of opportunities, risk taking, and taking individual responsibility. In addition, learning, collaboration, working in teams, competitive environment, managing conflicts, creativity, etc., although included as part of other dimensions, are relevant for innovation (Section 3.3.4). Although the OCP has been shown to have reasonable reliability and convergent validity (Jaskyte & Dressler, 2005), not all values used in this questionnaire are innovation-centric. For example, the evidence of results from Jaskyte's (2004) study (using OCP) suggests that organizational values such as stability, security, cohesiveness, etc., which are included in the questionnaire, when highly shared could be detrimental to innovation, and these could be used to differentiate between the more innovative and the less innovative companies. Also, it is to be noted that there are factors specific to innovation (Sections 3.3.2 to 3.3.4), such as empowerment, open communication, participative safety, networking, creative personality, etc. not included in the questionnaire.

Organization Culture Types by Wallach (1983): Supportive, innovative and bureaucratic

Wallach's (1983) measurement questionnaire focused more on innovation and the support for innovation. Unlike OCP, which has one innovation dimension (out of the seven), this instrument has two dimensions (out of the three) that are innovation-centric. The three types of culture or dimensions are: supportive, innovative and bureaucratic. Supportive cultures focus on open, harmonious and a family-like style with high levels of support, equity, encouragement, trust, member involvement, team spirit, collaboration, freedom, and personal relationships. Innovative cultures are more complex, results-oriented with tasks of creativity and risks. The bureaucratic cultures feature clearly specified responsibilities and tasks in a standardized way. This instrument was used by Chang and Lee (2008) and Tan et al. (2008), authors from the consideration set (SLR). They used it to understand the impacts of culture (bureaucratic, supportive, innovative) on innovation performance (product, process and administrative innovation). As is evident from the description of the dimensions, both

supportive and innovative types of cultures are nearest to the description of innovation culture (in line with Sections 3.3.2 to 3.3.4). More specifically, Tan et al.'s (2008) study pointed out that a supportive culture profile enables process innovation and an innovative culture profile enables product and administrative innovation. However, it is far from clear why a certain combination of factors (within the three profiles) yields specific types of results (i.e., impact on different types of innovation). This is not necessarily a problem with Tan et al.'s (2008) study, but simply because of the inability of the culture profile to differentiate the impact on the different types of innovation at a more granular level. Also it is worth noting that Wallach's (1983) model, like OCP, does not cover important factors such as slack resources, networking, participative safety, client focus, etc. (Sections 3.3.2 to 3.3.4). Also, there is no evidence in the published literature of the reliability and validity of this instrument.

Organizational Culture Assessment Instrument by Cameron & Quinn (1999)

The OCAI was developed by Cameron and Quinn (1999). The basis of their model is different from that of the two described above. The authors used a competing values framework[24] to define four cultures: Adhocracy, Clan, Market and Hierarchy[25]. Adhocracy culture emphasizes flexibility and change externally oriented with the focus on creativity, entrepreneurship and risk taking. Clan culture emphasizes flexibility but its focus is on teamwork, employee involvement and corporate commitment to employees. Market culture is externally focused, but it is control oriented, characterized by productivity and competitiveness. Hierarchy culture is also control oriented but the focus is on the internal organization, efficiency and rule-orientation. Valencia et al. (2010, 2011), and McLaughlin et al. (2008) used OCAI for their innovation culture assessment. Their conclusions have been similar in that the results for an innovation culture favoured the Adhocracy culture. However, it would become difficult to differentiate, at a finer or granular level of detail, the specific

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[24] *Competing values refers to flexibility and discretion versus stability and control (y-axis), and external focus versus internal focus and integration (x-axis)*

[25] *The competing values are used in conjunction with six characteristics of an organization – dominant characteristics, organizational leadership, management of employees, organizational glue, strategic emphases and criteria of success – they define the four types of organizational culture.*

type of profile when some characteristics, such as being externally focused and competitive (Market), which are innovation-supportive, are mixed with control (again Market), which is not innovation supportive; also, one may be able to say which organizations are more innovative or less innovative, but would not be able to differentiate on specific factors as they may not adequately capture the essence of the factor in its entirety as it relates specifically to innovation. Touching on the differentiation at a finer level of detail, this instrument too does not include specifics around client focus, availability of resources, or participative safety etc., which are more innovation supportive. However, research has shown that the OCAI is considered reliable and valid with respect to the measurement of organizational culture (Quinn and Spreitzer, 1991 cited in McLaughlin et al., 2008).

Section Summary

While each of the above-mentioned instruments is useful in its own right, measurement of innovation culture through generic culture profiles can be less effective with respect to impacts of specific factors on specific types of innovation, (a) in cases where a single profile has factors that are both supportive and not supportive of innovation, and (b) in cases where a more granular level of the factors is not available to test impacts (Law et al., 1998). These measurement instruments can provide a high level view of whether culture (and specific factors if they are included) has an impact on innovation or not, but specifically they have limitations with respect to understanding why certain factors may be more relevant to innovation than others.

3.3.5.2 Models Specifically Targeted at Measuring Innovation Culture

This section discusses the three measurement models noted in the consideration set that looked at innovation culture holistically.

Eckermann et al.'s (2003) five capability dimensions

Eckermann et al. (2003) published their *Five Capability Dimensions* model and empirically tested it by way of a diagnostic tool. They conceptualized innovation culture as five capability dimensions: *Visionary, Knowledge, Social, Entrepreneurial* and *Synergistic*. *Visionary Capability* refers to a clear and shared purpose of values, strategies, processes and measures that build competencies for innovation. *Knowledge Capability* refers to the awareness of various sources of knowledge from external to the organization, such as customer needs, and new technologies, to linking with knowledge within organizations. *Social Capability* refers to conditions, such as stimulation, opportunities, slack-time, training, and recognition, that contribute to innovative behaviours. *Entrepreneurial Capability* refers to such values as freedom to take risks, learning from failures, and sharing of ideas. *Synergistic Capability* refers to the practice of having a high degree of responsibility and participation, with collaboration as the key value. A point worth noting is that it is not clear at all how the authors arrived at the factors of innovation culture. Also, the factors themselves are not defined fully, leaving the reader to guess what their meanings are. Their study, however, reported empirically, validating the key capability dimensions that are important for innovation. The authors developed an innovation diagnostic, which was administered with leaders in different organizations.

Eckermann et al.'s (2003) model, however, does not cover client focus, diversity, flexible organization structure, physical symbols, talent and creativity, workgroup support, etc. Their model seems to concentrate more on patterns of behaviour and values and norms for innovation. One, two or a few individuals representing each organization participated in their survey and hence a light touch approach to measurement has been noted. No systematic tool

development process and psychometric properties of this questionnaire were published and, consequently, there is no evidence of its reliability or validity. No study other than Eckermann et al.'s (2003) used this model or validated it as far as the researcher is aware.

Kenny and Reedy's (2006) five factor model

Kenny and Reedy's (2006) *Five Factor Model* included a 20-item questionnaire divided into five categories of factors: *Basic Conditions, Open Communication, Entrepreneur, Organizational Empowerment* and *Procedures*. *Basic Conditions* included resources, funding, technical competency, strategic direction with respect to innovation, non-constraining environment. *Open Communication* included aspects relating to staff with diverse interests and brainstorming. *Entrepreneur* included tolerance to failures, learning, risk taking, and freedom to pursue one's own ideas. *Organizational Empowerment* included challenging environment, tolerance to non-conformity, tapping into diverse information sources for innovation. *Procedures* included patent programmes, suggestion programmes, and adequate manpower. The factors included within these five categories are broadly what Eckermann et al. (2003) had in their model, except for vision, collaboration and rewards. However, Kenny and Reedy's (2006) model focused on patent programmes and greater focus was accorded to networking and boundary spanning compared to that of Eckermann et al. (2003). In terms of the actual results obtained, patent programmes did not show any significant correlation with innovation performance (new products and services). It was not very clear from the literature review how they arrived at the full list of factors, other than a few references from the literature. They used a survey questionnaire but no psychometric properties have been published. In addition, some of the factors such as workgroup support, client focus, physical symbols, task orientation, etc. have not been included. No study other than Kenny and Reedy's (2006) own study used this model or validated it as far as the researcher is aware.

Dobni's (2008) multi-dimensional innovation culture measurement model

Dobni (2008) included all of the factors mentioned above in his model but categorized them into the following four focus areas (see Figure 3.3): *Innovation Intention, Innovation Infrastructure, Innovation Influence* and *Innovation Implementation. Innovation Intention* refers to the degree to which organizations have a formal innovation strategy, process and involvement of employees in innovation initiatives. *Innovation Infrastructure* includes learning through training and educational qualifications, creativity and empowerment. *Innovation Influence* includes 'market orientation' (market sensing/awareness) and value creation behaviours of employees. *Innovation implementation* refers to the ability of the organization to co-align such processes as provision of funding, innovation groups, rewards and recognition programmes to the changes in the competitive landscape.
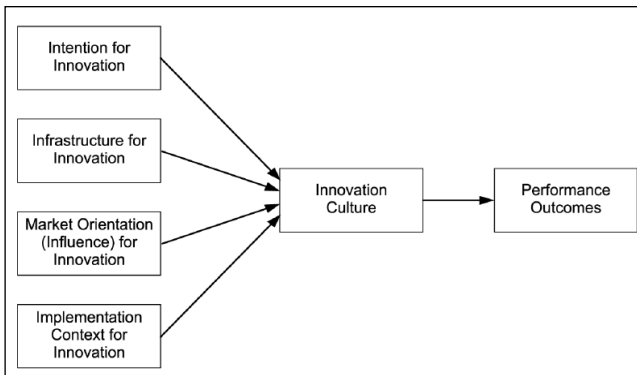
Figure 3.3: Innovation Culture Model (Dobni, 2008)

Dobni (2008) differentiated his model from other models by adding market/customer and the value orientation and implementation context as focus areas. Dobni's (2008) research, however, did not clearly highlight how the factors have been identified (although it can be gathered that a number of his questions came from innovativeness and organizational innovation literature – see Dobni, 2008: pp. 539, 540). Instead, his focus was entirely on building a model or tool for the measurement of innovation culture and his model is the only known innovation culture measurement model that is developed systematically, covering the psychometric properties of the tool. While Dobni (2008) included client focus (also

highlighted by Jamrog et al., 2006), clearly some other factors, such as workgroup support, team composition, stories, physical symbols, etc., are not included in the measurement. Additionally, certain factors such as leadership, organizational structure, open communication, networking and boundary spanning etc. have not been accorded sufficient focus in the questionnaire. No study other than Dobni's (2008) own study used this model or validated it as far as the researcher is aware.

Section Summary

While the above-discussed measurement models are specifically geared towards measuring innovation culture, there are still areas that are under-represented at best, or not represented at all. This calls into question the relevance of those factors and also their importance in relation to those that are most generally used in innovation culture measurement. More general observation has been that the review of the literature has been less rigorous, and in some cases even quite vague. Also, except for one paper (i.e., Dobni, 2008), a general lack of attention to psychometric properties, reliability and validity of the questionnaire have been noted. The three studies themselves did not report why certain factors or dimensions had impacts on innovation performance (new products and services) other than suggesting that they have a positive impact or are relevant for innovation culture.

The next section briefly describes how concepts/constructs that are closely related to innovation culture are similar (and/or different) from it.

3.4 INNOVATION CULTURE, ITS CLOSE AFFILIATES

As part of understanding the construct of innovation culture, it is important to delineate the concept clearly from other closely related concepts (affiliates). This will help in understanding the focal construct (i.e., innovation culture) better (Adcock & Collier, 2001; MacKenzie et al., 2011). This section outlines three closely related constructs (3.4.1 to 3.4.3) and summarises how innovation culture is distinct.

3.4.1   CREATIVE CLIMATE FOR INNOVATION

Amabile et al. (1996) differentiate between creativity and innovation. They define creativity as the production of novel and creative ideas and innovation as the successful implementation of those ideas. They argue that the first is necessary but not a sufficient condition for innovation. A number of papers have been published in the area of creative climate for innovation – a climate that enables employees to be creative, to come up with creative ideas. The notable authors in this area are Amabile et al. (1996), Ekvall (1996), and Anderson and West (1998). As discussed in Chapter 2 (Section 2.4), organizational climate is seen as the perceptions of organizational practices and not the practices themselves. So, in the context of climate for innovation, it is also (as with the climate construct) the perceptions of innovative organizational practices that create the general mood, which gives rise to creative behaviour or creativity. The literature in the area of climate for innovation is fairly mature in the sense that there are specific dimensions that both Amabile et al. (1996) and Ekvall (1996) have studied (e.g., open communication, risk taking, trust and respect for individuals, fun at work). The measures used are set out to study the general mood or atmosphere that enables creativity in an organizational setting. But innovation culture (as with the culture construct) refers to having certain values, practices that actually give rise to or create a climate for innovation. In this sense, innovation culture and climate are different.

3.4.2   ORGANIZATIONAL INNOVATIVENESS

Organizational innovativeness indicates the firm's proclivity (Salavou, 2004; Sabir & Kalyar, 2013) or *"propensity or the likelihood"* (Wang & Ahmed, 2004: p. 303) to innovate. It is also described as the capability (Koc, 2007), the ability to introduce some new process, product, or idea in the organization (Hult et al., 2004), and reflects a firm's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes (Lumpkin & Dess, 1996). Wang and Ahmed (2004) identified five dimensions of organizational innovativeness: *product*

innovativeness (perceived newness/novelty/originality/uniqueness of products)*, process innovativeness* (introduction of new management methods/approaches/technology)*, market innovativeness* (market research, advertisement and promotions)*, behavioral innovativeness* (an individual's willingness to change, a group's adaptability to change and the management's willingness to change) and *strategic innovativeness* (matching internal capabilities with external opportunities to deliver new products/services). Wang and Ahmed (2004) suggest that behavioural innovativeness enables the building of a culture of innovation. In a sense, as explained here, a culture of innovation is a necessary condition for organizational innovativeness. Therefore, organizational values, such as 'willingness to change' or 'try or experiment with new things', are essentially values espoused by an innovative culture and therefore are important for organizational innovativeness. This clarification concerning the distinction between organizational innovation and innovation culture was important because some scholars tend to use the overlapping portions of constructs without highlighting the differences (e.g., Dobni, 2008 discussed organizational innovativeness as similar to innovation culture).

3.4.3   ORGANIZATIONAL INNOVATION

Organizational innovation invokes the idea of innovation as an outcome an organization produces through its innovation initiatives (e.g., Hoffman, 1999; Jaskyte & Dressler, 2005). It refers to innovations produced as a result of an innovative activity in an organization (Damanpour, 1991). It has been variously conceptualized by scholars[26] broadly into product, process, administrative, technical, structural and systems innovation (Damanpour, 1991; Mohamed, 2002; Tan et al., 2008). As discussed in Section 3.3.1, sometimes 'innovation performance', has also been seen as organizational innovation (e.g., Hoffmann, 1999; Tan et

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[26] *Product innovation – New products and services (Valencia et al., 2010); Process innovation – Process improvements that produce new products and services (Jaskyte, 2004); Technology innovation – Product production technology and equipment (Jaskyte, 2004; Judge et al. 1997); Administrative innovation – organizational processes relating to projecting, organizing, staffing, controlling and serving (Chang & Lee, 2008; Jaskyte, 2004); Systems innovation – control systems such as planning, budgeting, information systems and structural innovation – changes in the organization with regard to new positions or departments as well as formal or informal relationships among them (Hoffman, 1999).*

al., 2008). Therefore, organizational innovation as an outcome can simply mean 'innovation performance'. Damanpour's (1991) study (cited 1,299 times up to July 2016) with regard to determinants of organizational innovation showed that organizational culture is one of the key determinants of organizational innovation. In this sense, culture (in the form of factors of innovation culture) supports in generating organizational innovation. A number of studies on innovation culture published post 2000 (as discussed in Section 3.2.2) have studied factors of innovation culture impacting on organizational innovation (e.g., Tan et al., 2008 studied impacts of learning and development on innovation performance; Jaskyte, 2004 studied impacts of leadership on organizational innovation).

3.5 KEY INSIGHTS FROM INNOVATION CULTURE LITERATURE

First, it is clear from the literature review that although there seems to be some consensus on the use of certain factors of innovation culture, there is conflicting evidence concerning the importance of the factors, not only within the academic literature but also when it is compared to practitioner literature. While this indicates that there is conflicting evidence, it also provides a sense of hierarchy in the importance of the factors of innovation culture.

Second, while there are some factors that have been widely studied and have support in the literature, some have been scantily studied. This is clearly evident from their under-representation as captured by the SLR, in the review of the full innovation culture construct (Sections 3.3.4 and 3.3.5). This again indicates a clear sense of hierarchy in importance of the factors potentially due to their level of positive impacts on innovation and how they contribute to an innovative culture.

Third, there is a general lack of appreciation of how innovation culture could be different from other related constructs such as innovativeness, creative climate, organizational innovation, etc. There is not a single paper that explains the differences or positions innovation culture firmly against overlapping or related constructs. On the one hand, one can appreciate that this could be a result of limitations, given the level of research

within the field of enquiry on innovation culture. However, on the other hand, this could also be understood as a symptom of a deeper problem of not having a well-established or empirically supported construct of innovation culture. Therefore, more exploratory work is necessary so that the factors of culture and how they relate to innovation are better understood.

Fourth, factors of innovation culture have an impact on various outcomes that support innovation, starting from creativity then moving to group innovation, to innovation capacity, to implementation of innovation, to actual outcomes of innovation (new products/ services). Most of the studies, being quantitative in nature, were only able to empirically confirm the impact of culture on innovation outcomes. However, the reasons for such impacts of culture on innovation have often been explained unconvincingly (e.g., Saleh & Wang, 1993; Eckermann et al., 2003; Kenny & Reedy, 2006; Tan et al., 2008). Further, there is no consensus on the way the factors are conceptualized and this has led to the lack of clarity on outcomes as well (e.g., 'leadership support' and 'leadership sending appreciation emails', at a deeper level, can produce different types of impacts on the outcome of innovation). In this sense, there is a general lack of rigour in terms of the specific areas impacted on by the factors, how the factors relate to culture and, or more broadly, why they could potentially have an impact on innovation outcomes or focus areas (e.g., behaviours, support and direction employees need, training etc.).

In summary, it can be concluded that there is conflicting evidence of the importance accorded to the factors of innovation culture, which could be an indication that some factors are more important than others. This could potentially be because of the influence the factors have on innovation outcomes, but there is little clarity in this area of the literature on innovation culture. In fact, the researcher has not found any evidence in the literature of the discussion around (a) the importance of factors and (b) the reasons why the factors could potentially be important. The reasons for the importance of the factors of innovation culture could be a step towards understanding the relationship between culture and innovation outcomes.

3.6 CHAPTER SUMMARY

This chapter began with the definitions of innovation and innovation culture for this research study. It was identified that innovation culture is, usually in the literature, explained as a set of factors and it was concluded that this research work falls into the organizational paradigm of 'contingency management' and it treats culture as an instrument or tool that can influence behaviours necessary for innovation.

Next, it was discussed how culture more than just values, beliefs and underlying assumptions and that it includes aspects relating to strategy, structure and other matters that concern organizational life (contemporary view of culture), such as performance measurement, employee appraisals etc. The 27 factors of innovation culture that emerged as important from the SLR were discussed at three levels: individual, group and organizational. The review highlighted that there are some factors that have been extensively researched (e.g., risk-taking, leadership), other factors that are comparatively less researched (e.g., learning and development, networking and boundary scanning) and yet others that are being studied little (stories and myths, physical symbols). Further, the conceptualization of innovation culture in literature was reviewed and that reinforced that there are only a few factors that are extensively researched and others are less researched (or have less evidence). Both reviews (individual factors and whole conceptualization of innovation culture) indicated that there could be some factors that are more important than others and that the importance of those factors could be linked to the kind of impacts they would have on generating innovation as an outcome.

This chapter also reviewed three constructs (*creative climate for innovation, organizational innovativeness* and *organizational innovation*) that are closely associated with innovation culture. It was concluded that innovation culture refers to values, beliefs and practices relating to innovation, and creative climate for innovation is the general mood of the atmosphere to which the values, beliefs give rise. Also, it was concluded that innovation

culture is a key determinant of both organizational innovativeness and organizational culture and therefore different from them.

This chapter concluded that there could be a hierarchy of importance of factors, and that such an observation could potentially be because of the influence the factors of innovation culture have on innovation outcomes.

4.0 RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

The purpose of this chapter is to discuss the research design and methodology for this study. This includes derivation of research questions (RQs) based on conclusions from the systematic literature review (SLR), the research design considerations, the research methodology, which includes the data collection methods and the analytical techniques that the study has used.

Therefore, this chapter covers the following topics:

- Literature review conclusions and research questions (Section 4.2);
- Research design considerations (Section 4.3);
- Research Methodology – Data Collection and Analysis (Section 4.4); and
- The chapter summary (Section 4.5).

4.2 LITERATURE REVIEW CONCLUSIONS & RESEARCH QUESTIONS

This section discusses the key conclusions from the SLR (Chapter 3) and derives the RQs for this research study.

4.2.1   Key Conclusions from the Systematic Review of Literature (SLR)

The SLR on innovation culture, covering 74 papers (67 academic peer-reviewed papers and seven from grey literature) arrived at two key conclusions. The conclusions are drawn from the insights developed in Chapter 3 (Section 3.5).

First, the review identified and highlighted 27 factors for innovation culture, some of which had more specific empirical contributions than others. Moreover, even studies that looked at a full innovation culture construct/phenomenon (i.e., studies that used surveys/questionnaires to measure innovation culture) focused more on some factors and less on others. Additionally, such full lists of factors were found to be inconsistent across studies (e.g., Eckermann et al., 2003 used a different list from that used by Kenny & Reedy, 2006, both lists were developed from literature). Therefore, in terms of the evidence available, it emerged that it is conflicting in that the importance of the factors relevant for innovation culture is not clearly understood and neither is there a discussion on this in the academic literature reviewed. From a practical standpoint, this would raise an important question around the imperatives for companies in general, and more specifically for managers, as to what their focus areas could potentially be (i.e., the areas in which they would invest more effort) in order to maximize the return on their investment, should they wish to establish a culture of innovation. This led the researcher to draw the following first key conclusion:

Key conclusion 1: There is a long list of factors relevant to the context of innovation culture; however, there is conflicting evidence concerning their importance and criticality, thus leading to questioning their relevance to managers.

Second, based on the above discussion, logically, it follows that one of the strong reasons associated with why certain factors are studied more than others in the academic literature is because their influence is more in determining innovation outcomes[27] than other factors. Most of the literature reviewed focuses on links between culture (culture profile or, in some cases, specific factors of culture, as discussed in Chapter 3, Sections 3.2.2 and 3.3.5) and certain specific innovation outcomes investigated through quantitative studies. In all of

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[27] *As already discussed in Chapter 3, Section 3.3.1, 'Innovation outcomes' has been conceptualized differently in different studies: innovation performance (Prajogo & Ahmed, 2006), qualitative questions on organizational performance (e.g., Jaskyte & Dressler, 2005), innovation capacity (e.g., Koc, 2007), innovation capability (e.g., Çakar & Ertürk, 2010), absorptive capacity (e.g., Caccia-Bava et al., 2006), achieving management of innovation (e.g., Smith et al., 2008), perceived innovation in the organization (e.g., Rasulzada & Dackert, 2009), innovation implementation (e.g., McAdam et al., 2010), innovative behaviour (e.g., Scott & Bruce, 1994) and some even as perceptions of innovation (e.g., Ruiz-Moreno et al., 2008), which in turn have an impact on innovative behaviour (Chandler et al., 2000).*

such quantitative studies, linkages between innovation culture and innovation were explored and confirmed to a reasonable degree of satisfaction. However, the reasons for those links have not been explained nor has there been any particular academic interest in understanding them further. For example, Tan et al. (2008) found a link between innovation culture (culture profile) and product innovation. They argue that firms with a culture of focus on state-of-the-art technology can produce innovative products and so an innovative culture should have a focus on developing technology. Explanations such as these are not often really fully convincing.

Jassawalla and Sashittal (2002) highlight this as a clear gap in the current research. They contend that *"despite the awareness of the culture-innovation linkage, innovation-supportive cultures failed to proliferate in practice",* they call this the *"knowing-doing"* gap and suggest that this is partly because *"culture is often used as a catchall phrase to describe the subjective, amorphous side of organizations that managers implicitly know about"* (p. 42). They make a call for more *"voices of managers"* to be involved in real life situations to enhance the current understanding of culture-innovation linkage (p. 42). A similar view was echoed by Judge et al. (1997) in that they call for a more detailed understanding as to why the factors of culture are relevant for managers. Based on the insights from the literature review, and, specifically, following Jassawalla and Sashittal (2002) and Judge et al. (1997), the researcher was led to draw the second key conclusion:

Key conclusion 2: The literature does not provide much detail as to why the factors of culture are important for innovation. More needs to be understood in terms of culture-innovation linkage to help managers at a practical level, on a day-to-day basis to make choices around what factors can be more relevant and beneficial to them.

4.2.2   Research Questions

The lack of clarity in terms of which factors of innovation culture are important (Conclusion 1) can potentially lead managers to focus their efforts on factors that may not yield expected results from their innovation initiatives. Therefore, the following RQ was asked:

RQ1: What are the most important factors of innovation culture as perceived by managers?

Further, in order to empirically establish the reasons (Conclusion 2) to understand why the above-mentioned factors are important and what their relevance is to managers, the following second RQ was raised:

RQ2: Why are the factors (from RQ1) of culture considered to be important?

Both RQs cover the fundamentals of innovation culture that have not been investigated empirically to any great depth. With the aim of making a contribution, this research work perseveres to understand if there is indeed any hierarchy of importance of key factors; and if so, why the key factors are potentially relevant to managers. Therefore, the following are the two key assumptions underpinning this research:

- There are certain factors of innovation culture that are more important than others
- The reasons for the importance of certain factors over others is related to the impact they have on ultimately achieving innovation related outcomes

The researcher could have looked at the less researched factors to make a contribution, but chose to understand the phenomenon at a more fundamental level through RQs 1 and 2. This classifies this work as exploratory[28] research. After having established the

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[28] *Blaikie (2010: pp. 69, 70) classifies the research purpose into basic and applied research. Basic research refers to research undertaken to explore, describe, explain, understand and predict a certain phenomenon of interest. Applied research refers to research undertaken to change, evaluate and assess the impacts of a phenomenon. Basic research: To*

research focus in the form of the two RQs, the next section provides an overview of the research design considerations to answer the RQs: the philosophical orientation, design alternatives, unit of analysis and sampling. These have various implications for the overall research methodology (i.e., the specific methods of data collection and analysis), which will be discussed in Section 4.4.

4.3 RESEARCH DESIGN CONSIDERATIONS

This section discusses the research design for this study. Research design should be *"an integrated statement of and justification for the technical decisions involved in planning a research project"* (Blaikie, 2007: p. 15), ranging from general assumptions to specific methods of data collection and analysis (Bryman & Bell, 2007; Creswell, 2009). Thus, research design provides a structure for the empirical procedures to guide its implementation (Grunow, 1995; Bryman & Bell, 2007). Five fundamental elements or considerations constitute a research design: (a) RQs and purpose, (b) research strategy, (c) philosophical perspectives, (d) research methodology, and (e) research methods (i.e., data collection and analysis methods) (Partington, 2000; Blaikie, 2007; Creswell, 2009). Each should be aligned with the others to result in a successful study (Partington, 2000). The research design for this study is explained below in terms of the five elements: the first three (RQs and purpose, research strategy, and philosophical perspectives), along with details of unit of analysis and sampling are discussed in Section 4.3, and the remaining two (research methodology and methods) in Section 4.4.

4.3.1 Research Questions – Their Purpose and Strategy

Many authors have pointed out that the choice of the research design has to be based on the RQs, the research's main purpose and the broad strategy adopted (e.g., Robson, 2002;

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explore – is an attempt to develop an initial, rough description or possibly an understanding of a phenomenon; To describe – is to provide a detailed account of a measurement or characteristics of a phenomenon; To explain – is to establish the elements/mechanisms or factors responsible for producing the phenomenon; To understand – is to establish particular reasons for social action, the occurrence of a social event; To predict – is to use an established understanding of a phenomenon to postulate certain outcomes under certain conditions.

Easterby-Smith et al., 2008; 6 & Bellamy, 2012). Blaikie (2010: pp. 69, 70) classifies the research purpose into basic and applied research. As mentioned earlier, because RQ1 fundamentally challenges the current assumption in the literature concerning the importance of the factors of innovation culture through a fresh empirical investigation and RQ2 also asks a fundamental question as to why the important factors may be relevant, the nature of this research is exploratory. This higher purpose of the research is an important aspect as it drives the research strategy (Robson, 2002; Blaikie, 2007; Yin, 2012).

Blaikie (2010: p. 79) explains that *"research strategies differ in the types of research questions and purposes they can answer."* He refers to research strategy as a broad level approach to answering the RQs. To address the exploratory research purpose, RQ1 requires the study to collect data on 'what' factors of innovation culture are most important to managers and tries to understand the broad level themes that emerge, and are significant. RQ2 requires the study to collect data on 'why' the factors identified are important, to draw up a description of understanding of data (reasons) rather than an explanation (causes). The broad level approach to answering RQs 1 and 2 described above falls into the *Inductive Research Strategy*[29]. Blaikie (2010) explains that inductive research strategy involves collecting data in relation to the phenomenon (in this case data relating to the factors of innovation culture) and then drawing potential (limited though) generalizations from the data (in this case identifying key themes or categories or key factors and also why they are important) to develop theories or tentative theoretical assertions.

The next section discusses the philosophical orientation or perspectives that align to the inductive research strategy and underpin this research study.

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[29] *Three other research strategies – deductive, retroductive and abductive – can be found in Blaikie (2010: pp. 81-91). Deductive strategy is used to test a theory, retroductive is used to understand underlying mechanisms of a phenomenon, and abductive is used to understand the meanings and interpretation of the language used by actors in the social world being researched. Given the exploratory purpose of this research, none of these three was found to be suitable to answer RQs 1 and 2. Blaikie (2010) argues that inductive research strategy is most suitable for exploratory research.*

4.3.2 Philosophical Orientation

Research is generally based on two types of assumption: ontology and epistemology. Ontology deals with the nature of reality, how social phenomena exist and how they are related. Epistemology deals with the kinds of knowledge available and the means of knowing things (Blaikie, 2007; Easterby-Smith et al., 2008). This section talks about these two types of assumption in the context of this research study.

There are two extremes of ontological assumptions: positivism and interpretivism. Positivism focuses on observable facts and discounts anything that cannot be observed; it emphasizes that reality exists independently of what is experienced as 'external' to individuals (Blaikie, 2007; Easterby-Smith et al., 2008). Interpretivism on the other hand subscribes to the idea that reality is constructed by individuals perceiving that reality (Blaikie, 2007). It is *"socially constructed and consists of individuals' interpretation of their circumstances"* (Partington, 1997: p. 52).

Positivism and its applicability to this research are explored here first. Positivists in social sciences take the ontological view of reality as the researchers in natural sciences. In natural sciences reality is considered to be independent of the observer, and positivists look to derive absolute laws (Blaikie, 2007). Studies in organizational culture, as explained in Chapter 2 (Section 2.1), have used both *etic*[30] and *emic*[31] approaches. The researcher indicated his tendency towards using an *etic* approach (see Chapter 2, Section 2.1), i.e., to consider an organization's culture to be a lever that can be used to deliver innovation as an outcome. This is not only in line with the majority of the contemporary research in innovation culture (e.g., Eckermann et al., 2003; Jaskyte & Dressler, 2005; Dobni, 2008), but also embraces the side of positivism that believes reality is independent of the observer (culture

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[30] *Etic approach assumes that culture is something that an organization has and therefore can be used as a lever to implement innovation and that there are aspects that transcend cultural boundaries.*
[31] *Emic approach assumes that an organization itself is culture and can be understood as a collective cognitive experience of members and therefore their lived experience can indicate what might and might not work.*

is an entity that exists independent of participants' knowledge of it). However, it differs from the view (of positivism) that knowledge is derived only through observation, but instead embraces the idea that by way of understanding and deriving meaning from what the participants of the research would state, objective factors of innovation culture can be derived from an understanding of and compared with an existing body of theoretical and empirical knowledge (the literature). According to Guba and Lincoln (1998) human behaviour cannot be understood without reference to the meanings and purposes attached by human actors to their initiatives. From a positivist perspective, this means that anything that is not observable, such as deeper structures, mechanisms and experiences of people, is left out (Hume, 1975). Therefore, in its purest form positivism is not applicable to this research study. Interpretivism and its applicability are explored next.

For interpretivists, ontological reality is an outcome of social interactions and there is nothing called a reality that objectively exists independently of an observer (culture is not independent of observations of the participants, instead it is a collective cognitive understanding of participants based on meanings and the experiences of participants from their day-to-day interactions). Consequently, for interpretivists, there is no single but only multiple realities constructed within the same context. Interpretivists therefore adopt more flexible research structures (Carson et al., 2001), which capture meanings from human interaction (Black, 2006). With regard to RQ1, both the language and the core intent to study the factors of innovation culture would suggest that the researcher's fundamental proclivity is to identify and study the most important factors of innovation culture. This, because in its very essence assumes that some objective criteria can be derived from the understanding of the context of the study, does not lend itself easily to interpretivism as it fundamentally clashes with interpretivism's ontological inclination of multiple realities, which in its truest sense cannot co-exist with the idea of using objective criteria to then compare those realities. Also, following Pugh (1983: p. 46) who observes, *"people and organizations exist as relatively concrete entities and this is a necessary assumption for the advancement of the knowledge of the functioning of the organizations"*, the researcher believes that interpretivism in its purest form can be inherently damaging to the research as an assumption

of multiple realities will have an impact on the applicability of results to other areas in the future. However, the side of interpretivism that favours studying innovation culture is that the values and beliefs are social phenomena and are concept-dependent. They will need interpretive understanding, even in order to come up with an objective list of factors in order to compare them with those identified in the literature. Additionally, in the case of RQ2, interpretive understanding will be a necessity in order to understand the reasons why certain factors of innovation culture are more important than others within the context in which they occur.

Therefore, drawing on the positives and rejecting the negatives of the extreme research paradigms from an innovation culture perspective, the view taken here is that (a) reality exists independently of the observer, whether it is observable or realized in the form of experiences of participants, and (b) social phenomena are concept-dependent and need interpretive understanding. This philosophical position can be closely associated with *realism*. Realism accepts that reality exists independently of what is experienced but attempts can be made to understand that reality; however, it will only be an approximation of that reality (Bhaskar, 1975; 6 & Bellamy, 2012). However, even though realism accepts that there is one 'real' world, it does not follow that we, as researchers, have immediate access to it or that we are able to observe its every aspect. Hence a cautious and critical attitude (a *cautious realist* attitude) would need to be adopted while studying the various factors of innovation culture both from literature and the actual empirical study. Therefore, the researcher's philosophical position is broadly inclined towards realism, but particularly what is labelled as a *cautious realist*[32] (Blaikie, 2007).

With regard to epistemology, i.e., assumptions related to what kinds of knowledge are possible, how one can know things, and what criteria are used to decide whether knowledge is adequate or legitimate for truth claims (Blaikie, 2010), this research involves identifying important factors of culture (based on views of participants in the research study),

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[32] *A cautious realist acknowledges that, although there is an objective reality, independently of the observer, there are imperfections in human senses and therefore the world cannot be observed directly or accurately (Blaikie, 2010).*

where decisions are made as to which ones are important based on the methods used to collect and analyze data. The outcome of the data analysis is the judgment exercised by the researcher (from an outsider's perspective) based on whatever data are available at this point in time, and not a matter of absolute proof with regard to the key factors of innovation culture. These characteristics align to an epistemological position called *conventionalism* (Blaikie, 2007). Within this epistemology, theories that are developed as part of the research do not describe wholly the actual reality (as there are imperfections in human senses), but what is considered by the researchers to be real. And therefore, theories are tools to explain the reality. This does not necessarily mean that there is a gap between reality and the theories that explain that reality, but instead every new theory that describes a reality serves as an example in support of the idea that scientific research is a *"discontinuous revolutionary process through which earlier conceptions are rejected, displaced, and replaced by new theoretical constructs"* (Benton, 1984: p. 25).

Thus, this research study's ontology is *cautious realist* and the epistemology is *conventionalism*. They are both inherently aligned to the inductive research strategy (Blaikie, 2007). Within the inductive strategy, the meaning of cautious realist ontology is that the reality (i.e., the innovation culture within an organization) exists independent of the observer (the participants and the researcher), and cannot be observed directly or accurately, so careful attention needs to be paid to the derivation of themes/categories from the data. Likewise, the meaning of conventionalism epistemology is that whatever themes/categories are derived from the data are not wholly the actual reality but the reality as seen through the lenses of the researcher.

After having a well-established position in terms of the research purpose, strategy and the philosophical orientation for this research study tightly aligned to RQ1 and RQ2, the next step is to identify the research design that is most suitable to answer the RQs. This is discussed in the next section.

4.3.3 Research Design Alternatives: The case for a Case Study design

As discussed previously in Section 4.3.1, the RQs suggest that the nature of this research is exploratory, albeit with some form of description required with respect to RQ2. Broadly, the main research design alternatives for social science researchers are experiments, quasi-experiments, action research, ethnography, phenomenology, and case studies (e.g., Robson, 2002; Easterby-Smith et al., 2008). The various choices available are evaluated in the section within the context of the RQs, research purpose, research strategy, and the underlying philosophical orientation. Experiments involve the total control of the researcher as the focus is on closed systems, requiring time and characterized by fixed experimental research design (Robson, 2002). First, there is no requirement for the researcher to place controls on a closed situation. Moreover, an experimental set-up is based on a thoroughly developed theory in order to design an experiment with a clear view of specific aspects to be tested. This is clearly not required, given the purpose of this research, which is to explore and identify which factors of innovation culture are most important for managers. Even a little less controlled environment, also known as a quasi-experimental set-up, is not required because such a set-up is best suited for longitudinal studies (considering before and after observations) (Robson, 2002).

Given the exploratory purpose of this research, with an inductive research strategy of gathering data to then identify key themes or key factors, underpinned by a cautious realist ontology and conventionalism epistemology, which inherently require a flexible design to gather data and draw inferences from the experiences of managers (Blaikie, 2007), a flexible design may be more suitable (Robson, 2002; Blaikie, 2007). This narrows the choices down to flexible research designs: action research (and its close affiliate grounded theory approach), ethnography, phenomenology and case studies, as possibilities (Robson, 2002). Action research is akin to a more consultative approach (Yin, 2012) requiring 'problem-solving' and that also solves a predefined problem. This is not in line with the purpose of this study. Ethnography, which involves participant observation for extended lengths of time (Robson, 2002), and as the researcher is required to immerse himself or herself in a culture (Easterby-Smith et al., 2008), was also not considered for the same reason of little or less

focus on longitudinal studies, and also because the focus is on exploring the perceptions of managers on factors of innovation culture and not being immersed in observations. Phenomenology which *"studies the structure of various types of experience ranging from perception, thought, memory, imagination, emotion, desire, and volition to bodily awareness, embodied action, and social activity, including linguistic activity …....which make up the meaning or content of a given experience, and are distinct from the things they present or mean"* (Stanford Encyclopedia of Philosophy[33]) is also not suitable, given that the research study is not related to the consciousness of mind or the study of the philosophy of mind.

Of the flexible designs, case study seems to be the closest possible choice. Miles and Huberman (1994: p. 25) define a case study as *"a phenomenon occurring in a bounded context."* Yin (1989: p. 23) defines it as *"an empirical enquiry that investigates a contemporary phenomenon within its real life context, when the boundaries between phenomenon and context are not clearly evident."* The phenomenon of innovation culture is such that it is tightly bound to the context and can be understood better in that real life context (Dombrowski et al., 2007; Januinaite, 2010). In addition, RQ1 seeks to understand the most important factors of innovation culture, potentially involving multiple factors (the SLR in Appendix 1-1 has already indicated the possibility of a large number of factors). The case study accommodates these demands vis-à-vis traditional positivist approaches, which deliberately divorce phenomena from context seeking to minimize or 'control' for the role of the specific context to study the effect of a relatively small number of factors (Yin, 2012). The case study can effectively deal with the interaction between multiple factors (albeit with a fewer number of data points) (Blaikie, 2010) that may not work independently, and looks for effects emerging, often in complex ways, from the whole set of interactions, rather than from a principal or independently of one, or a few, factors (e.g., Thomas, 2011; 6 & Bellamy, 2012). Additionally, the case study most certainly supports: (a) exploratory research (Miles & Huberman, 1994; Yin, 2012), which seeks to understand the phenomenon of innovation culture at a fundamental level; (b) the inductive research strategy, where semi-structured

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[33] *http://plato.stanford.edu/entries/phenomenology/#5*

interviews and other qualitative techniques[34] can be used in conjunction with each other flexibly to allow key themes (in this case key factors) or narratives to emerge within the context of a case; and also (c) the philosophical orientation of realism, i.e., the case study allows the researcher to construct and develop an understanding of reality by using multiple sources[35] of data, robust analysis, and interpretation of such analyses within the case context (Yin, 2012). Further, RQ2 seeks to understand the reasons for the importance of the key factors within an organizational context, and again the case study can most appropriately deal with that as it allows contextual understanding of the phenomenon in relation to contemporary events (Miles & Huberman, 1994; 6 & Bellamy, 2012; Yin, 2012). Thus, the case study can help in answering RQ1 by way of identifying multiple factors at play within the case context and RQ2 by way of enabling the identification of the various reasons for the importance of the factors of innovation culture within a case organization.

Before progressing further into detailing the case-based design, which describes the specific methods involved (in Section 4.4), a brief note on multiple case study design (Section 4.3.4), the case study research context, unit of analysis and sampling for the research design (Section 4.3.5) and the quality of the research study (Section 4.3.6) are discussed next.

4.3.4 The Choice of Multiple Case Study Research

Many scholars have suggested that the more cases there are, the better the understanding of the phenomenon, so the number of cases is significant (e.g., Blaikie, 2010; Yin, 2012). But the decision needs to be balanced with the resources available (Blaikie, 2010). While the number of cases is important, Stake (2006) argues that the focus needs to be on the 'quintain', i.e., the phenomenon of interest (innovation culture) over the specifics of individual cases, as the insights generated about the phenomenon are more important than the exact number of cases. Following Stake (2006), and in line with the broader exploratory purpose of this

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[34] *Semi-structured interviews and focus groups (as discussed in Section 4.4) were used as the methods to not only identify the key factors but also to understand the reasons why the key factors are important.*
[35] *The literature review identified that an understanding of cultural artefacts and physical environment through observations (as a data source) is an important aspect of understanding culture better (e.g., Sashittal & Jassawalla, 2002).*

research, a detailed analysis of current case studies (identified from papers in the SLR's consideration set) was undertaken to understand what gaps there are in current case studies. It was evident that the existing case studies lacked rigour and rich cross-case comparisons. The gaps identified (as shown in the detailed analysis presented in Appendix 4-1) indicate that there is an opportunity to generate valid and thorough empirical work through a multiple case study research design. Therefore, a decision was made to undertake multiple case study research.

4.3.5 Case Study Research Context, Unit of Analysis and Sampling

4.3.5.1 Case Study Research Context

PSF industry has been identified as the context in which this study would be undertaken. The following are the key reasons for the selection of PSF/consulting industry:

- Given the nature of work undertaken by PSFs, they continually co-create value with clients in terms of innovative products and services to clients and hence an opportunity to learn from such industries:
  - There is an expectation that, on a daily basis, individuals face new problems and creative challenges and therefore an environment conducive to dealing with these is required (Maister, 2003)
  - The consulting industry has started to now focus on innovation and there is much need for a supportive internal culture within consulting companies: *"Despite the recession, three quarters of firms say they have increased the amount of time and money they invest in innovation over the last five years"* (Management Consultancies Association, 2009: p. 8).
  - The organizations in this industry are exposed to a constantly changing business environment that demands challenging and creative responses for survival (Eckermann et al., 2003; Prajogo & Ahmed, 2006)
  - Routine, in this industry, is the exception rather than the norm (O' Mahoney, 2011). Companies in such an environment will need to be innovative to survive (Moultrie & Young, 2009)

- o There are always new aspects in the services rendered by PSFs to specific clients; every engagement or project is unique and therefore the outcomes required, and actually delivered, are also unique (O'Mahoney, 2011)

- PSFs contribute to $280billion of revenue (Consultancy.uk, see Appendix 1-3 for more details) to the economy worldwide and not much in terms of innovation culture is known about them. This is confirmed through the SLR; no studies in the consideration set of 74 papers (or the PSF industry specific literature) actually relate to innovation culture in the PSF industry (discussed in Chapter 1, Section 1.5)

- There is an increasing interest in studying PSFs among management theorists (Hinings & Leblebici, 2003; Greenwood et al., 2006) because PSFs are increasingly relevant to non-PSFs from the perspective of learning and understanding knowledge-based work (von Nordenflycht, 2010) as they are extreme examples of knowledge intensity for an increasingly knowledge-based economy (Hinings & Leblebici, 2003; Greenwood et al., 2006; Anand et al., 2007)

Therefore, for the reasons stated above, the PSF industry presents a unique context in which to study the phenomenon or the concept of innovation culture.

4.3.5.2 Unit of Analysis

With regard to the unit of analysis, Miles and Huberman (1994) suggest that it is the heart of the research study and that it highlights the research boundaries. Yin (2012) provides some advice in this regard:

1. The unit of analysis has to be very closely linked to the RQs.
2. To enable comparison and generalization, the unit of analysis has to be either similar to that of existing research, or totally different.
3. It is easier to describe what will not be covered than what will be.

With reference to point 1, it is important to note that it will be difficult to justify a study on innovation culture without considering the context in which the phenomenon occurs. Tesluk et al. (1997) explain the importance of context in the following two ways: 1) the basic underlying assumptions and beliefs become enacted in established forms of behaviours and activity, and are reflected as structures, policy, practices, management practices and procedures and, further, 2) through socialization processes, individuals learn what behaviour is acceptable and how activities should function, and these in turn have an impact on the underlying assumptions based on outcomes of those behaviours. So, given the contextual influences and how they bring innovative behaviours to bear, the shared view of people in an organization can influence what they think are important factors for innovation culture (RQ1); also, there could be reasons well embedded within the context (RQ2) that can influence people's views on why such factors (from RQ1) are important. Therefore, as opposed to individuals or even small groups/project teams within an organization, an analysis at an organizational level was considered to be more revealing from an innovation culture perspective. This view is supported by a number of empirical studies[36] in innovation culture.

With reference to point 2, given the multiplicity of factors identified and applicable at an organizational level[37], innovation culture (viewed holistically) can be much more amenable to studies at this level.

With reference to point 3, a decision was to be made as to what would be excluded at an organizational level of analysis. The scope of the case studies takes into consideration the structure of the PSF organizations, i.e., within a PSF, the areas of business that undertake routine work such as IT support and maintenance, sales and marketing, human resource support, internal facilities, etc. were excluded. Most PSFs have various lines of business

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[36] *Please refer to Appendix 1-1 (Stage 4-1: Descriptive overview of the literature) where it was shown that the majority of the studies have been at an organizational level (e.g., Jassawalla & Sashittal, 2002; Gudmundson et al., 2003; Dackert et al., 2004; Terziovski, 2010).*

[37] *The literature review identified 27 factors of innovation culture. Some were identified to be applicable at individual and group levels, but most of them are applicable at an organizational level (see Chapter 3). The support provided at an organizational level through processes and practices to create an environment/culture supportive of innovation is of vital importance.*

(LoBs). For example, IT Consulting companies have practices that are core to the consultancy and could be grouped under consulting LoBs (e.g., practice groups that undertake pure business consulting, practices that provide product-based expertise, practices that provide technology and infrastructure consulting across various industry domains such as insurance, manufacturing, utilities etc.). This selection was made because consulting LoBs (a) deal with non-routine and innovative work on a daily basis (O'Mahoney, 2011) and (b) can also be a good basis for comparable units of analysis across multiple cases included in the study (this is a multiple case study as discussed in Section 4.3.4). Also, consulting LoBs work in similar kinds of conditions with the typical industry characteristics, such as client billability, business development work support required from client facing front-line consultants, and practice development to grow the business (Anand et al., 2007), so they can provide a common basis to compare findings from individual cases. Therefore, consulting LoBs at an organizational level is the unit of analysis for this study.

4.3.5.3 Sampling

Given that innovation can be exhibited in any industry, a set of criteria used to identify the cases within the PSF industry have been derived (based on O'Mahoney's (2011) study of what innovation means for PSFs):

(1) New solutions: products, processes and services which are new, either to the market or to the consultancy itself

(2) Adapting solutions: existing products, processes and services, which are not new but often adapted for entry into new clients or markets – most common form of innovation

(3) Thought leadership: white papers, new concepts and research that provides insights or advice. This may relate to new or improved solutions leading to creation of new demand

(4) Creative problem solving: Ad hoc solutions which do not lead to new products but which overcome an issue for clients or consultants, known to be provided by niche consultancies

Adding to this is another key point that characterises an innovative company in general, derived from the literature:

(5) The organization has its focus continually on people and the culture supportive of innovation (e.g., Moultrie & Young, 2009), which is very clearly reflected in the company's vision and mission statements (Dombrowski et al., 2007)

In terms of identifying the relevant cases for this study, case study researchers do not have to claim that their cases are representative of wider populations (6 & Bellamy, 2012); instead, they have a number of other ways to justify the selection of their case studies: *intrinsically interesting*, *illustrative*, *typical*, or *extreme* cases. *Illustrative* cases are the ones that are akin to those used in medical education, management studies, professional development courses etc., which are used to illustrate, or even stimulate, features that are found in real life practice. *Intrinsically interesting* cases are the ones selected because the researcher thinks and is able to demonstrate what is interesting about the cases they select. An *extreme* case is one that is particularly revealing because it reveals *"the features of interest in a particularly pure and easy way." Typical* cases are the ones that may *"illustrate features that are widely found"* and *"they are deemed worthy because of their typicality"* (6 & Bellamy, 2012: p. 112). This suggests that innovation practices/factors of innovation culture cannot be studied in non-innovative or less innovative companies. An initial search for Product Design and Development consultancies (extreme cases) to study innovation culture was undertaken but was unsuccessful. The researcher sent several emails, but has had no responses back from them. So, the researcher then turned to Neo-PSFs (PSFs characterised by high knowledge intensity, low capital intensity, and no professionalization of the workforce, as discussed in Chapter 1, Section 1.5.1) because the researcher has a familiarity with the industries of IT, management and engineering consultancies and given an initial search of the companies there were promising prospects of being able to find illustrative cases for this study.

Selection of Cases A and B: Within the Neo-PSFs, the focus was very much on finding illustrative cases – cases which are top organizations in terms of their performance with respect to new products, consulting services, addressing client problems innovatively, and industry thought leadership, introduced in the marketplace (points 1 to 4 above) between 2010 and 2014. Unfortunately, because there are no industry standards (nor are there any existing studies) to identify innovative PSFs, the top 5% of the organizations within each subsector (IT and management consultancies) in terms of their growth between 2010 and 2014, also identified as innovative in various solution/service offerings (as evidenced by reports from the industry research groups Gartner and Forrester between 2010 and 2014), were shortlisted. IT consulting industry here refers to companies whose core strength is in designing and delivering enterprise IT solutions and management consulting industry here refers to companies with their core focus on organizational strategy, operations management, change management, innovation management and delivery of large scale business transformation programmes for clients. Among those identified (i.e., the top 5%), 7 organizations were shortlisted (based on researcher's contacts and availability of time) to approach them for access: four organizations within the IT consulting industry and three organizations within the management consultancy industry. Additionally, in line with point 5 above, a detailed review of the 7 selected companies to approach was undertaken. Their vision and mission statements were reviewed[38] for references to their focus on innovation, people and the culture of innovation. Also, a detailed review of their annual reports was undertaken to make sure they had evidence to support their claims of focus on innovative products, services (e.g. revenue from new products/services, client-experience centred innovation labs, new service offerings to new markets, client testimonials, new industry strategies for the digital age) and people culture practices within the organization (e.g. incentives/rewards and recognition, training, coaching, employee support for innovation, and labs to test new/innovative ideas, etc.) across the various industry domains in which they operate. Finally, after several rounds of discussions, Case A, which was identified as a leader in several innovative service offerings (e.g. enterprise level IT solutions) they provided to

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[38] *For reasons of confidentiality, neither the names of the companies nor their sample vision and mission statements can be presented here.*

clients, from the IT consulting industry and Case B, which was identified as leader in their league of consulting and also innovative based on their initiatives of setting up labs across the UK to test out new industry concepts in the marketplace, from the management consulting industry, agreed to participate.

Selection of Case C: The researcher, through business/industry connections, was able to contact two engineering SMEs (Small and Medium Enterprises). These firms are not only among the top UK based engineering consulting firms that have an excellent market reputation (noted from published client testimonials) and well represented in industry forums through their contribution to all active consultation in the area of industry wide environmental and waste management changes but also actively involved in delivering innovative solutions to their clients. After several rounds of discussion with both organizations, the researcher was able to secure one organization for research to undertake the case study (Case C). Case C can be categorised as an intrinsically interesting case because of three key reasons: (a) they work very closely with the EU on research and innovation projects; they have secured a EU 2020 funded research and innovation project, which is one of the first research innovation projects led by industry; (b) their ability to deliver environmentally friendly and innovative solutions to clients (e.g. won a sustainability award for sewage/waste ground engineering excellence) and (c) their high quality of consulting advice, reflective of their deep domain capability, supported by lab-tested innovative solutions to clients (e.g. recipients of Professional Services Award of the year recently). Case C is continually challenged to provide innovative solutions because of the several constraints related to environment and sustainability related regulations. They are best known in the industry for such challenging solutions.

With a mix of both illustrative and intrinsically interesting cases, this study seeks to gain insights into the 'quintain' (phenomenon) of innovation culture, through a detailed cross-case analysis, by way of comparing and contrasting findings from the three individual cases. While acknowledging that there will be subtle differences across these organizations in terms of their innovation culture related practices (e.g. rewarding innovation, engaging

with external partners, leadership support for innovation), the focus was set on the 'quintain' (phenomenon) of innovation culture through multiple case analyses (Stake, 2006).

From a practical standpoint, the decision to undertake three case studies was a significant one. A balance had to be struck between the time available to the (part-time) researcher and the amount of data that would be needed to provide sufficient evidence (i.e., the depth of analysis) and reasonable confidence in the findings. From the perspective of sufficiency of data, 12 detailed interviews (see Appendix 4-6 for more details) and one focus group (FG) for each case with supporting evidence from documents and observations were deemed necessary to undertake detailed case studies; this was evident from the pilot study (Appendix 4-5). So, in contrast to a number of empirical studies in this field of research that studied an organization based on the responses from a single respondent (e.g., Jamrog et al., 2006; Valencia et al., 2010) or two or three respondents (e.g. Saleh & Wang, 1993), this study uses more respondents to gain a richer view of organizational dynamics[39] (Terziovski, 2010; Valencia et al., 2010).

4.3.6 Quality (Reliability and Validity)

The quality of the case study research cannot avoid the areas of construct validity, internal validity, external validity, reliability, credibility and confirmability (Reigle, 2003; Goffin et al., 2012; Yin, 2012). There are some guidelines provided for methodological rigour with respect to case studies as presented in Table 4.1.

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[39] *Valencia et al. (2010: p. 475) argue that using an organizational level of analysis (in this case LoB) enhances the validity of research findings: "Although the use of single informants remains the primary research design in most studies* [referring to studies in culture research]*, multiple informants would enhance the validity of the research findings." Also, see Appendix 4-6 for justification to use 12 interviewees for each case study.*

Table 4.1: Rigour in Research (Reigle, 2003; Goffin et al., 2010; Yin, 2012)

Tests	Description	Case Study Tactic
Construct Validity	Identify correct operational measures for concepts in the study	Use of multiple sources of evidence through multiple case studies Have interviewees review draft case report and give feedback Have another researcher as part of the coding process
Internal Validity	Ensure study's findings make sense to the interviewees	Provide rich description for readers to generalize to their own settings Provide rival explanations Triangulation of data (analytical tactic)
External Validity	Define the domain in which the study's findings are generalized	Generalize to theory through comparative analysis with theory/literature Provide rich description for readers to generalize to their own settings
Reliability	Demonstrate that the operations of the study (data collection procedures and analysis instruments) can be repeated with the same results	Use case study protocol Develop case study database
Credibility	Involves the approval of the research findings by either peers or interviewees as realities can be interpreted in multiple ways	Have interviewees review draft case report Have peer researchers review construct development (repertory grids, to be discussed later in Section 4.4) and comparative analysis with literature
Confirmability	Assess whether the interpretation of data is drawn in a logical and unprejudiced manner, i.e., the extent to which the conclusions are the most reasonable ones obtained from the data	Provide details of the methods and procedures and step by step explanation of the analysis Retain the study data if required for re-analysis

In this study, the use of multiple sources of data through multiple case studies was made to address construct validity. In addition, the interviewees/sponsors of the individual case studies reviewed the within-case descriptions and provided their feedback. This addressed the aspect of understanding contradictory and conforming interpretations and thus ensured internal validity and credibility. For external validity, following Yin (2012), this study used general assumptions in relation to underlying theories and tested those assumptions through comparative analysis with the literature, and provided rich within-case and cross-case descriptions for readers to generalize to their own setting.

For reliability, as Yin (2012) and Miles and Huberman (1994) suggest, this study used carefully designed case study protocols and maintained a case study database for future reference. Further, to address *Credibility*, i.e., to avoid multiple ways of interpretations of multiple realities, the findings from the case studies were reviewed and agreed with both the interviewees and/or sponsors of the individual case studies. Finally, to address *Confirmability*, this study has detailed explanations of the case procedures logged in three

different databases (one for each case) available for review when required. The aim was to ensure that the interpretation of data was undertaken in a logical and unprejudiced manner.

The next section deals with the research methodology in terms of the case methods used for data collection and analysis, covering both within individual cases and across cases.

4.4 RESEARCH METHODOLOGY: DATA COLLECTION & ANALYSIS

4.4.1 Case Study Methods and Data Sources to Answer the RQs

Within the broader case study approach, a number of methods of data collection can be used, such as quantitative surveys, interviews, FG discussions, etc. (Yin, 2012). For this study, data were collected from the below mentioned sources:

- Repertory grid interviews – face-to-face rep grid interviews
- FG discussions – with the same group of interviewees as above
- Document analysis – including such documents as company policies, annual reports, information/published documents in the public domain, archives, etc., based on availability
- Observations – unobtrusive and unstructured but within a broader framework of looking at work spaces, actors, activities, physical objects, and general events
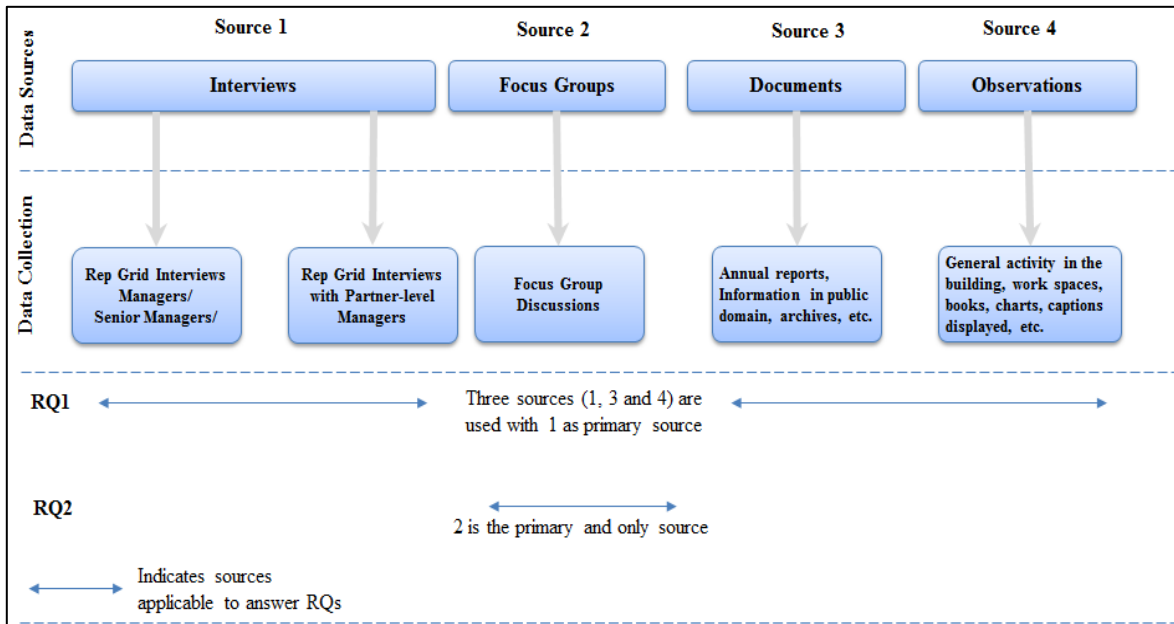
Figure 4.1: Overview of Data Sources

Figure 4.2 provides the details of how the four sources of data were used to answer the RQs using the case study approach for within-case analysis. Rep grid analysis produced a list of key factors (i.e., key categories that emerge as significant from interview data collected) of innovation culture based on 12 rep grids within each case organization; the data to answer RQ1 came primarily from this source but with supporting evidence from documents and observations. There was one FG for each case with the same group of interviewees to look at why the key factors were relevant to the case organization and the FG was used as the primary source of data to answer RQ2.
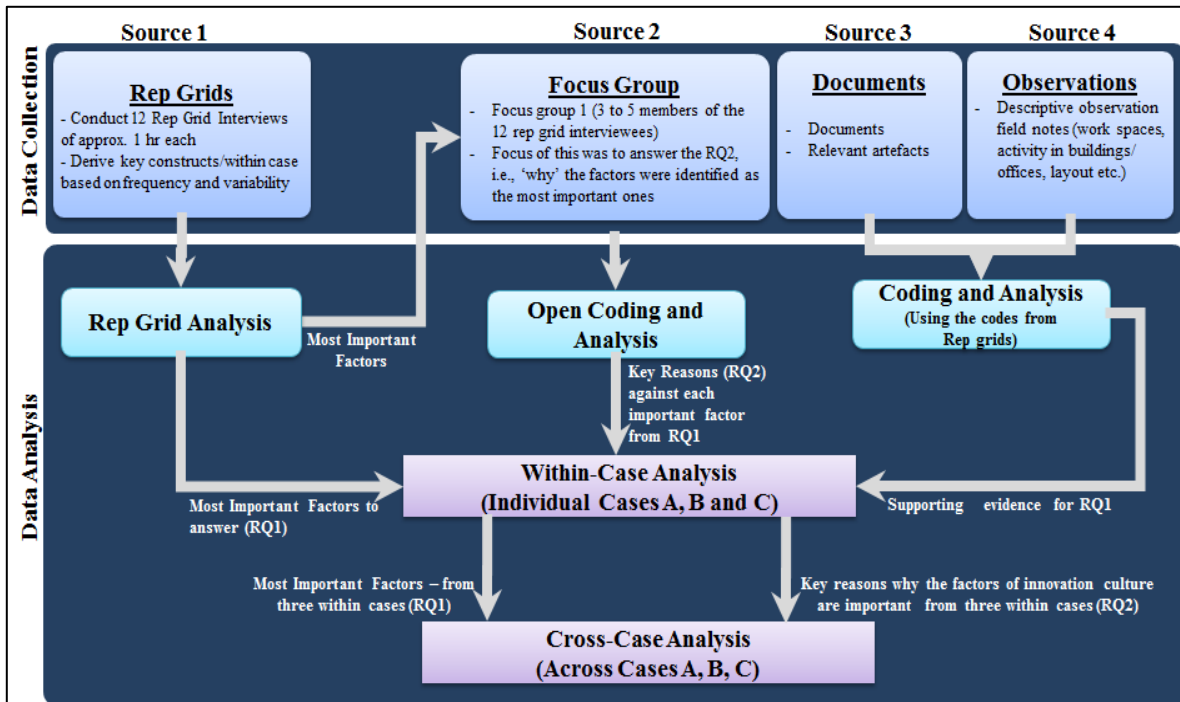
Figure 4.2: Within- and Cross-Case Data Collection and Analysis

For the within-case analysis, the coding frame (for RQ1 and RQ2) developed for Case A was used as the basis and then progressively codes for Cases B and C were developed and added. As this study includes three case studies in order to understand the 'quintain' of innovation culture better, cross-case analysis was also undertaken using findings from each of the individual cases. The summary of data sources and their role in answering the RQs is presented in Table 4.2.

Table 4.2: Summary of Data Sources and how they address RQ1 and RQ2

Type of Analysis	Rep Grid		Focus Group		Documents		Observations	
	RQ1	RQ2	RQ1	RQ2	RQ1	RQ2	RQ1	RQ2
Within-Case Analysis	Key factors from 12 interviews	No input	No input	Final set of reasons against each key factor	Supporting evidence	No input	Supporting evidence	No input
Cross-Case Analysis	Findings of key factors from three individual cases	No input	No input	Findings of the final set of reasons against each key factor from the three within-case analyses	No input	No input	No input	No input

A full pilot study was undertaken before confirming the research design (as presented in Sections 4.4.2 to 4.4.5). The details of the pilot study, amendments proposed, and learning that emerged, are presented in Appendix 4-5. All of these changes have been built into the

research methodology described in this section to make sure the data collected are fit for purpose and able to provide the necessary means to draw inferences to answer the RQs. The next four subsections (4.4.2 to 4.4.5) discuss the rationale for the use of the specific sources of data, data collection and analysis for this research study.

4.4.2 Repertory Grid Method

Given the nature of the phenomenon under investigation, for RQ1 a qualitative interview method[40] was identified as a more relevant and useful source, as it deals with human affairs or behavioural events (Yin, 2012) that directly relate to innovation culture (Martins & Terblanche, 2003). Of the interviewing methods, repertory grid (rep grid) was identified as most suitable to answer RQ1. This interview method was developed by the psychologist Kelly (1955). It is a form of structured interviewing that enables interviewees to articulate their views as '*constructs*[41]' on complex issues (Hussey & Hussey, 1997), which are not easily understood. This study used rep grid for three reasons. First, it is particularly appropriate in exploratory studies where the constructs (in this case, the factors of innovation culture) are unclear (Goffin, 2002). For example Dobni (2008) used innovation culture and innovativeness synonymously and included 'customer focus' (a factor from the phenomenon or the concept of innovativeness as published by Wang and Ahmed (2004)) in his measurement instrument. The researcher is not arguing against the relevance of 'customer focus' for innovation culture, but instead calling into question an approach of using factors from a closely related phenomenon that is generally taken in the literature in this field of research and may be inherently damaging to future research (Adcock & Collier, 2001). This kind of validity issue with regard to defining a phenomenon or concept is not uncommon in

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[40] *The first method that was evaluated was a quantitative survey. However, this was readily eliminated because of the restricting nature of the survey to include all 27 factors identified from the literature, allowing no scope to study any new ones. Also, if a survey were used for RQ1, semi-structured interviews would have to be conducted to answer RQ2, making the overall design clumsy and unwieldy. Based on this, three options for qualitative interviewing were identified and piloted: Option 1 – open ended questions; Option 2 – semi-structured interviews; and Option 3 – repertory grid method. From the pilot interviews, it was evident that both Options 1 and 2 could not generate the necessary data to answer the RQs and provide a definitive approach to identifying the 'most important factors', much less answer the RQ2. Please refer to Appendix 4-5 for full details of the pilot study.*

[41] *Constructs in the repertory grid are basic terms that the interviewees use in order to express the aspects they feel are important in relation to an innovative culture.*

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any emerging field during its initial stages of research (Mackenzie et al., 2011; 6 & Bellamy, 2012); more so in the case of innovation culture, as it is not a readily observable phenomenon. Given this situation, it is generally advisable to take a step back and look at the definition of the phenomenon or concept itself (Adcock & Collier, 2001). Therefore, rep grid has been identified as a suitable research method that can be very useful in encouraging interviewees to think deeply, objectively and reflectively (Goffin, 2002; Goffin et al., 2010; Few & Few, 2013), and to talk about the factors of innovation culture without biasing them to any of the 27 factors identified through the SLR. The advantage of using this kind of approach is also to capture any new factors of innovation culture that have not been identified or researched previously, leading to construct validity. Second, given that this research is being conducted in the PSF context, it was identified that there would be access and time constraints and the researcher himself might not have enough shared background and experience with the interviewees. Rep grid as a method is very good in cases where there is such limited opportunity to gain shared experience (Few & Few, 2013). Third, the data from rep grids bring a quantitative angle to qualitative data (Eisenhardt, 1989; Miles & Huberman, 1994), given that the most important factors of innovation culture would need to be established (RQ1) from a long list of factors mentioned by the interviewees. For the purpose of this research study, it was decided to use 12 interviewees from each case; the rationale for this is discussed in Appendix 4-6.

4.4.2.1 Data Collection

The following are the steps used for rep grid interviews (Goffin, 2002) as illustrated in Figure 4.3.
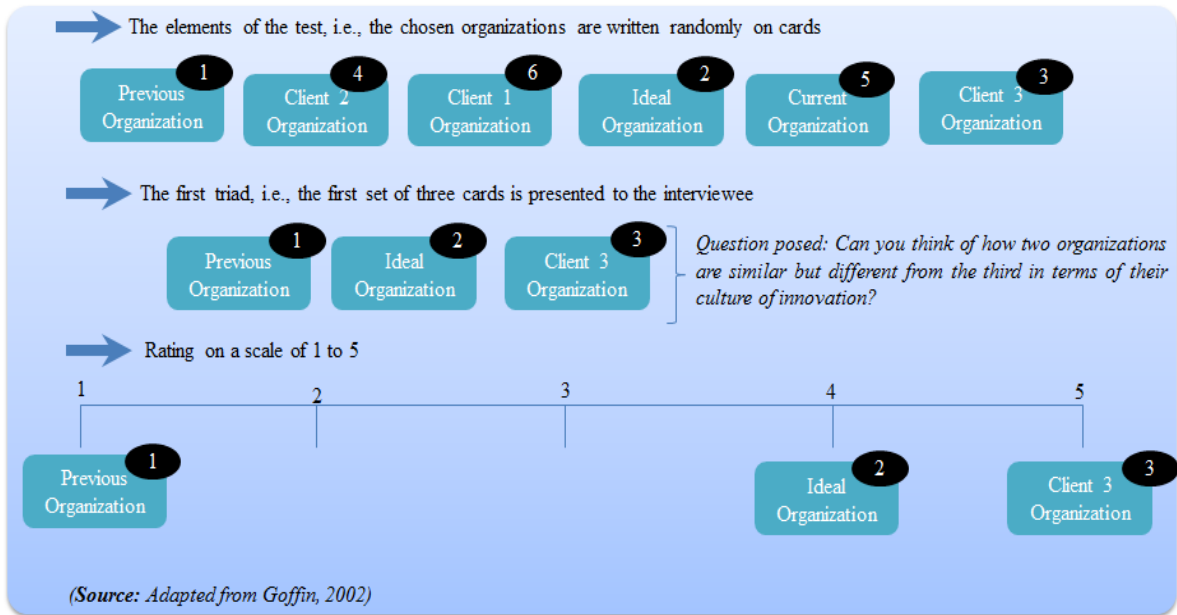
Figure 4.3: Steps in Rep Grid Data Collection

Based on the literature, and learnings from the pilot interviews (Appendix 4-5), the following stages (see Figure 4.3) were used for all three case studies (see Appendix 4-2 for the detailed script of the interview) (Goffin, 2002; Goffin et al., 2010):

▪ The *pre-interview briefing and introduction* was used to discuss the purpose of the research and provide a brief overview of the research technique.

▪ The *elicitation of the elements* was done by requesting the interviewee to think of six organizations (previous organization, existing organization, ideal organization, and three client organizations with which they spent a good amount of their time). The elements were then written on cards which were randomly numbered as illustrated in Figure 4.3, where organizations were written on cards out of sequence. It was important that the elements were specific, discrete, as simple as possible, homogeneous and, most of all, the interviewee had to have a good understanding of them (Goffin, 2002).

▪ The *presentation of triads* of elements to the interviewee was done and the following question was asked: *"Can you think of how two organizations are similar but different from the third in terms of their culture of innovation?"* The response to this question provided details of constructs so that the interviewee was able to differentiate between

the elements in the triad. This construct was then placed in a matrix under the title 'positive pole' (see Table 4.3, the greyed out cells are the triads used). Further, the interviewee was requested to provide a 'negative pole'; this was done to gather a deeper understanding of what the construct actually meant to the interviewee. Along with the above interview question, laddering was used to ask follow-up questions as to why they mentioned the constructs and how those they mentioned were relevant to them from an innovation culture perspective. After identifying each construct, open-ended questions[42] were used to clearly understand their meaning (Drew, 1995; Rogers & Ryals, 2007).

Table 4.3: Sample Repertory Grid with Data

No.	Positive Pole	1 Previous	2 Ideal	3 Client 3	4 Client 2	5 Current	6 Client 1	Negative Pole
1	Responsive to change	4	2	2	3	3	3	Rigid approaches
2	Access to top management	5	1	4	3	2	3	Access to only line managers
3	Diversity of experience	4	1	3	4	2	5	Similar experience
4	Openness to communication	4	1	2	2	2	2	Siloed working
5	Access to physical spaces	5	1	5	3	2	5	Uninspiring physical spaces
6	Team camaraderie (incl. trust)	4	1	2	1	2	1	Individual mentality
7	Outcome focused	4	1	2	4	3	4	Process driven
8	High people's IQ (Intelligence Quotient)	3	1	3	3	2	4	Low/Avg. people's IQ
9	High people's EQ (Emotional Quotient)	4	1	4	2	2	2	Low people's EQ
10	Data-driven decisions	4	1	2	3	1	3	Intuition driven
11	Encouraging personal development	5	1	4	3	2	2	No support for personal development
12	Managers/leaders coach extensively	5	1	4	3	2	3	Don't coach very much
13	Leveraging new interactions (within/outside)	5	1	4	4	3	5	Always working with same people

- For each construct, the *rating of elements* involved the interviewee rating all of the six elements on a scale of 1 to 5 (where 1 refers to the organization being closest to the positive pole and 5 closest to the negative pole).

This entire process was repeated until no new constructs emerged, no new triads were available or the time ran out (Goffin et al., 2010). Further, for each successive triad, at least two cards were changed from a previous triad. This gave the interviewee a varied set of

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[42] *For example, "Can you explain that further?", "What is its relevance in the context of innovation culture?"*

elements to compare and provided more significant constructs. Care was taken to ensure that the interviewees defined specific constructs and did not use synonymous expressions.

4.4.2.2 Data Analysis

Following Goffin et al. (2012), and as advised by Jankowicz (2003), three broad steps of analysis were undertaken for all three cases:

Step 1: Coding the elicited constructs – refers to grouping similar constructs (from all 12 interviews) into categories or meta-constructs. Two researchers were involved in this process for all three cases: the main researcher (A) and the recruited researcher (B).

Step 2: Producing a reliability table – refers to comparing the different meta-constructs derived by both researchers (A and B) to identify similarities and differences by putting the meta-constructs as rows and columns respectively to derive a reliability table (Jankowicz, 2003). At this point, the inter-rater reliability[43] (IRR) was calculated (Miles & Huberman, 1994) for each case study.

Step 3: Conducting reliability checks – to introduce rigour into the categorization process, the two researchers discussed the constructs that were positioned off the diagonal of the reliability table, to obtain a clearer category/meta-construct definition (Miles & Huberman, 1994; Goffin et al., 2010), with construct validity being ensured through the researchers constantly consulting the interview transcripts (Jankowicz, 2003). This was to produce a second reliability table with an IRR of close to at least 90% as suggested by Jankowicz (2003).

Apart from the quantitative data of ratings (against each construct) from the rep grid, there were rich qualitative data from each interview (gathered through laddering questions)

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[43] *Number of constructs agreed on as a percentage of all the constructs in the table*

that were produced to understand the constructs better and that also enabled the grouping of constructs better.

The final list of constructs thus developed was checked for their variability and frequency to derive the most important factors[44] of innovation culture.

4.4.3 Focus Group Discussion

FG discussion (Dawson et al., 1993) was identified as the second source of data and the only one to answer RQ2. The FG involves organized discussions with a selected group of individuals to gain information about their views and experiences on a topic. The FG is, according to Lederman (cited in Thomas et al., 1995), *"a technique involving the use of in-depth group interviews in which participants were selected because they are a purposive, although not necessarily representative, sampling of a specific population, this group being 'focused' on a given topic."* This study used FG for four reasons. First, the FG was particularly relevant to answer RQ2 because an in-depth discussion with a subset of the same set of participants (Dawson et al., 1993) would be required (the FG was very useful and effective because time was of the essence for the part-time researcher, especially given that availability of consultants is a challenge in the PSF industry) as the discussion was around the factors identified from rep grids. Second, the FG would allow the researcher to gain insights into the group's shared understanding (Neuendorf, 2002) of the key factors of innovation culture within the organization's context to answer RQ2. Third, the researcher would be able to leverage group dynamics (Mertens, 1998), i.e., one group member's viewpoints on areas of application of the key factors would spark experiences as well as ideas from others. Finally, the FG would also provide an opportunity to gather some key points around the context of the organization culture of the case organizations captured during the discussions.

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[44] *For a factor to be important, its frequency of mention should be at least 25% (i.e., the number of interviewees that mention a factor) and the variability (i.e., how much the interviewees differentiate between the six elements with respect to the factor, the higher the better) needs to be high (Goffin et al., 2012). Both are required for a factor to be an important factor or key factor. Please refer to Appendix 4-3 for details of the use of frequency and variability to derive the key factors of innovation culture.*

Therefore, the FG approach was used to gather information to answer RQ2 and gain contextual understanding of the organization's culture in general, which proved very helpful for the case write-up. Please refer to Appendix 4-4 for the details of the full FG protocol that was used across all three cases.

4.4.3.1 Data Collection

For each key factor derived from the rep grid interviews, the questions to the FG were centred on: the relevance of the key factor to them, specific initiatives in the case organization in relation to the key factor, and what improvements can be made. These questions prompted discussion not only around the context of the organization, but also provided insight into how the case organization's priority areas are potentially associated with the factors of innovation culture, thus providing more contextual information that was more evidence to support the results from the case study. One FG was conducted per case company and each FG lasted for at least two hours. All data gathered as part of the FG discussions were transcribed verbatim to undertake data analysis, which is explained next.

4.4.3.2 Data Analysis

Krueger and Casey (2008) suggest that coding FG data is much like coding any other qualitative interview, but they point out that the analysis should be systematic, sequential, verifiable, and continuous. It is evident that a path of trail is required to provide evidence (Krueger & Casey, 2008), as was the case with the rep grid interview data analysis. Many researchers have suggested that the analysis of FG data can be undertaken in various ways, but must be related to the purpose of the research and what one is seeking to discover (e.g., Krueger & Casey, 2009; Onwuegbuzie et al., 2009). Since the main objective of RQ2 was to identify the reasons, which the FG data gave, as to why the key factors (from rep grids) are important, following Krueger and Casey's (2009) suggestion, the data analysis undertaken was open coding. The data from the FG discussions was analyzed using a two-step process as shown in Figure 4.4. These steps are briefly discussed next.
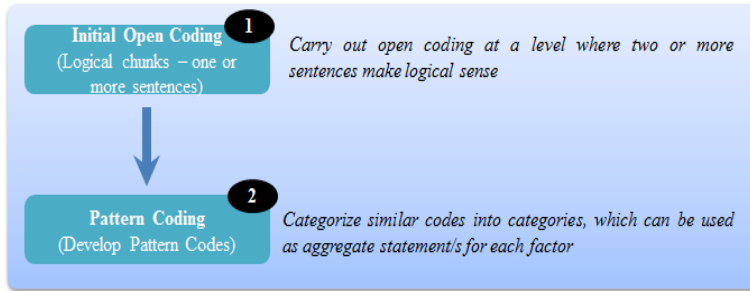
Figure 4.4: Analysis of Focus Groups

Step 1: Initial Open Coding – refers to coding the data (logical chunks – one or more sentences) using open coding (Saldaña, 2013). The output of this step was a list of codes, which was then analyzed next.

Step 2: Pattern Coding – refers to categorizing similar codes into aggregate or summary statement/s that broadly represented a group of codes in terms of the core essence or theme expressed by the participants.

4.4.4 Documents

Data from documents can be used to augment evidence from other sources (Wesley, 2009; Yin, 2012). Documents as a source included the collection of organizational documents, such as annual reports, company's vision/mission statements, existing innovation related policies, other policy statements that impact on people/employees, sample customer proposals highlighting innovation, etc. However, given that it was challenging to gain access to confidential documents (in cases B and C), this research has generally treated documents as only a source of supporting/contradictory/discrepant evidence (Wesley, 2009; Yin, 2009, 2012), rather than another key source to answer the RQs. Therefore, documents served two key purposes: 1) to gain a preliminary understanding of the organization through a structured way of collecting relevant documents for review, and 2) to gather evidence with regard to the key factors of innovation culture (from the rep grid analysis). This was used for RQ1 but not RQ2 (as there was insufficient information available to provide supporting evidence for reasons discussed in Appendix 4-5 on the pilot study).

4.4.4.1 Data Collection

Yin (2012: p. 103) suggests that *"systematic searches for relevant documents are important in any data collection plan."* The data collection was, therefore, undertaken within the broader framework of the results from rep grid data. Keeping the results from the rep grid as the centre of focus, specific documents (in addition to those collected for initial analysis), such as the case organization's innovation processes, emails associated with innovation events and key communications, details of innovation labs and how they are used, etc., were gathered for analysis; while this was possible for Case A, for Cases B and C it was documents gathered from the public domain and sources accessible to the researcher (e.g., company brochures, blogs, etc.). Therefore, very specific documents were gathered across the case studies for supportive evidence for RQ1.

4.4.4.2 Data Analysis

A simple two-step process for coding documents was undertaken. The coding frame developed as part of the earlier analysis (rep grid and FG data analysis) was used as a template for analysis of the documents (see Figure 4.5).
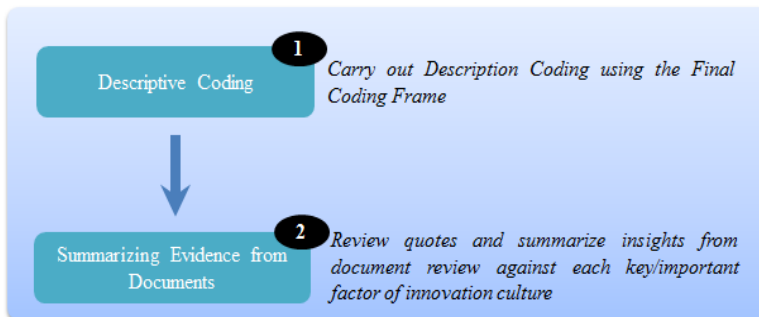
Figure 4.5: Analysis of Documents

Step 1: Descriptive Coding – refers to identifying broad chunks of data that could be then analyzed further. This coding led the researcher to build a *"categorized inventory, tabular account, summary, or index of data's contents"* (Saldaña, 2013: p. 89). The next step was to summarize the evidence.

Step 2: Summarizing evidence from documents – refers to summarizing the analysis of documents, i.e., each quote coded is now summarized against each of the key factors of innovation culture.

4.4.5 Observations

Like documents, observations were used to support/augment and challenge evidence (Robson, 2002; Wesley, 2009; Yin, 2012) to support RQ1. Yin (2014) suggests that observations can be made throughout a field visit including aspects such as condition of the buildings, work spaces, sidewalk activities, office rooms, etc.

4.4.5.1 Data Collection

This research took the view of *"non-participant observation, which is unstructured"* (Robson, 2002: p. 325) given that it is only supporting evidence and secondary to the main methods of data collection. While it was unstructured, general observations were noted down as field notes within a broader structure, capturing the following: *Space, Actors, Activities, Objects, Acts, Events, Time, Goals, and Feelings* (Spradely, 1980 cited in Robson, 2002).

4.4.5.2 Data Analysis

The quotes from field notes were treated as quotes from the documents and were analyzed in exactly the same way as the documents were analyzed (see Section 4.4.4.2).

Each individual case study (Chapters 5, 6 and 7) provides details of data collection and analysis undertaken in the steps as presented above for each of the various sources applicable to answer RQs 1 and 2.

4.5 CHAPTER SUMMARY

This chapter discussed two key conclusions building on the key insights from the SLR (Chapter 3). The first conclusion highlighted the importance of the focus on understanding the key factors of innovation culture and the second highlighted the importance of gaining an understanding of the reasons why the key factors are considered to be important. It was then discussed how these two key conclusions led to the two RQs of this study (RQ1 and RQ2).

This chapter presented a discussion on research design considerations. The discussion began with the primary purpose of this research, which is exploratory, and the inductive strategy that would be adopted to undertake this research study. It was further discussed how both the purpose and the strategy are aligned to the philosophical orientation of the researcher (i.e., a cautious realist ontology and a conventionalism epistemology) and how all three are aligned to each other. These are further discussed in the context of how they are aligned to a more flexible design, specifically a case study research. Further, it was discussed that based on the analysis of case studies in the literature, a multiple case study research design with an exclusive focus on the 'quintain' (i.e., the phenomenon or the concept of innovation culture) above and beyond the individual cases themselves would be most suitable to understand the phenomenon better. This chapter also provided details of the units of analysis (i.e., the LoB at an organizational level) and sampling that led to the identification of three cases to be studied in the context of the PSF industry.

Finally, this chapter provided details of the methodology, i.e., the specific methods used in this research study to answer RQs 1 and 2. Particularly, the following were discussed: purposefulness of rep grids as a primary source of data for RQ1, FGs as a primary source for RQ2, and documents, and observations (limited though) as supporting evidence for RQ1. It was also discussed how each one of the sources contributes to answering RQs 1 and 2.

5.0 CASE A – WITHIN-CASE ANALYSIS & FINDINGS

5.1 INTRODUCTION

This chapter is based on data and evidence from Case A (i.e. IT Consulting Co.) and presents the details of analysis and findings related to research questions RQ1 and RQ2.

Specifically, this chapter covers the following:

- Background information and data sources used for investigating Case A (Section 5.2);
- Results for RQ1: Data collection, analysis, findings and discussion (Section 5.3);
- Results for RQ2: Data collection, analysis, findings and discussion (Section 5.4);
- Key insights from Case A (Section 5.5); and
- The chapter summary (Section 5.6).

5.2 BACKGROUND

5.2.1   Company: Case A (IT Consulting Co.)

This case study was undertaken at Case A (IT Consulting Co.[45]), a global IT consulting services company with operations in North America, Europe, UK, India, etc. The study was undertaken at their offices in the UK. Case A's business is organized around the following industry segments: Banking, Financial Services, Insurance, Healthcare, Life Sciences, Manufacturing and Logistics, Retail, Travel and Hospitality, Consumer Goods, Communications, Information, Media and Entertainment, High Technology.

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[45] *Name has been changed to preserve anonymity.*

Case A's core competencies include: Business, Process, Operations and IT Consulting, Application Development and Systems Integration, Enterprise Information Management, Application Testing, Application Maintenance, IT Infrastructure Services, (IT IS), and Business Process Services. Case A's employees are based at clients' sites, local or in-country delivery centres, regional delivery centres or their global delivery centres. In terms of structure, the company has a matrix organization called *Verticals* and *Horizontals*. Verticals are divisions that focus on industries in which the company's clients operate, and Horizontals are divisions that develop service/solution offerings that serve across industries/verticals.

5.2.2   Data Sources Used

A total of 13 visits to several locations were made (some of the interviewees were at client locations across London) to carry out data collection. As part of the data collection activity, two of Case A's London offices were visited; 12 visits were for repertory (rep) grid interviews and one for the focus group interview. Documents and artefacts were gathered from the public domain and some of the interviewees who offered to help. Observations were made and captured as field notes during the visits. Section 5.3 provides details of the results and discussion for RQ1 (*What are the most important factors of innovation culture as perceived by managers?*). Likewise, Section 5.4 provides details of the results and discussion for RQ2 (*Why are the factors (from RQ1) of culture considered to be important?*). Three sources were used to answer RQ1: rep grids, documents, and observations. One source was used to answer RQ2: focus group (FG).

5.3 RESULTS FOR RESEARCH QUESTION 1 (RQ1)

This section provides details of the data gathered, data analysis, and findings from each of the data sources used to answer RQ1; it also provides a discussion relating to RQ1 for Case A.

5.3.1 Repertory Grid: Primary Source of Evidence for RQ1

This is divided into three subsections: data collection, analysis, and findings from rep grid interviews.

5.3.1.1 Data Collection

12 rep grid interviews were conducted; the interviewees were selected to cover the full range of the various portfolios of services offered and the industry segments in which they operate. A mix of people at different levels within the organization (Manager, Senior Manager, Director, Senior Director, Assistant Vice President), who are involved in delivering innovative solutions/services to clients, was chosen – see Table 5.1. The time taken per interview averaged 70mins, giving a total of 14hrs of interviews. All were recorded and transcribed, resulting in 183pp. of transcript. A total of 140 constructs were elicited from the 12 interviews.

Table 5.1: Interview details

Interviewee No.	Designation	Industry Segment	Service line
1	Senior Manager – Consulting	Healthcare, Life Sciences, Manufacturing and Logistics	Software Solutions and Related Services (CRM)
2	Senior Client Director	Manufacturing and Logistics	Business, Process, Operations and IT Consulting
3	Senior Consulting Director	Manufacturing and Logistics	Business, Process, Operations and IT Consulting
4	Senior Director - Consulting	Across industries	Engineering Solutions
5	Director - Consulting	Banking, Financial Services, & Insurance	Business, Process, Operations and IT Consulting
6	Senior Manager – Consulting	Banking, Financial Services, & Insurance	Application Development and Systems Integration
7	Senior Manager – Consulting	Across industries	Digital Technologies Services, including Social, Mobile, Analytics and Cloud-based Technologies
8	Manager – Consulting	Across industries	IT IS, Enterprise Information Management
9	Director – Consulting	Retail	Business, Process, Operations and IT Consulting
10	Director – Consulting	Consumer Goods	Business, Process, Operations and IT Consulting, Software Solutions and Related Services
11	Assistant Vice President – Consulting	Retail, Travel and Hospitality, Consumer Goods, Communications	Business, Process, Operations and IT Consulting Application Development and Systems Integration Software Solutions and Related Services
12	Senior Manager – Consulting	Across industries	Engineering Solutions

5.3.1.2 Data Analysis

As described in Chapter 4 (Section 4.4), three broad steps of analysis were undertaken; here, an example of selected constructs with similar meaning is used to explain how this was done:

Step 1: Coding the elicited constructs and grouping them

Interviewee 6, Senior Manager – Consulting, said,

Sample Quote	Code
"It is a conducive physical environment, which also includes how the buildings are laid out and all those things" (Construct specified was "conducive physical environment")	*Int6-6*

Interviewee 8, Manager Consulting, said,

Sample quote	Code
"In the building itself within the organization...there's a lot of positive energy......so there are lots of little things like this which used to make people feel positive .....so that encourages positive thinking, people feeling energetic and that in turn drives innovation.....because you are more positive in your outlook and you are happy in that atmosphere you tend to be more innovative and start thinking outside of routine." (Construct specified was "Encouraging positive work environment")	*Int8-9*

Interviewee 11, Assistant Vice President – Consulting, said,

Sample quote	Code
"I think the way these two organizations are similar....now this is going to be about the environment, is that the way the organizations create a physical space that enables the culture of innovation ...and also it nurtures a certain kind of behaviour as well because of the space that it provides for innovation to take place ......I think it is [about] the organizations that create a physical space in a building where they invite the eco-system of innovators to meet, ideate ideas, you know to discuss disruptions in the industry, etc. Those spaces are very important. You let people out of the normal." (Construct specified was "Create physical space in a building and supporting technology to ideate")	*Int11-9*

Interviewee 12, Senior Manager – Consulting, said,

Sample quote	Code
"You provide a relaxed physical environment to think" (Construct specified was "Physical Environment")	*Int12-3*

Table 5.2 provides a summary: the four constructs from individual interviews have been categorized into 'Physical Environment'.

Table 5.2: Deriving meta-constructs by categorizing constructs

Meta construct/ Category	Constructs from individual interviews	Int No.
Physical environment	Conducive physical environment	Interview 6
	Encouraging positive work environment (incl. physical and events)	Interview 8
	Create physical space in a building and supporting technology to ideate	Interview 11
	Physical Environment	Interview 12

This categorization was undertaken by researchers A and B[46] in parallel.

Step 2: Drawing up the reliability table

A reliability table (Table 5.3) was drawn up with the categorization of constructs done by researchers A and B. Researcher A came up with 33 meta-constructs or categories, Researcher B with 20. Based on the two researchers' categorization of constructs, the inter-rater reliability[47] was calculated and was around 45% – as indicated by Miles and Huberman (1994) to be found at this stage.

Table 5.3: Drawing up a table to derive reliability

Researcher B → / Researcher A ↓	Innovation at all levels	Rewarding innovation	Dedicated Teams and Funds	Explore externally for innovation opportunities
Innovation focus at all levels	Emphasis on innovation at all levels Direction at the ground level Leadership on the ground Managers' support in enabling people for innovation			
Rewards and recognition		Rewards Reward and recognition programme for innovation Rewards/payoff Policies (Rewards and Recognition) related to Innovation Processes to incubate innovation (incl. rewards) Incentives to employees Rewards and recognition Rewarding and recognizing people		
Dedicated innovation office with necessary investment mandate			Dedicated resources to focus on innovation to support execution Investment Vehicle to Fund Innovation Define team/role/office for innovation (e.g. innovation officer) Higher percentage of investment for innovation Invest to create new business avenues Dedicated division to manage innovation (incl. funding) Cash funding for innovations Investment pot/funding to harness innovation as it comes along Organization structure aligned to innovation arm of an organization	
External partnerships				Push-the-boundary supply chain (e.g. partners) Receptive to outside-in ideas Innovation eco-system Collaboration with external entities Collaborative innovation (work with partners, suppliers, stakeholders etc.) Use of 3rd parties for their strengths Driving innovation from external sources Collaborative partnering with external organizations
Focus on identifying value of innovation				Expand in marketplace by creating superior products and competitive pricing
Acquire to build innovation capabilities				Acquire start-ups for innovation

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[46] *Researcher A is the author of this thesis. Researcher B (who already has a doctorate in digital image processing technology) was interested in the research on innovation culture and agreed to support Researcher A.*
[47] *Number of constructs agreed on as a percentage of all the constructs in the table*

Step 3: Reliability checks

Based on further discussions, a list of 32 was agreed between Researchers A and B. As suggested by Jankowicz (2003), all of the constructs were re-coded into one of the enhanced construct categories, again working independently and in parallel. The outcome produced a second reliability table that led to an IRR of close to 95%, demonstrating a sufficient level of reliability as suggested by Jankowicz (2003).

5.3.1.3 Summary of Findings

As discussed in Chapter 4 (Section 4.4.2), to answer RQ1, the analysis was based on a consideration of both frequency of mention and variability[48], i.e., for a factor to be most important, the frequency of its occurrence should be high and the variability should also be high. Since nine out of 32 meta-constructs were only mentioned twice, these did not meet the minimum frequency of 25% (Goffin et al., 2010) and were eliminated. Further, 18 constructs were categorized into the 'Miscellaneous' meta-construct category, i.e., the constructs that could not be grouped into two or more constructs to form a meta-construct. This is slightly more than the expected 10% of the total number of constructs. This could be possibly because of the subcultures existing within the organization as members were drawn from different groups and there is a possibility that the constructs specified could be reflecting some of the unique characteristics of the subgroups to which they belonged (as discussed in Chapter 2, Section 2.3). The remaining 22 meta-constructs (of the 32) were included for further variability analysis.

Table 5.4 provides a summary of the variability and frequency of all the meta-constructs derived from the analysis of rep grids. The descriptions or definitions of the meta-constructs/categories embody the essence of the constructs included under each meta-construct; e.g. the definition of 'Rewarding Innovation' (based on discussions with

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[48] *It is the percentage of the total spread of ratings. This is an indicator that differentiates most strongly between the elements (the six companies used for the interview as discussed in Chapter 4, Section 4.4.2) of the grid. So, the higher the variability, the higher is the importance of the factor (Goffin et al., 2010).*

Researcher B) included the essence of what was mentioned in the form of constructs by various interviewees (interviewee 1 mentioned 'rewards', interviewee 3 mentioned 'rewards/payoff', interviewee 5 mentioned 'incentives to employees', etc.). Therefore, based on all the relevant constructs in interviews 1, 3, 4, 5, 6, 9, 10, and 12, 'Rewarding Innovation' was defined as: *"This refers to an organization having a formal rewards and recognition programme, which is tightly mapped to the innovation value generated/targets, to ensure that innovation is appropriately rewarded."* Definitions of all the meta-constructs were derived and included in Table 5.4 for readers' reference under Meta-construct Definition'. The meta-constructs shaded grey in Table 5.4 have been selected as the key factors of innovation culture as perceived by managers; it should be noted that in Case A, 13 of those factors were found to be key.

Table 5.4: Results from Rep Grid data analysis

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Resp	Meta construct Variability	Key Factor?
1	Innovation focus at all levels	NKFA2	Emphasis on innovation at all levels	Interview 1	This refers to an organization having people at all levels fully focused on innovation	*"Imagine you divide each organization into small pyramids and they make up a big organizational pyramid.....if the message [requiring all levels to participate] is not passed on to the lowest level of the smallest pyramid, then the emphasis and awareness will not be there"* (Interview 1) *"They care about the results of their business......this is a partnership, a co-op..... every person is an owner of the business"* (Interview 9)	5	42%	6.60	No
			Direction at the ground level	Interview 3						
			Leadership on the ground	Interview 12						
			Managers' support in enabling people for innovation	Interview 6						
			Highly engaged employees	Interview 9						
2	Rewarding innovation	KFA2	Rewards	Interview 1	This refers to an organization having a formal rewards and recognition programme, which is tightly mapped to the innovation value generated/targets, to ensure that innovation is appropriately rewarded	*"If there is a direct reward for me, for example if I innovate and create a new product and if I get a commission out of that one, I would be more inclined to innovate"* (Interview 5) *"If you reward and recognize people well, people will put more efforts when times are difficult"* (Interview 10)	8	67%	8.99	Yes
			Reward and recognition programme for innovation	Interview 9						
			Rewards/payoff	Interview 3						
			Policies (Rewards and Recognition) related to Innovation	Interview 12						
			Processes to incubate innovation (incl. rewards)	Interview 4						
			Incentives to employees	Interview 5						
			Rewards and recognition	Interview 6						
			Rewarding and recognizing people	Interview 10						
3	Dedicated innovation office	KFA6	Dedicated resources to focus on innovation to support execution	Interview 1	This refers to an organization having a dedicated innovation team, which defines and manages the innovation processes i.e., it is a custodian of innovation best practice	*".....there is a defined role for innovation so, there was a position a role that was in charge for innovation for that organization"* (Interview 9) *"....here are divisions that will specifically go to clients looking for problem that they have and which can be solved in an innovative way and then they feed back into this pipeline"* (Interview 8)	6	50%	9.26	Yes
			Investment Vehicle to Fund Innovation	Interview 2						
			Define team/role/office for innovation (e.g. innovation officer)	Interview 9						
			Dedicated division to manage innovation (incl. funding)	Interview 5						
			Investment pot/funding to harness innovation as it comes along	Interview 11						
			Organization structure aligned to innovation arm of an organization	Interview 8						
4	Dedicated time for innovation	KFA9	Dedicated time allocated for innovation	Interview 6	This refers to individuals being given time to reflect on consulting engagements being delivered (or delivered) to develop innovative ideas	*"We work in an organization working 8 to 10 hours a day....we normally work extended hours....I don't have the bandwidth.....unless the things come from inside you, that you want to do it, there is no incentive or the bandwidth to do something"* (Interview 3)	4	33%	9.66	Yes
			Bandwidth of people to innovate	Interview 3						
			Investment of time in innovations	Interview 10						
			Better utilisation of capacity through productivity measurement	Interview 12						
5	Leadership focused on innovation	NKFA1	Leadership is focused on innovation more	Interview 5	This refers to the focus that leadership accords to innovation in terms of providing the necessary guidance and support to teams on the ground	*"..so it is the leadership that is focused on innovation more versus leadership that is not focused on innovation"* (Interview 5) *"For me, this is one of the key principles which drives innovation, so, how receptive is your leadership, can they see the future, changes, trends, and see how we need to change something to do something different"* (Interview 6)	5	42%	7.55	No
			Leadership proactively talking about innovation	Interview 3						
			Leadership's vision towards innovation	Interview 6						
			Innovation vision driven by leaders (CXO level)	Interview 11						
			Organization promoting innovation	Interview 8						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Resp	Meta construct Variability	Key Factor?
6	Explore externally for innovation opportunities	KFA4	Push-the-boundary supply chain (e.g. partners)	Interview 2	This refers to exploring opportunities of innovation through engagement with external organizations. This could include (a) investing in utilising innovation that exists outside your own organization to further foster and develop innovation internally, (b) acquiring other companies, investing and helping start-ups, buying new companies and (c) building relations with 3rd parties to increase innovation	" 'networking' based innovation is important because innovation is an expensive thing and we can spread our investment, leverage innovations or inventions by other companies" (Interview 5) "..whether it's from customers, consultants, or the industry……that [getting ideas or innovation from outside] breeds a whole second level of innovation that gets people thinking even more" (Interview 9)	7	58%	8.96	Yes
			Innovation eco-system	Interview 4						
			Collaboration with external entities	Interview 5						
			Collaborative innovation (work with partners, suppliers, stakeholders etc.)	Interview 7						
			Use of 3rd parties for their strengths	Interview 8						
			Driving innovation from external sources	Interview 9						
			Collaborative partnering with external organizations (e.g. smaller potential niche players, academia)	Interview 11						
7	Physical environment	KFA8	Conducive physical environment	Interview 6	This refers to employees being provided with the right physical space and facilities that are conducive to innovation	"It is a conducive physical environment, which also includes how the buildings are laid out and all those things" (interview 6) "In the building itself within the organization…there's a lot positive energy…..so that encourages positive thinking, people feeling energetic and that in turn drives innovation" (interview 8)	4	33%	9.89	Yes
			Encouraging positive work environment (incl. physical and events)	Interview 8						
			Create physical space in a building and supporting technology to ideate	Interview 11						
			Physical Environment	Interview 12						
8	Strong growth focus	NKFA11	Exceeding my financial goals	Interview 7	This refers to an organization setting themselves high growth targets, which can in turn drive internal teams to come up with innovative ideas to achieve those growth targets	"You don't have strong growth targets, you're not going to invest in innovation, you're gonna invest in optimization, which is just different" (Interview 9) "My employees have a psychological contract with my organization…that [growth ambition] consciously or unconsciously helps my top line and bottom line, creates an environment of innovation, which people want to be associated with" (Interview 7)	2	17%	NA*	No
			Business has strong growth objectives	Interview 9						
9	Best Talent	NKFA4	Higher proportion of people who like difference/variation vs. routine	Interview 2	This refers to having a workforce that is highly capable, creative and self-driven	"If you go work with some creative places, they don't want to follow the norm, it is more of the repetitiveness…some people enjoy the predictability of repetitiveness versus some people hate the monotony of repetitiveness" (Interview 10) "In my mind, for the right culture of innovation, you need to have the right set of people for it…..people should think out of the box, that's where innovation comes in, if everybody does a 9 to 5 job then it becomes difficult" (Interview 6)	4	33%	5.68	No
			People skills/capability	Interview 6						
			Attract best talent to be associated with the organization	Interview 7						
			Desire to be the best (ref. have the best people)	Interview 10						
10	Enabling people to build knowledge to Innovate	NKFA9	Access to resources (information, financial, product licences, etc.)	Interview 12	This refers to an environment where consultants are supported through formal learning/training	"So one other thing is that very important for innovation is training and development...actual classroom training the more you those attend more you start to see different ways of seeing things" (Interview 8) "Individual people training….so that's people training, personal development, my own development" (Interview 10)	3	25%	5.38	No
			External training and events (e.g., conferences)	Interview 8						
			Personal development	Interview 10						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Resp	Meta construct Variability	Key Factor?
11	Clear articulation and communication of organizational strategy	NKFA7	Clear articulation of company's vision/mission/strategy to employees at all levels	Interview 9	This refers to an organization having clarity on their future strategic focus and communicating it clearly to the entire organization	*"So if you are trying to build innovation, you want to build innovation to support your strategy or your mission. If that is not clear and apparent, then innovation can be less effective. I guess communicating to the employees is the important part."* (Interview 9)	3	25%	6.14	No
			Transparent communication of leadership's vision	Interview 4						
			Strategic focus	Interview 12						
12	Innovation Execution Capability	KFA1	Ease of conversion of an idea into innovation (monitoring and funding)	Interview 3	This refers to organizations building the ability to drive successful innovation implementations and change, i.e., having the necessary knowledge, resources, processes and capability to deliver innovation	*"It is about converting an idea into an innovation. You can say the ease of conversion of an idea into innovation"* (Interview 3) *"Even after having all those – rewards/tangible outcomes are defined, but then there is nobody to do the job, then it is not execution right?"* (Interview 1)	8	67%	9.67	Yes
			Execution of innovation	Interview 1						
			Ability to implement change	Interview 8						
			Idea generation and follow through to execution	Interview 9						
			Processes supporting Innovation	Interview 12						
			Acquire capabilities to drive innovation agenda	Interview 11						
			Processes to support innovation	Interview 6						
			Building capability to deliver services	Interview 4						
13	Internal communication	KFA13	Effective messaging to employees	Interview 1	This refers to regular and continual communication with the employees within the organization in terms of both activities of the organization outside and also inside	*"In my previous organization there was no defined messaging……or even if it was there, it has not reached me…….if there is messaging at all levels from senior management it is passed on well"* (Interview 1) *"It's knowledge about what your organization's doing, and in what directions the company is going in, what investments they are making, how are they keeping up with their competitors"* (Interview 10)	3	25%	10.39	Yes
			Effective PR on internal activities	Interview 8						
			Internal updates to employees	Interview 10						
14	Empowermemt	NKFA6	Empowerment to make decisions	Interview 4	This refers to an organization providing professionals the space and autonomy in their work environment without interference	*"See because, without empowering your team, you will kill the innovation thing"* (Interview 4)	3	25%	7.13	No
			Entrepreneurialism/empowerment of individuals	Interview 10						
			Flexibility offered to individuals to lead and think for themselves	Interview 8						
15	Organization promoting entrepreneurship	NKFA3	Small entrepreneurial ventures within the organization	Interview 4	This refers to an organization allowing employees to run innovation initiatives as their own personal business ventures	*"So, entrepreneurship….got an idea, drive it, lead it, execute, deliver it, everything, I mean, run it like pretty much your own baby within an organization"* (Interview 6)	5	33%	6.34	No
			Organization promoting entrepreneurship	Interview 5						
			People wanting to explore and pilot new areas	Interview 6						
			Invest to create new business avenues	Interview 7						
			Willingness to test and explore with customers innovations that are immature	Interview 8						
16	Supporting technology for innovation	KFA12	Policies to support innovation (work from home, use any device)	Interview 6	This refers to how organizations leverage technology to support their innovation initiatives	*"Looking on as the mobile worker type thing, do you have the right equipment to do your right job? Is that what makes you feel good by getting the right equipment, right tools to enable you to do the job"* (Interview 10) *"I think you actually foster better innovation environment and a more collaborative environment, more efficient environment if you allow people to bring in their own devices"* (Interview 11)	3	25%	10.54	Yes
			Right tools to enable you to do your job	Interview 10						
			Bring your own devices	Interview 11						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Resp	Meta construct Variability	Key Factor?
17	Driven to innovate due to external factors	KFA11	External (e.g. industry) push to innovate	Interview 2	This refers to an organization being forced to innovate due to factors external to them. Examples of factors could include clients, competition, business environment/regulatory, etc.	*"Industries which have the propensity or have an influence of technology...as the rate of pace of things......so, basically the industry in which you are will also drive your behaviour"* (Interview 2) *"So we focus on those things that tomorrow my end product should not impact the environment [an industry regulation]....that is where my product could meet whatever CSRs (Corporate Social Responsibility) I have* (Interview 7)	4	33%	8.59	Yes
			Need to differentiate because of business	Interview 3						
			Demanding lines of business (competition and demanding customers)	Interview 5						
			Improve and enhance my CSR targets	Interview 7						
18	Actively tracking market trends and aligning	NKFA8	Align organization to respond quickly to technology trends	Interview 4	This refers to an organization actively tracking market trends and aligning to market requirements/needs	*"The changes in technology, changes in trends...it is how you align your organization to respond to technology trends"* (Interview 4) *So, it is proactively creating opportunities with changing business, technology and society.....and reacting to change in business needs of the customers* (Interview 7)	3	25%	5.90	No
			Proactively create opportunities with changing business, technology and society	Interview 7						
			Adoption of new technology to support clients	Interview 10						
19	Knowledge sharing culture	NKFA12	Building sustainable capacity (incl. knowledge management)	Interview 4	This refers to a culture where knowledge is shared across the organization (between various functions, individuals, disciplines)	*"So, how much knowledge of whatever is there..........the more the knowledge is locked in peoples' head versus shared outside i.e. the rest of the organization"* (Interview 2)	2	17%	NA*	No
			Good knowledge sharing culture	Interview 2						
20	Client at the centre of innovation	KFA5	Client driven and responsive	Interview 3	This refers to an organization keeping the client at the centre of its innovation initiatives i.e., keeping the client at the centre of focus to develop innovative solutions based on their needs, problems/pain areas, industry need, etc.	*"....if you are going to invest in innovation, you are going to make sure it delivers an outcome that your business is modelled after, which is typically your customer"* (Interview 9) *"What my end customer wants from me is pretty much drives the business, at least in my mind. If they keep the end customer as their focus that will give what business model they need to create, how to generate business etc."* (Interview 7)	6	42%	9.54	Yes
			Strong understanding of your customer	Interview 9						
			Making innovation related commitments to clients	Interview 2						
			Focus is on end customer	Interview 6						
			Client Focus	Interview 12						
			Build/enhance trust with stakeholders	Interview 7						
21	Focus on generating more innovation-based revenues	NKFA13	Innovation drives results	Interview 9	This refers to an organization focusing on generating revenue purely based on innovative offerings	*"You increase in the market share because of the innovative service or product put out there that brought in new customers"* (Interview 9)	2	17%	NA*	No
			More successful innovations	Interview 5						
22	Teams and community	NKFA10	Seamless teamwork across the organization	Interview 8	This refers to teams or communities with focused goals within an organization working seamlessly to deliver innovation outcomes	*"I am talking about teaming, right?.....because you are part of the division you need services from the other division....you just work together seamlessly"* (Interview 8)	3	25%	4.57	No
			Ability to create community	Interview 9						
			More interactions with people	Interview 12						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Resp	Meta construct Variability	Key Factor?
23	External communication to the market	NKFA14	High level of external communication (to customers)	Interview 10	This refers to an organization's regular and continual communication/active engagement with the marketplace with an aim to build reputation and confidence over time	*"So its about externally , the behaviours, how they are presented externally...it's around a company, how the company communicates in a market place, can help to foster and drive innovation through an organization"* (Interview 11)	2	17%	NA*	No
			Company communicates to the market, behaviours follow	Interview 11						
24	Innovation is company's ethos	KFA3	Structured process	Interview 3	This refers to an organization living and breathing innovation by way of making changes to all processes to reflect and support innovation including constantly talking about innovation and looking for what's going to be the next big innovation they want to deliver to the market/client/industry	*"I think if you want a culture which is about innovation, you have to be continually feeding and asking for that type of thought, because if people aren't thinking about what could be different and what could be new by nature of the organization"* (Interview 9) *"So really, the more you talk about it, the more you give dedicated time, more focus and try and get more out of it....the more direction given from the leadership to the ground level line managers and to the larger organization...for example, every account has an innovation index, which they consider as a source of pride* (Interview 3)	7	58%	9.12	Yes
			Strive to be innovative	Interview 10						
			Focus on continuous innovation	Interview 5						
			Innovation in core product/service offering	Interview 9						
			Set goals for long term sustainability	Interview 7						
			Receptive to outside-in ideas	Interview 4						
			Building propensity to innovate	Interview 3						
25	Focus on identifying value of innovation	KFA10	Expand in marketplace by creating superior products and competitive pricing	Interview 7	This refers to organizations measuring the value generated (or realized) by organizations against the investments they make in innovation initiatives	*"They* [oganizations that track innovation] *will see how much innovation we are getting, are they really effective, how much value addition they bring to the organization, customer"* (Interview 1) *"....there are a lot of organizations that keep churning out IPs etc. But the amount of business they make is not significant"* (Interview 5)	4	33%	9.14	Yes
			Measurement of innovation	Interview 1						
			Impact of successful innovations	Interview 5						
			New products/capabilities to market	Interview 10						
26	Diversity	KFA7	People diversity in the organization (incl. culture, male/ female, ethnic)	Interview 8	This refers to an organization having a diverse group of people – diverse in various respects such as educational background, experience, ethnicity, gender, geographical location, etc. supporting their projects	*"So, if you have a very diverse, experiential, even global culture, you get a broader richer, set of innovation than if you were a very non-diverse organization"* (Interview 9) *"...talk about a young vibrant organization, where the average age is lower...so possibly a younger organization, for example my organization is known in the industry for being a young organization"* (Interview 3)	5	42%	9.67	Yes
			High level of diversity in the organization (age, sex, maturity, time in the organization)	Interview 9						
			Geographical location	Interview 5						
			Higher proportion of younger to older	Interview 2						
			Younger organization with energy	Interview 3						
27	Innovation targets in appraisals	NKFA15	Weighting of doing differently in KRAs	Interview 3	This refers to incorporating and tracking performance of innovation at an individual level through the appraisal system	*"Unless innovation is part of everybody's KRA, they will not even look into it, they may not contribute but at least they will challenge what is being thought about"* (Interview 5)	2	17%	NA*	No
			Innovation is part of KRA	Interview 5						
28	Allow experimentation	NKFA16	Presence of CoE or Labs	Interview 12	This refers to allowing people to experiment on various aspects of solutions in regard to solving problems for clients	*"An idea needs a place, people, etc. to try out"* (Interview 12)	2	17%	NA*	No
			If you fail it is okay	Interview 2						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Resp	Meta construct Variability	Key Factor?
29	Reinventing the business	NKFA5	Founding members' focus on future to see disruption and reimage the organization to stay relevant	Interview 11	This refers to organizations continually looking to refresh themselves in terms of their areas of focus in the marketplace and also the way they deliver work to clients	*"That is where they are creating opportunities, they are creating a niche for themselves, while these guys are reacting to maintain their league in the market"* (Interview 7)	3	25%	8.49	No
			Acquire start-ups for innovation	Interview 2						
			Reinvent myself as I grow	Interview 7						
30	Investments in innovation	NKFA17	Higher percentage of investment for innovation	Interview 5	This refers to an organization setting aside funds exlusively for innovation initiatives	*"It's clear that if you don't have money you can't give people the bandwidth to think about new things. It's either money to do the research, money to give up time to focus on projects taking new way from your day job"* (Interview 10)	2	17%	NA*	No
			Cash funding for innovations	Interview 10						
31	Desire to be the best	NKFA18	Desire to be a leader in the industry	Interview 7	This refers to an organization's desire to be a leader and always deliver something new/game changing to the market	*So, one area would be, how to create a world renowned organization, probably the desire, urge or vision to become a leading player, they want to be the leaders in their industry domain"* (Interview 7) *"There is focus on getting new products into the market...completely new ways of doing things...something that hasn't happened...it could be a new customer proposition"* (Interview 5)	2	17%	NA*	No
			Focus on game changing innovations	Interview 5						
32	Miscellaneous	NA*	Strategic thinking about the future	Interview 4	NA*	NA*	18	NA*	NA*	No
			A clear end to end plan to achieve strategic vision	Interview 8						
			Effective execution of all identified constructs	Interview 1						
			Open communication across people and sub divisions	Interview 8						
			Single decision-makers	Interview 10						
			Open free form thinking at pace	Interview 11						
			More structure to work	Interview 12						
			External (e.g. industry) push to innovate	Interview 2						
			Ease of access to leadership	Interview 12						
			Flexible corporate structure	Interview 2						
			Cross-functional exposure	Interview 10						
			High marketing spend to change perception	Interview 10						
			Leveraging innovations across organization	Interview 1						
			Team to look at effective measurement	Interview 1						
			Cross-industry innovation	Interview 11						
			Focus on innovation during recruitment	Interview 6						
			People's ability to think differently	Interview 6						
			Focus on delivering tangible outputs/offerings	Interview 1						

Key

KFA	Key Factors for Case A
NKFA	Non Key Factors for Case A

The next two sections provide details of the analysis of documents and observations respectively as supporting evidence for the key factors of innovation culture.

5.3.2 Documents: Supporting Source of Evidence for RQ1

5.3.2.1 Data Collection

Documents both from the public domain and accessed internally within the organization were collected for review and analysis. A total of 797 pages were included in the analysis Table 5.5. The data collection effort was fully focused on aspects that are relevant and central to the study (Yin, 2009), i.e., the key factors that were identified as important for innovation culture. Each of the documents listed in the table had a different purpose, which meant that they would not lend themselves easily to analysis (Yin, 2009). Therefore, caution was exercised in reviewing the documents to ensure that understanding of the context was maintained while the coding was undertaken. How the coding was undertaken is explained next.

Table 5.5: Documents analyzed for Case A

No. of pages	Document	Characteristics	Comments
94	Client proposal -1	Proposal to an Energy and Utilities firm	Reviewed to understand what sales commitments are made to customers and whether or not any innovation-related aspects are covered Not available in public domain
158	Client proposal -2	Proposal to a Manufacturing and Logistics firm	Reviewed to understand what sales commitments are made to customers and whether or not any innovation-related aspects are covered Not available in public domain
1 page each	Emails "Technology has become a clear differentiator and we are excited about it" ; Women Empowerment Europe Winter 2014 Newsletter; Immersive experience Lab of Insurance; Information regarding Mini-innovation summit 2014; Case Company Jam 2015 - Congratulations Winners; Case Company Innovation Awards	Some of the sampled emails from participants post Focus Group (FG) discussion	These have been provided as supporting evidence as part of focus group discussions Not available in public domain
34	Associate Briefing Managed Innovation@Case Company 2014	Details of briefing to employees on innovation, processes, index and top stories of awards	Not available in public domain
136	Annual report – 2012	Pdf annual report	Available in public domain
151	Annual report – 2013	Pdf annual report	Available in public domain
148	Annual report – 2014	Pdf annual report	Available in public domain
22	Others – A story of their journey on innovation	Provides details of full innovation journey of the case company	Available in public domain
13	Expenses_Policy_IRL_17_Dec_12	Details of expenses	Not available in public domain
2	Equal opportunities policy	Details of equal opportunities	Not available in public domain
7	Work from home policy	Work from home policy	Not available in public domain
30	FW "Competitor" Earnings highlights for the first quarter ended June 30 2015	Pdf report - sharing competitor's activities/intelligence	Not available in public domain
1	"Intelligence Today"	Internal email circulated to all employees to make them aware of the competition, trends, other activities in the industry	Not available in public domain

5.3.2.2 Data Analysis

The analysis/coding of documents followed two simple steps: descriptive coding and summarizing data. The coding frame (see Appendix 5-1) developed as part of the earlier analyses (i.e., the codes from rep grid analysis) was used as a template for document data analysis. However, care was taken to make sure the warning *"Be Careful: if you go looking for something, you'll probably find it"* was taken seriously by way of reading the documents multiple times (Saldaña, 2013: p. 89).

Step 1: Descriptive Coding

Table 5.6 presents an example of a quote that was coded that relates to 'Rewarding Innovation' (KFA2, an important factor of innovation culture).

Table 5.6: Code mapping to key factor of innovation culture

No.	Sample document quotes	Key factor code	Code Name	Notes/analysis	Reference Document
1	*"Over the years, we have also instituted awards and rewards like "Best Idea Champion of the Year" and "Best Innovation Champion of the Year"*	KFA2	Rewarding Innovation	There is documentary evidence that rewards do exist and there is an understanding of innovation rewards	A story on Case A's journey of innovation
2	*"Encouraging Behaviours: This was achieved by defining carefully designed Rewards and Recognition programmes... best rated ideas, best approved ideas, best implemented ideas... based on innovation index and value of innovation impact"*	KFA2	Rewarding Innovation	Individual – best approved...appreciated by clients were rewarded. Highest innovation progress based on innovation index was rewarded	A story on Case A's journey of innovation

Step 2: Summarizing documentary evidence

A summary of the analysis of documents for KFA2 was produced at this stage (for confidentiality reasons, the full coding details are not available for review). For example, in this case it was noted that there is documented evidence that rewarding innovation is a practice within the organization. At least seven references across the various documents indicated the importance of rewarding innovation. Thus, the document analysis provided supporting evidence to bolster the evidence from rep grid analysis. The full details of the amount of supporting evidence are provided in the next subsection.

5.3.2.3 Summary of Findings

Each factor of innovation culture has had varied levels of supporting evidence collated from the documents analyzed (see Table 5.7). The frequency of occurrence indicates the

level of importance accorded by Case A to the factors of innovation (factors have been shaded where evidence is available); this of course was limited by the amount of documentation available to the researcher for review.

Table 5.7: Level of documentary evidence supporting RQ1

No.	Code	Code Name (Important factor of innovation culture)	Documentary Evidence	Frequency of Occurrence
1	KFA1	Innovation execution capability	Yes	6
2	KFA2	Rewarding innovation	Yes	7
3	KFA3	Innovation is company's ethos	Yes	10
4	KFA4	Explore externally for innovation opportunities	Yes	3
5	KFA5	Client at the centre of innovation	Yes	13
6	KFA6	Dedicated innovation office	Yes	4
7	KFA7	Diversity	Yes	4
8	KFA8	Physical environment	None	0
9	KFA9	Dedicated time for innovation	None	0
10	KFA10	Focus on identifying value of innovations	Yes	5
11	KFA11	Driven to innovate due to external factors	Yes	2
12	KFA12	Supporting technology for innovation	None	0
13	KFA13	Internal communication	Yes	3

Thus, documents have been used as a source of supporting evidence in regard to key factors of innovation culture to answer RQ1. Next, supporting evidence in the form of observations is discussed.

5.3.3   Observations: Supporting Source of Evidence for RQ1

5.3.3.1 Data Collection

In the case of observations, given the time and resource constraints, observational data were written down (as field notes) while visits to the case company (Yin, 2009) were made for the purpose of interviews and focus group discussion. Two London locations of the case company have been included in observations. Various aspects such as books, attractive captions displayed in the reception area, layout of the work spaces, kitchen area/cafeteria areas, meeting rooms, people gatherings, general mood of the people, and the area around hardware/software support services have been observed.

5.3.3.2 Data Analysis

In line with the analysis of documents, the analysis undertaken of field notes followed two simple steps: descriptive coding and summarizing data. The coding frame in Appendix 5-1, developed as part of the earlier analysis, was used as a template.

Step 1: Descriptive Coding

Table 5.8 presents examples of coding quotes from field observations that relate to 'Innovation is company's ethos' (supporting evidence) and 'Physical Environment' (supporting evidence). Refer to Appendix 5-2 for coding details.

Table 5.8: Code mapping to key factor of innovation culture

No.	Relevant statement extract from field notes	Key Factor Code	Code Name	Notes/ analysis
1	The reception area has the company logo with a slogan on it *"Using our capabilities to drive improvements and innovations. "* Company values such as *"Change Begins with you"*, *"If you don't see a path, make a new one"* and *"You can wait for opportunities, Or you can create them"* are displayed on the walls all over the office	KFA3	Innovation is company's ethos	Supporting evidence, but only very limited
2	*"Meeting rooms are always full*, even after office hours. Clients seem to be coming to this office for meetings" "The *kitchen area* is broad and spacious and people seem to sit around and chat a lot, *meetings are being held in this area*. So, this area has a dual purpose. *There are whiteboards in the kitchen area* "	KFA8	Physical Environment	There is supporting evidence that there are spaces created for people to think (whiteboards in kitchen area), but meetings in kitchen area is an indication of lack of meeting room spaces as well (supporting statements made by focus group members regarding the lack of meeting room space)

Step 2: Summarizing evidence from observations

Some pictures taken of people who have received innovation awards were displayed on the walls, which is a form of evidence that innovation rewards exist. In other cases, for example 'Physical Layout', although there was evidence that there were whiteboards in the kitchen area for discussions, it appeared that there was a lack of office room space for meetings and hence the kitchen area was being used as a makeshift meeting room. From the lack of physical spaces conducive to innovation, it was evident that employees needed a friendly physical environment. Thus, observational analysis provided some supporting evidence to be evaluated in conjunction with the evidence from rep grids, focus groups, and document analysis, but has been largely limited. Observations could not be gathered as concrete evidence, especially with factors such as 'KFA13–Internal communication', KFA9–Dedicated time for innovation', etc. The available evidence is presented in Table 5.9.

Table 5.9: Summary of field notes and evidence from observations

No.	Code	Code Name	Summary of observations from field notes	Evidence from observations
1	KFA1	Innovation execution capability	None	No
2	KFA2	Rewarding innovation	Picture of award winners displayed on the walls, but not much evidence of innovation awards and activity seen	Yes, but limited supporting evidence
3	KFA3	Innovation is company's ethos	It appeared that the company is encouraging creative thinking and thought processes through the display of innovation journals, encouraging quotes, pictures of innovation rewards, etc.but again there has been very little of it observed. However, from emails it was evident that innovation labs, forums and conferences are quite common in different geographies (India and the USA)	Yes, but limited supporting evidence
4	KFA4	Explore externally for innovation opportunities	None	None
5	KFA5	Client at the centre of innovation	None	None
6	KFA6	Dedicated innovation office	None	None
7	KFA7	Diversity	Many of the people observed in the two London offices seemed to be from India although a good number of local people were found (understood from their accent). Further, there were more men (80% observed) than women (20%). Although this could be a skewed view given the time of observations but both locations presented with a similar kind of view	Yes, but limited supporting evidence
8	KFA8	Physical environment	Some good aspects of the environment have been observed. There are pod areas for employees to attend to calls, relax and think as well. However, in general the physical environment did not seem to be very friendly given the difficulty in finding some basic facilities such as rooms (kitchen/cafeteria areas being used for meetings/discussions). Either way, the evidence suggested that the employees needed a good physical environment to support them.	Yes, but limited supporting evidence
9	KFA9	Dedicated time for innovation	None	None
10	KFA10	Focus on identifying value of innovations	None	None
11	KFA11	Driven to innovate due to external factors	None	None
12	KFA12	Supporting technology for innovation	It was observed that the company was providing only basic necessities - laptops. No special equipment or gadgets were observed. This is indicative of the need for a policy that can support providing employees technology that can support their innovation endeavours	Yes, but limited supporting evidence
13	KFA13	Internal communication	None	No

5.3.3.3 Summary of Findings

Each factor of innovation culture has had varied levels of supporting evidence collated from the observational field notes analyzed. But the overall level of support gathered from observational evidence is low and limited to basic observations, including building layout and facilities, general mood, and activity in the buildings. Thus, very limited observations have been used as another source of supporting evidence in regard to key factors of innovation culture to answer RQ1. The next section provides a discussion on the key factors of innovation culture for Case A with details of supporting evidence gathered from documents and observations.

5.3.4   Discussion

Out of a total of 31 factors (#32 was 'Miscellaneous' and excluded), 13 have been identified as important based on the rep grid interviews, documents, and observations.

This section discusses the important factors in the context of the organization, considering the evidence that is available from documents and observations (see Figure 5.1). Please note that the discussion is only on the key factors, the definitions of the non-key factors for Case A are available in Table 5.4.
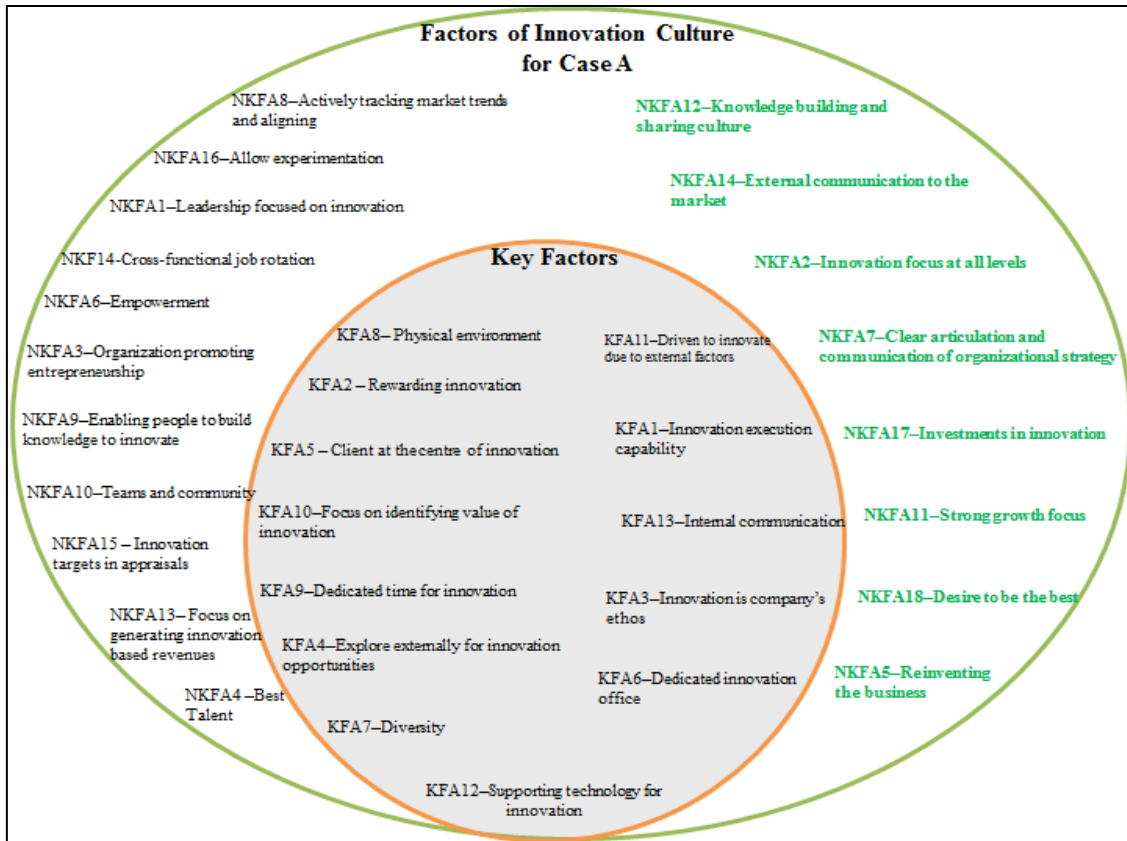
Figure 5.1: Factors of innovation culture for Case A (Key factors are shaded grey)

'KFA1–Innovation Execution Capability'. In the context of PSF industry, clients are looking for help with execution and not just for a set of recommendations (O'Mahoney 2011). One interviewee said, *"It is about converting an idea into an innovation. You can say the ease of conversion of an idea into innovation"* (Consulting Director, Manufacturing and Logistics). Documentary evidence shows that Case A, for example, has looked at: (a) committing and delivering innovative solution to clients; (b) setting up "XYZ Labs" dedicated to developing technology-based incubation to enable co-innovation with clients; (c) making investments in competency centres to learn from the experience of working with clients, etc. So, the key finding is that PSFs need to focus

on developing capabilities to execute their recommendations and demonstrate that they actually work.

'KFA2–Rewarding innovation'. Interviewees stated the importance of how rewards are to be closely tied to the value of innovation generated. *"If the payoff for coming up with a brilliant idea is £10,000, I will prioritise"* (Senior Consulting Director, Manufacturing and Logistics). *"If there is a direct reward for me… I would be more inclined to innovate"* (Consulting Director, Banking, Financial Services). Documentary evidence shows that the case organization made a conscious effort to define rewards and recognition, i.e., they invested part of their profits above the x% to y% operating margin level on funding innovation rewards. An example: £X,000 that was distributed to the top 2 awardees in one of their innovation competitions at "CaseA_Innovation_Summit_2015." So, the key finding is that, for PSFs it is important that rewards are proportionate to the value of innovation consultants generate through their innovative ideas.

'KFA3–Innovation is company's ethos'. Clients are looking for PSFs that are inherently innovative in all aspects of their organizational life (Smets et al., 2011). One interviewee said, *"I think if you want a culture that is about innovation, you have to be continually feeding and asking for that type of thought"* (Consulting Director, Retail). Documentary evidence suggests that many facets of Case A's organizational life are focused on innovation, starting from the investments they have made in setting up a dedicated innovation office (discussed as part of KFA6), recruiting the right set of people, training champions, setting up certifying mechanisms for innovation champions, to organizing Hackathons (events organized with clients for idea generation), to internal publications of innovations, to innovation fairs, roadshows, and annual innovation summits. So, the key finding is that PSFs can build a culture of innovation by focusing on innovation in many areas of organizational life, such as recruitment, innovation events, leadership support, internal processes, etc.

'KFA4–Explore externally for innovation'. With clients demanding innovative solutions, PSFs are looking outside their organizational boundaries to partner with other PSFs, educational institutions, research organizations to develop end-to-end solutions

(O'Mahoney, 2011). *"Whether it's from customers, consultants, or the industry, that* [getting ideas/innovation from outside] *breeds a whole second level of innovation that gets people thinking even more"* (Consulting Director, Retail). *"If you don't have an eco-system* [of partners]*, just internal thinking will not bring in innovation"* (Senior Consulting Director, Engineering Solutions). Documentary evidence shows that Case A pursues joint ventures and strategic alliances as vehicles to rapidly build service offerings and capabilities to respond to market needs. For example, in 2013, they completed the acquisition of a group of companies, to expand their local presence in PQR and XYZ countries and deepen their expertise in enterprise application services and high-end testing consulting. So, the key finding is that PSFs are reaching out externally for different sources of innovation to support their go-to-market strategy.

'KFA5–Client at the centre of innovation'. Innovation has to be based on solving client problems or improve areas that benefit clients (Ciumara, 2011; O'Mahoney, 2011). *"What my end customer wants from me is pretty much what drives the business…that will give what business model…to create…to generate business etc."* (Senior Consulting Manager, Infrastructure Services). Documentary evidence shows that Case A is client-focused. For example, they set up strong long-term strategic relationships with clients to develop innovative solutions to solve real world business problems, and also take their clients on lab visits to get them to experience first-hand the solutions/prototypes. So, the key finding is that PSFs create a culture of innovation by developing innovative solutions around clients' business critical problems.

'KFA6–Dedicated innovation office'. One of the key challenges of PSFs is time, which for them is equal to growth (O'Mahoney, 2011; Smets et al., 2011). A dedicated innovation office[49] is created to support consultants in their engagements with clients. Reflecting on its importance, one interviewee said, *"Here are divisions* [innovation office] *that will specifically go to clients looking for problems…which can be solved in an innovative way"* (Consulting Manager, IT Services). Documentary evidence shows

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[49] *A dedicated innovation office is not the same as Research and Development (R&D) department; on the contrary, such an office supports front-line consultants with taking their ideas (generated outside their own function) from inception stages to implementation and commercialization.*

that Case A has set up a core team called the "CaseA Innovation Group." Given that most of the consultants are based at client locations, this group supports consultants through the process of developing their ideas into solutions to take such solutions to clients and also provide support through implementation. The dedicated office also provides guidelines for innovation, best practices/templates, and a process to support the implementation of innovation. So, the key finding is that PSFs can have a dedicated group with a focus of supporting consultants with their innovation initiatives.

'KFA7–Diversity'. One of the key factors that support innovation in PSFs is Diversity (Ernst & Young, 2010). One interviewee said, "*So, if you have a very diverse, experiential, even global culture, you get a broader richer, set of innovation than if you were a very non-diverse organization*" and that diversity relates to "*age, sex, geographical location, religion, I mean literally diversity across several factors: experience, maturity in career…time in that organization*" (Consulting Director, Retail). Documentary evidence shows that there are women diversity and wellness programmes, and people networks that encourage diversity; however, there is limited evidence of these in recruitment practices and also in the way diversity is incorporated into consulting teams. While diversity could be an area for improvement, it certainly is an area the organization is committed to developing. The key finding is that, broadly, diversity of people in an organization creates a culture that is supportive of innovation.

'KFA8–Physical environment'. Although consultants are mostly client location-based, for Case A physical environment is important for innovation. One interviewee said, "*It is a conducive physical environment, which also includes how the buildings are laid out*" (Senior Consulting Manager, Banking and Financial Services). While there is no evidence from available documents, observational evidence is both positive and negative. A few good aspects of the environment, such as pod areas for employees to attend to calls, relax and think, have been observed. However, the physical environment did not seem to be very friendly, given the difficulty in finding basic meeting room facilities (kitchen/cafeteria areas being used for meetings/discussions). Therefore, the evidence shows that both from the want of and from experiencing the benefits of a good physical environment, the consulting managers suggested its need to support them in their

pursuit of innovation initiatives. So, the key finding is that for PSFs an environment that is conducive to innovation is necessary.

'KFA9–Dedicated time for innovation'. The consultants are mostly client site-based and work with their clients on a daily basis, so they have challenges around allocating time to develop specific innovation initiatives (Ross, 2015). *"We work…8 to 10 hours a day…extended hours, I don't have the bandwidth…there is no incentive* [to innovate]*"* (Senior Consulting Director, Manufacturing and Logistics). No documentary or observational evidence is available. The key finding is that as consultants are client-facing and have an understanding of client problems, they would need time to reflect on what more can be done for the client, and what new, innovative ideas can be developed to add value to the client above and beyond the current contractual commitments.

'KFA10–Focus on identifying value of innovation'. The different forms innovation takes can lead to different ways of measuring innovation. The nature of what innovation is in PSFs[50] can lead to a lack of clarity in measurement, and consequently the inability to track the return on investment made on innovation. Emphasizing the use of right metrics for measuring innovation value, one interviewee said, *"There are a lot of organizations that keep churning out IPs etc. But the amount of business they make is not significant"* (Consulting Director, Banking and Financial Services). There is documentary evidence suggesting that Case A has an exclusive focus on measuring innovation value. They have developed an 'innovation index', a scorecard to measure innovation. The scorecard measures 14 metrics of innovation, of which the value of innovation has 80% weighting. The key finding is that PSFs need to focus on measuring the value of innovation generated to understand the impact of the investments they make on innovation endeavours.

'KFA11–Driven to innovate due to external factors'. Case A works with clients from different industries. Talking about the pressure from external forces, such as industry dynamics, one interviewee said, *"Industries which have the propensity or have*

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[50] *In PSFs, innovation can take many forms: new products and services, incremental improvements to existing products and services, solving client problems, and thought leadership (O'Mahoney, 2011)*

an influence of technology...as the rate of pace of things [e.g. banking has a unique set of customer security challenges]…*so, basically the industry in which you are will also drive your behaviour"* (Senior Client Director, Manufacturing and Logistics). Documentary evidence indicates that Case A has proactively suggested innovation targets within their business proposals to clients, outside the existing contracted commitments. So, the key finding is that, whether the forces of change are industry driven, client or even the competition, a firm needs to respond innovatively, which actually drives behaviours supportive of innovation internally.

'KFA12–Supporting technology for innovation'. Case A does technology consulting and the majority of their project deliveries involve the use of technology. Highlighting the importance of using the right set of technology tools with clients, one interviewee said, *"Getting the right equipment, right tools to enable you to do the job"* (Consulting Director, Consumer Goods). Talking about the merits of using personal devices for work, one interviewee said, *"I think you actually foster better innovation environment and a more collaborative environment…if you allow people to bring in their own devices"* (Consulting Assistant Vice President, Hospitability & Consumer Goods). No documentary evidence was available. Some evidence from observations was available, but limited; however, it suggests that Case A's focus is on providing basic amenities, such as laptops, to consultants. No visible evidence of any gadgets to support cutting edge technology consulting was available. The key finding is that, whether from need or the want of supporting technology, firms – especially those in technology-related consulting – need supporting technology for consultants in their consulting initiatives.

'KFA13–Internal communication'. Highlighting the importance of effective internal communication and the need to know what the organization is doing both internally and externally, one interviewee said, *"It is knowledge about what your organization's doing, and in what directions the company is going in, what investments they are making, how are they keeping up with their competitors"* (Consulting Director, Consumer Goods). Documentary evidence suggests that Case A uses internal blogs/Yammer, innovation journal publications, other basic communications on the benefits generated by innovations and their applicability to business areas other than those

that developed the innovation. The key finding is that internal communication is a means to bringing consultants up to speed with the developments and activities of the company both within and external to the market.

5.4 RESULTS FOR RESEARCH QUESTION 2 (RQ2)

This section provides details of the data gathered, analysis, and findings from the focus group discussion, which was used as the primary, and only, source of evidence to answer RQ2 (*Why are these factors* [derived from the answer to Research Question 1] *important?*), and also the discussion relating to RQ2 with respect to Case A.

5.4.1   Focus Group Interview: Primary Source of Evidence for RQ2

5.4.1.1 Data Collection

An invitation was sent to all 12 interviewees to attend the focus group (see Appendix 5-3 for invitation details); three attended (see Table 5.10). The focus group lasted for two hours resulting in 15 pages of transcript, subsequently used to undertake coding.

Table 5.10: Focus Group details

Interviewee No.	Designation	Industry Segment	Service line
8	Manager – Consulting	Across industries	IT IS Enterprise Information Management
9	Director	Retail	Business, Process, Operations and IT Consulting
12	Senior Manager – Consulting	Across industries	Engineering Solutions

5.4.1.2 Data Analysis

The focus group data were transcribed and read/re-read multiple times (Gioia & Thomas, 1996), which yielded 37 codeable statements, each consisting of a sentence/sequence of sentences conveying a coherent point (Weber, 1990; Saldaña, 2013) as to why each factor was considered to be important or significant for Case A. A method of constant iteration was used to create mutually exclusive and exhaustive codeable statements (Miles & Huberman, 1994), which were then summarized as aggregate statements, based on what was said for each factor.

The 37 statements were coded using open coding (each code for Case A was coded using the prefix OCA, i.e., Open Code for Case A) based on the general meaning they conveyed. For example, for 'KFA2–Rewarding Innovation', one participant said (see the underlined phrase), *"It gives you the guidelines, it gives you the environment and I think we are very competitive, it is very relevant as it feeds that spirit"* (Consulting Director, Retail) and it was coded as 'To provide guidelines to work within' (OCA6). Also, the statement *"So if I am going to get rewarded, it elevates the mind to the hierarchical, how do I decide all the things I'm going to do in my pot of time, that raises the importance and creates that environment"* (Consulting Director, Retail) was coded as 'To raise importance of innovation and enable prioritization of work' (OCA8). Simultaneous coding of the statements was also undertaken where applicable. For example, the same statement *"It gives you the guidelines, it gives you the environment and I think we are very competitive, it is very relevant as it feeds that spirit"* (Consulting Director, Retail), was coded as 'To feed competitive spirit' (OCA7). This process was undertaken for all 13 key factors of innovation culture and 37 open codes emerged (OCA1-OCA37).

Open coding resulted in a number of codes against each factor. Therefore, for the purpose of summarizing the key reasons, aggregate statements were derived. The method used here was multiple reviews and iterations. So, for example, the three codes, OCA6 to OCA8, were read/reread several times to derive two aggregate statements (see Table 5.11). In this example OCA6 and OCA8, both codes[51] talk about providing guidelines to prioritize work; hence they were grouped together as one aggregate statement 'To direct focus on prioritizing innovation activities'. OCA7 could not be grouped and hence has been documented as a separate aggregate statement 'To feed competitive spirit'.

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[51] *Saldaña (2013) suggests that it may often be required to use more than one statement to understand the key relationships. In this case, it is the link here between how rewarding innovation enables Case A to raise the importance of innovation and the guidelines to work (or the prioritization of work) i.e., rewarding innovation raises the level of importance of innovation, and directs focus of the consultants to prioritize innovation activities.*

Table 5.11: Focus group coding example and derivation of aggregate statements

Code	Meta-construct	Quotes from focus group	Open Coding - Case A		
			Open Code Name	Open Code	Aggregate Statement/s
KFA2	Rewarding innovation	*"It gives you the guidelines, it gives you the environment and I think we are very competitive, it is very relevant as it feeds that spirit"*	To provide guidelines to work within	OCA6	To direct focus on prioritizing innovation activities (OCA6, OCA8) To feed competitive spirit (OCA7)
		"It gives you the guidelines, it gives you the environment and I think we are very competitive, it is very relevant as it feeds that spirit"	To feed competitive spirit	OCA7	
		"It elevates the mind to the hierarchical, how do I decide all the things am going to do in my pot of time, that raises the importance and creates that environment"	To raise importance of innovation and enable prioritisation of work	OCA8	

A similar process was followed with all of the 37 reason codes.

5.4.1.3 Summary of Findings

Reason codes OCA1-OCA37 were aggregated at the level of each factor to derive aggregate statements or key themes of reasons from the open codes. The aggregation led to a total of 21 aggregate statements or key reasons as presented in Table 5.12. The discussion of the reasons against each factor is presented in the next section (Section 5.4.2).

Table 5.12: Results from focus group data analysis

Code	Meta-construct	Quotes from focus group	Open Coding - Case A		
			Open Code	Reason Code#	Aggregate Statement/s
KFA1	Innovation execution capability	"It does come back to....probably a follow on from the previous point [dedicated team], yes we have great ideas, how do you embed that, how do you market it, how do you tell it out"	To build the ability to develop ideas and also present them well externally	OCA1	To build the ability to develop and market innovative ideas and also respond to any innovation requests from clients (OCA1, OCA3, OCA4, OCA5)
		"Plus, the difficulty is how many times do clients say great, where have you done that before., we haven't yet (laughs); so for us it is really relevant in that we have to show traction, that we have done it"	To demonstrate company's innovative ability and give confidence to clients	OCA2	
		"One of the things is that clients are asking in RFPs as to what innovations we can bring ....so it is relevant in that sense"	To meet clients' requirements of having the delivery capability	OCA3	
		"Yes, I think taking it out to market .....we have a group called EBA [Emerging Business Accelerators]...but in addition to that, we should focus on internally how an individual does innovation and how our ideas can be implemented"	To build the ability to develop, implement ideas and take them to the market	OCA4	To give confidence to clients of company's ability to innovate (OCA2)
		"We can be more proactive, have a roadmap and plan, so when the requests [from clients] for innovation do come in, we are already prepared"	To be prepared to respond to clients' innovation requests	OCA5	
KFA2	Rewarding innovation	"It gives you the guidelines, it gives you the environment and I think we are very competitive......it is very relevant as it feeds that spirit"	To provide guidelines to work within	OCA6	To direct focus on prioritizing innovation activities (OCA6, OCA8)
		"It gives you the guidelines, it gives you the environment and I think we are very competitive. .....it is very relevant as it feeds that spirit"	To feed competitive spirit	OCA7	
		"It elevates the mind to the hierarchical...how do I decide all the things am going to do in my pot of time...that raises the importance and creates that environment"	To raise importance of innovation and enable prioritisation of work	OCA8	To feed competitive spirit (OCA7)
KFA3	Innovation is company's ethos	"So, I mean customers are asking for that, that's why they hire consultants because of what they bring that's new and different than what they already have .....it [innovation] should be our ethos otherwise customers are not going to reach for us, I think that is the relevance factor"	To give clients new and innovative perspectives	OCA9	To provide clients new, innovative perspectives (OCA9)
KFA4	Explore externally for innovation opportunities	"They [clients] are actually looking for suppliers to bring innovative ideas to them....now given that context, now we ourselves have a limited view of what is happening in the world"	To broaden company's view of the market	OCA10	To broaden company's awareness of the market and its relevance to clients (OCA10)
		"The reason why I brought this out is that we may be very much stuck in our own areas, we may not be aware of the areas that are important because it could be relevant to our clients or the potential clients we wish to target"	To improve awareness of areas relevant to clients	OCA11	
		"It is always good to partner with them to see how we can get innovation quickly.... that is get the output quickly and into the market"	To take innovation to the market quickly	OCA12	To take innovation to the market quickly in line with technology cycles (OCA12, OCA13)
		"To add to that, the time taken for technology to change is now reducing, so as a company, we can't be in the fore front of all of that, we have to rely on third parties to help us and we need to tap into that....and that's how we can move with the market"	To move with the market quickly as technology cycles are reducing	OCA13	
		"We don't offer specific software and tools, but we can partner with organizations to offer a holistic solution to the clients ....so we're doing some pretty interesting stuff with <<partner company name>>, this is their work force management systems and tools, we added in our gamification options, we created a really nice offering to our customer"	To enable development of holistic solution offerings to clients	OCA14	To enable development of more holistic solution offerings to clients (OCA14)

Code	Meta-construct	Quotes from focus group	Open Coding - Case A		
			Open Code	Reason Code#	Aggregate Statement/s
KFA5	Client at the centre of innovation	*"This one's important to me, you can't innovate in isolation and you are innovating without a cause I think we should be in touch, this should be our bread and butter, we know what our clients are facing and help them solve their problems in new ways they never thought of; but it is about being really clear about what current motivations, pain points, and future factors that our clients are gonna to have to address"*	To enable employees to solve clients' problems	OCA15	To enable employees to focus on innovation based on real client business problems (OCA15, OCA16)
		Yeah, but that doesn't engage the client, right? Just brain storm with the clients and out of those discussions will come a set of ideas/ problems you can specifically target....and then that leads to innovation ...these are things that can be done....I don't know	To target specific client problems	OCA16	
KFA6	Dedicated innovation office	*Relevance.....again, it can be the same thing....if we are a market leading organization that shows innovation, it shows the level of commitment and dedication in the company because of the investment*	To show company's level of commitment towards innovation	OCA17	To demonstrate company's support of innovation (OCA17, OCA18) To take innovation to the market (OCA19)
		"Yeah, we are aiming for Tier 1 as an organization.... Tier 1 is about being in the fore front of with the right strategy and the only way to do that is think outside the box rather than turn the wheel"	To enable consultants to think outside the box vs. business as usual	OCA18	
		"There is another group that converts R&D products into marketable products and takes them into the market and they are kind of business enablers"	To take innovation to the market	OCA19	
KFA7	Diversity	*As I said before, for innovation to be holistic you'll need to have different viewpoints, I think it will provide more rich thought leadership, problem solving and bouncing different ideas and viewpoints of the world to get to a very nice solution*	To produce a variety of creative thought to provide better client solutions	OCA20	To produce a variety of creative thought to provide better client solutions (OCA20)
KFA8	Physical environment	*"We do need a place where we can talk ....reality is the difficulty of hot desking, it is really hard to find a place to sit, talk and white board things, it is near impossible to find a room here.....so, I do think this is relevant for us to do some of those things, and we don't have it or it is limited"*	To provide an opportunity to sit, talk and whiteboard things	OCA21	To provide an opportunity - physical location - to talk about innovation (OCA21, OCA22)
		"The other thing is, in the UK, we mostly work out of client locations.....but absolutely agree in these locations we should have more of these providing an opportunity to talk"	To provide an appropriate location to talk about innovation	OCA22	
KFA9	Dedicated time for innovation	*"For me, it seems like a broken record, but it is down to resource of time and resource for people to truly innovate.....those six or five [initiatives] are worthy of exploration.......here's 3 months, and here's some resources, go and drive that....I think people would gravitate towards that, instead of 'do this in your day job'"*	To provide support through allocation of resources to develop innovation	OCA23	To demonstrate company's support of innovation (through allocation of resources) (OCA23) To provide more time for people in client-facing roles to create relevant client solutions and IP (OCA24, OCA25, OCA26)
		"But where is the ability for those that are closest to customer to have a moment to breathe to be able to turn around and create or input to somebody to create what's needed for the customer"; It is interesting that a dedicated innovation office is high, but if you have an investment office with no time, it becomes a moot point.	To provide more time for people in client-facing roles to create relevant client solutions	OCA24	
		"The reality is that in strategic services, we have investments, our utilisation targets are lower than a lot of other practices.....so that is supposed to give us that bandwidth to go do business development"	To enable creation of bandwidth for business development	OCA25	
		"So it depends on how many people are here...and how many people are available...see, in a year, if we want to ear mark 3 days for this, if I lose 3 days of billing, what is the impact of that, versus, if I get something here....I am not sure how much of our revenue is IP [Intellectual property] driven"	To enable dedicated focus on IP development	OCA26	

Code	Meta-construct	Quotes from focus group	Open Coding - Case A		
			Open Code	Reason Code#	Aggregate Statement/s
KFA10	Focus on identifying value of innovations	"Do understand that this is tough, but it needs to be done... otherwise how would you know whether the initiative is good and this links back to the rewards as well" "And investment, how do you prove its worth, and that all of these things we are talking about make sense"	To direct focus on innovation to make sure it adds value	OCA27	To direct focus on prioritizing innovation activities based on value (OCA27)
KFA11	Driven to innovate due to external factors	"It raises the importance of time and resource, so there is something that's a driving force that brings it top of mind.....which then brings the urgency to innovate I think"	To create urgency internally to innovate	OCA28	To create an urgency internally to innovate (OCA28, OCA29)
		"There is no call for innovation, so some of the work that you are talking about [referring to participant 1's point on client asking for innovation]; the problem is we do not have as many examples especially in the UK, we are not doing as much luxury consulting and luxury work as we are doing in commodity and commodity doesn't require innovation as often"	To raise an internal call for innovation	OCA29	
KFA12	Supporting technology for innovation	"We are a technology company, I mean, so we should be able to take whatever technology works in the areas that we work in, if you are working in digital transformation, you should be able to take the latest digital tools; so being flexible enough and how we approach our customers I think is pretty important"	To enable employees to use any relevant technology/tools as part of their approach with clients	OCA30	To enable employees to use appropriate technology in their approach with clients (OCA30)
		"If you allow people to be flexible and bring their own devices, it encourages them to be free and they can work the way they want to work ....that in turn will drive innovative behaviour"	To enable employees to use any relevant technology/tools to work efficiently	OCA31	To enable employees to work efficiently and collaboratively (OCA31, OCA32)
		"So, no matter where I am I should be able to use my devices....also there should be the ability to use web chats, conference lines and things like that; we want us all to be connected"	To build a collaborative environment and stay connected	OCA32	
KFA13	Internal communication	"So how would I know that we could leverage that [an innovation that is in a different part of the organization], so even if it is dedicated, it has to be communicated and then how do you tell that to your customers"	To keep employees on the same page	OCA33	To enable all employees to stay connected in regard to innovation (OCA33, OCA35, OCA36)
		"So we were doing some things around supply chain analytics and we decided to reach out to CBC analytics and we realized we were working on the same thing, may be it is communication and visibility, if it is not shared, we are wasting our time"	To leverage existing service offerings across the organization	OCA34	
		"I have also seen travel and hospitality come up with a lot of innovations bringing digital experience etc., but the only problem is point#13 [referring to internal communication], a large organization can still have a good mechanism of internal communication"	To ensure information about innovation is communicated to all employees	OCA35	To facilitate leveraging innovation offerings across the organization (OCA34, OCA37)
		"I think if we jump in, how can it be made better for an individual to organise it [information], maybe an email sorting system that automatically dumps things into folders that we can find stuff and not get archived to the Netherlands.... I think there is a ton of information going around, but it is difficult to find it when you need it....it is very very hard"	To enable finding relevant information easily	OCA36	
		"Finally <the consulting group> published its structured and I thought to myself ah, this is how the organization I work for functions .....I've been around for more than three years and I just learnt that this year"	To produce awareness of what is happening	OCA37	

Legend: OCA is Open Code for Case A.

5.4.2 Discussion

Based on the FG discussion, this case study identified 21 key reasons (documented as aggregate statements in Table 5.12) why the 13 key factors of innovation culture are important for managers. This subsection presents a discussion on the findings from the analysis with the aim of answering RQ2 against each key factor of innovation culture. The discussion presents RQ2 in the context of PSF industry and the challenges PSFs currently face (based on the discussion presented in Chapter 1, Section 1.5, which highlights six challenges that can inhibit innovation in the PSF industry[52]).

'KFA1–Innovation Execution Capability'. This refers to an organization building the necessary knowledge, resources, processes and capability to implement/deliver innovation. Two key reasons (aggregated from codes OCA1-OCA5) emerged as to why KFA1 is important for managers. First, KFA1 enables Case A to not only come up with innovative ideas but also develop and market them (OCA1, OCA3-OCA5). *"It does come back to, yes we have great ideas, how do you embed* [develop, test, and implement] *that, how do you market it, how do you tell it out?"* (Consulting Director, Retail). Second, KFA1 gives confidence to clients of Case A's ability to innovate (OCA2). *"The difficulty is how many times do clients say great, where have you done that before…it* [KFA1] *is really relevant…we have to show traction, that we have done it"* (Manager, IT Infrastructure); *"We need to be showing that we are innovating and that is one of the differentiators of a Tier 1 company"* (Consulting Director, Retail). Thus, KFA1 enables Case A to develop and market innovative solutions, and also in turn build the capacity to innovate, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFA2–Rewarding Innovation'. This refers to an organization having a formal 'Rewards and Recognition' programme tightly mapped to the innovation value generated. Two key reasons (from codes OCA6-OCA8) emerged as to why KFA2 is important for

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[52] *Chapter 8 provides a detailed account of how the key factors across all three case studies support in making a contribution towards addressing the challenges in the PSF industry, which will need to be overcome in order to establish a culture of innovation*

managers. First, KFA2 enables consultants to direct their focus on prioritizing innovation activities (OCA6, OCA8). *"It* [KFA2] *elevates the mind to the hierarchical; how do I decide all the things I'm going to do in my pot of time, that raises the importance and creates that environment"* (Senior Consulting Manager, Engineering Solutions). Second, KFA2 enables Case A to feed their already competitive spirit (OCA7). The case company is very competitive (based on a CAGR[53] of 8% from 2010 to 2015, much higher than its competitors in the same industry). *"It* [KFA2] *gives you the environment and I think we are very competitive, it is very relevant as it feeds that spirit"* (Consulting Director, Retail). Thus, KFA2 directs focus on prioritizing innovation activities, over business-as-usual activities, i.e., their focus on billable/chargeable hours. Thus, KFA2 enables Case A's consultants to strike a balance between billing hours and time allocated for innovation, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFA3–Innovation is company's ethos'. This refers to an organization living and breathing innovation by way of making wholesale changes to all organizational processes to reflect and support innovation, i.e., putting the ideals of innovation into practice. One key reason (from code OCA9) emerged as to why KFA3 is important for managers. KFA3 enables Case A to provide clients new, innovative perspectives (OCA9). One participant said, *"They* [clients] *hire consultants…they* [consultants] *bring what's new and different… it* [innovation] *should be our ethos, otherwise customers are not going to reach for us"* (Consulting Director, Retail). The FG discussed how when a company is able to build innovation into their organizational processes (e.g. recruitment, appraisals, communication, client engagement, etc.), the employees start thinking in innovative ways, which in turn helps them with their client work. To add to that, a Senior Consulting Manager, Infrastructure Services, said, *"White papers have been produced, they are outside* [referring to the reception area]; *there are a lot of booklets which tell* [innovation] *stories."* It is evident that by imbibing values related to innovation into every part of organizational life, Case A is able to deliver value to its clients. Thus, KFA3 enables Case A to provide value adding/innovative solutions to clients, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

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[53] *CAGR: Compounded Average Growth Rate*

'KFA4–Explore innovation externally'. This refers to exploring opportunities of innovation through engagement with external organizations. Three key reasons (from codes OCA10-OCA14) emerged as to why KFA4 is important for managers. First, KFA4 enables Case A to broaden its awareness of the market (OCA10). *"They* [clients] *are actually looking for suppliers to bring innovative ideas to them…we* [ourselves] *may not be aware of the areas that are important…relevant to our clients or the potential clients we wish to target"* (Consulting Senior Manager, Engineering Solutions). Second, KFA4 enables Case A to take innovation to the market quickly in line with technology cycles (OCA12-OCA13). *"The time taken for technology to change is now reducing…we can't be in the forefront of all of that…we have to rely on third parties to help us"* (Consulting Manager, Infrastructure Services). Third, KFA4 enables Case A to develop more holistic solution offerings to clients (OCA14). *"We don't offer specific software and tools, but we can partner with organizations to offer a holistic solution to the clients"* (Consulting Director, Retail). Thus, KFA4 enables Case A to develop innovative solution offerings, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFA5–Client at the centre of innovation'. This refers to an organization keeping the client at the centre of its innovation initiatives, i.e., keeping the client at the centre of focus to develop innovative solutions based on their needs, problems/pain areas, industry need, etc. One key reason (OCA15-OCA16) emerged as to why KFA5 is important for managers. KFA5 enables consultants to focus on innovation based on real world client business problems (OCA15-OCA16). One participant said, *"You can't innovate in isolation…being really clear about what current motivations, pain points, and future factors that our clients are gonna have to address"* (Consulting Director, Retail). The FG discussed that innovation has a key purpose, which is to solve clients' business problems by providing innovative solutions, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFA6–Dedicated innovation office'. This refers to an organization having a dedicated innovation team, which defines and manages the innovation processes, i.e., it is a

custodian of innovation best practice, including implementation. Two key reasons (from codes OCA17-OCA19) emerged as to why KFA6 is important for managers. First, KFA6 enables Case A to demonstrate the company's support of innovation (OCA17-OCA18). *"If we are a market leading organization…it shows the level of commitment and dedication in the company because of the investment* [in an innovation office]*"* (Consulting Director, Retail). Second, KFA6 enables Case A to take innovation to the market (OCA19). The FG discussed how disconnected an organization could be because of the matrix structure (with a number of horizontal practices and vertical industry domains) and that a dedicated innovation office can support consultants with information on what is happening in terms of new innovations outside their own individual groups and help them to develop and take their own innovations to the market. *"There is a group* [referring to the dedicated innovation group] *that converts R&D products into marketable products and takes them into the market and they are kind of business enablers"* (Consulting Manager, Infrastructure Services). Thus, while KFA6 is not only able to circumvent some of the company's inherent structural aspects that can inhibit visibility, sharing of work happening across groups and taking innovation to the market, it serves as a visible commitment by management to innovation.

'KFA7–Diversity'. This refers to an organization having a diverse group of people – diverse in various respects such as educational background, experience, ethnicity, gender, geographical location, etc. supporting their projects. One key reason (code OCA20) emerged as to why KFA7 is important for managers. Through KFA7 consultants in Case A are able to produce a variety of creative thought/viewpoints to provide better client solutions (OCA20). *"For innovation to be holistic you'll need to have different viewpoints…it will provide more rich thought leadership, problem solving and bouncing different ideas and viewpoints…to get to a very nice solution"* (Consulting Director, Retail). The FG discussed how diversity can support and facilitate problem solving and thought leadership, which ultimately leads to innovative solutions to clients. Thus, diversity enables Case A to offer innovative solutions to clients, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'**KFA8–Physical Environment.** This refers to employees being provided with the right physical space and facilities that are conducive to innovation. One key reason (codes OCA21-OCA22) emerged as to why KFA8 is important for managers. Through a good physical environment, Case A is able to provide an opportunity to talk about innovation (OCA21-OCA22). The FG discussed that a good physical location provides an opportunity for people to come face to face and have discussions, which can trigger innovative ideas. *"We do need a place where we can talk…reality is the difficulty of hot desking, it is really hard to find a place to sit, talk and whiteboard things…so, I do think this is relevant for us to do some of those* [brainstorming and idea generation] *things"* (Consulting Director, Retail). Thus, KFA8 is able to provide an environment for internal interactions/behaviours that can contribute to innovation, again a challenge for PFSs as discussed in Chapter 1 (Section 1.5.4).

'**KFA9–Dedicated time for innovation.** This refers to individuals being given time to reflect on consulting engagements being delivered (or already delivered) to develop innovative ideas. Two key reasons (from codes OCA23-OCA26) emerged as to why KFA9 is important for managers. First, KFA9 enables Case A to demonstrate the company's support of innovation (through allocation of resources) (OCA23). One participant said, *"It is down to resource of time and resource for people to truly innovate, those six or five* [initiatives] *are worthy of exploration… here's three months, and here's some resources, go and drive that; I think people would gravitate towards that, instead of 'do this in your day job'"* (Consulting Senior Manager, Engineering Solutions). Second, KFA9 enables Case A to provide more time for people in client-facing roles to create relevant client solutions and intellectual property (IP) (OCA24-OCA26). *"But where is the ability for those that are closest to the customer to have a moment to breathe, to be able to turn around and create or input to somebody to create what's needed for the customer"* (Consulting Director, Retail). With regard to time, the FG revealed that the case company's measurement of utilization rates are being tracked closely, *"The reality is, it is all margin, margin, revenue, revenue, utilization, utilization"* (Consulting Director, Retail) and that the organization should not reduce levels of resource slack available to support innovation, instead slack should be

planned for. The discussion was around how client-facing consultants have no time to work on innovative ideas and how billing targets dissuade them from working on innovations. Therefore, dedicated time provides consultants with the confidence to set aside time for innovation over billable hours, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFA10–Focus on identifying value of innovation'. This refers to organizations measuring the value generated (or realized) by organizations against the investments they make on innovation initiatives. One key reason (code OCA27) emerged as to why KFA10 is important for managers. KFA10 enables Case A to direct its focus on prioritizing innovation activities based on the value of innovation that can be generated (OCA27). Highlighting the importance of measurement of innovation value, one participant asks, *"How would you know whether the initiative is good…and investment, how do you prove its worth, and that all of these things we are talking about make sense?"* (Consulting Manager, Infrastructure Services). The FG discussion was around how focusing on measuring the value of innovation ensures value is added to the client. It is only when the value is measured that how much innovation is contributing to their clients can be established.

'KFA11–Driven to innovate due to external factors'. This refers to an organization being forced to innovate due to factors external to them. Examples of factors could include clients, competition, business environment/regulations etc. One key reason (from codes OCA28-OCA29) emerged as to why KFA11 is important for managers. KFA11 creates an urgency internally within an organization to innovate (OCA28-OCA29). This is a factor that an organization does little to achieve as it is an external driver. The kind of response an organization gives to such an external driver as competition, clients, regulations, etc., in a competitive environment becomes relevant in creating a culture within the organization. One participant said, *"It raises the importance of time and resource, so there is something that's a driving force that brings it top of mind, which then brings the urgency to innovate, I think"* (Consulting Director, Retail). Another participant said, *"Clients are asking where have we done innovation initiatives in the past, and that itself is driving the behaviour… we are having to innovate because our clients are asking"* (Consulting Senior Manager, Engineering Services). While competitive environment and pressure from clients creates the urgency and

highlights the importance of innovation, the importance of this factor is largely realized when the company actually responds when there is such external stimuli.

'KFA12–Supporting Technology for innovation'. This refers to how organizations leverage technology to support their innovation initiatives, including internal organizational policies to support the use of technology in innovation. Two key reasons (from codes OCA30-OCA32) emerged as to why KFA12 is important for managers. First, KFA12 enables employees to use technology in their approach with clients (OCA30). One participant said, *"If you are working in digital transformation, you should be able to take the latest digital tools…how we approach our customers I think is pretty important"* (Consulting Director, Retail), suggesting its importance in delivering innovative solutions to clients. Second, KFA12 enables Case A's consultants to work efficiently and collaboratively (OCA31-OCA32). *"So, no matter where I am, I should be able to use my devices…web chats, conference lines and things like that; we want us all to be connected"* (Consulting Manager, Infrastructure Services). Thus, through KFA12 consultants are able to work efficiently through the use of a collaborative environment and use approaches that can deliver innovative solutions to clients, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFA13–Internal communication'. This refers to regular and continual communication with the employees within the organization in terms of both activities of the organization outside and also inside. Two key reasons (aggregated from codes OCA33-OCA37) emerged as to why KFA13 is important for managers. First, KFA13 enables consultants in Case A to stay connected in regard to innovation (OCA33, OCA35-OCA36). On staying connected, one participant said*, "So how would I know that we could leverage that* [an innovation in a different part of the organization]*…it has to be communicated"* (Senior Consulting Manager, Engineering Solutions). Second, KFA13 enables consultants to leverage innovation offerings across the organization (OCA34, OCA37). The focus group discussed that by way of enabling the right set of communications to find relevant information on time, consultants can benefit from innovations across the organization. One

participant said, *"There is a ton of information going around, but it is difficult to find it when you need it, it is very very hard"* (Consulting Director, Retail).

Thus, the discussion presented above provides the response to RQ2 for Case A in light of some of the challenges that the PSF industry faces (as described in Chapter 1, Section 1.5.4). The next section provides key insights obtained from research work undertaken at Case A.

5.5 KEY INSIGHTS FROM CASE A

Based on the findings from this study, four conclusions can be drawn in regard to key factors that relate to an innovative organizational culture in the following areas: (a) people practices within the organization that support innovative behaviours; (b) externally focused initiatives that impact on internal orientation towards innovation; (c) support mechanisms through processes and structures within the organization that are supportive of innovation; and (d) the challenges in PSFs that can inhibit innovation can be addressed by some of the key factors.

First, there are four people practices (31%) of the key factors ('KFA2–Rewarding innovation', 'KFA7–Diversity', 'KFA9–Dedicated time for innovation' and 'KFA13–Internal communication') that emerged as important in Case A. Rewarding innovation (KFA2) provides the motivation for consultants to prioritize (time for innovation) and put more focus on innovation and future opportunities. Diversity (KFA7) in teams creates an environment where there is a healthy disagreement and challenging of ideas leading to rich perspectives emerging on solutions for clients. Dedicated time set aside for innovation (KFA9) provides legitimacy from management to stay focused on developing innovative solutions for clients. Further, for a large organization like Case A, internal communication (KFA13) enables their consultants to be on the same page so they are able to leverage innovations developed in one part of the organization in another part of the organization. Thus, these four people practices contribute to creating a culture of innovation.

Second, there are three key factors ('KFA4–Explore externally for innovation', 'KFA5–Client at the centre of innovation' and 'KFA11–Driven to innovate due to external factors') that are related to the external focus of an organization, but are important in order to create an internal environment supportive of innovation. Exploring externally through partnerships (KFA4) creates the required market awareness to build new internal capabilities to provide holistic solutions to clients. Keeping client at the centre of innovation (KFA5) focuses teams on solving clients' business problems, so the solutions generate significant business value and are readily accepted by the clients. Responding positively to the demands from the environment (KFA11) (e.g. industry changes related to regulations, general industry dynamics, competition, etc.) external to the organization drives teams internally to be innovative, as did Case A's consultants to clients' requests to implement innovation. Thus, these three externally oriented activities have an impact internally on creating a culture of innovation.

Third, there are six key factors ('KFA1–Innovation execution capability', 'KFA3–Innovation is company's ethos', 'KFA6–Dedicated innovation office', 'KFA8–Physical environment', 'KFA10–Focus on identifying value' and 'KFA12–Supporting technology for innovation') that relate to either processes or mechanisms that will need to be set up within an organization to support individuals and teams on innovation initiatives. Innovation execution capability (KFA1) enables teams to build the necessary capabilities to develop, test, and implement solutions for clients, rather than just abandon good ideas. When innovation is the company's ethos (KFA3), which continually focuses people's attention on innovation, it is incorporated into their everyday organizational life and even their solutions for clients. The right set of processes (e.g. through a dedicated innovation office – KFA6) enable Case A to quickly review, evaluate and discuss potential solution options and come to a conclusion on the viability of innovative ideas. A good physical environment (KFA8) is conducive to innovation and an organization needs to ensure that the consultants have the right environment to innovate. Identifying innovation value (KFA10) helps consultants to focus on the opportunities that add value to clients. This enables Case A to legitimize their

innovation initiatives (as they have support from clients) and demonstrate the value of innovation to clients with confidence. The supporting technology tools (KFA12) create a collaborative environment internally and enable consultants to showcase their cutting edge capabilities to clients (which is a part of delivering innovative solutions to them).

Finally, some of the challenges that inhibit innovation in PSFs, as discussed above, discussed in Chapter 1 (Section 1.5.4) can be addressed through the key factors. For example, 'KFA2–Rewarding innovation' provides the necessary motivation for consultants (and their supervisors) to prioritize and strike a healthy balance between immediate term billing targets and long-term futuristic innovation opportunities (a challenge for PSFs that KFA2 can address). Another example is 'KFA1–Innovation execution capability'. KFA1 provides the necessary infrastructure and capabilities for consultants to implement innovative ideas and in turn build the capacity to innovate (a challenge for PSFs that KFA1 can address). Thus, some of the factors identified in this case study address the challenges that can inhibit innovation in PSFs.

5.6 CHAPTER SUMMARY

This chapter provided answers to RQ1 and RQ2 for Case A. First, the data sources used for the analyses were presented. Second, the constructs (factors of innovation culture) elicited during the rep grid interviews were analyzed and presented, and of the 31 (#32 was 'Miscellaneous' and excluded) factors of innovation culture, 13 were identified as key factors for Case A. These were supported through documentary evidence and observations, where evidence was available. This provided the response to RQ1. Third, the FG data were analyzed and results and findings presented, identifying 21 reasons (specific to Case A) why the 13 key factors are important for managers. This provided the response to RQ2.

Finally, the chapter concluded with four key areas of focus that organizations similar to Case A can consider from a culture perspective: (1) people practices, (2) external organizational engagement that can create an internal orientation to innovation, (3) organizational support mechanisms and (4) how some challenges that inhibit PSFs from

innovating can be positively addressed through the key factors. The overall implications of the findings of this chapter will be discussed in conjunction with Cases B and C as part of the cross-case analysis (Chapter 8), and findings and conclusions (Chapter 9).

6.0 CASE B – WITHIN-CASE ANALYSIS & FINDINGS

6.1 INTRODUCTION

This chapter is based on data and evidence from Case B (i.e. Management Consulting Co.) and presents the details of analysis and findings related to both research questions RQ1 and RQ2.

Specifically, this chapter covers the following:

- Background information and data sources used for investigating Case B (Section 6.2);
- Results for RQ1: Data collection, analysis, findings and discussion (Section 6.3);
- Results for RQ2: Data collection, analysis, findings and discussion (Section 6.4);
- Key insights from Case B (Section 6.5); and
- The chapter summary (Section 6.6).

6.2 BACKGROUND

6.2.1   Company: Case B (Management Consulting Co.)

This case study was undertaken at Case B: Management Consulting Co.[54], a global management consulting company. This study was undertaken at their office in the UK. Case B is committed to their focus on innovation and their official statement indicates their commitment to building a culture of innovation. Case B is a global firm with much more diversified business than just management consulting. The focus of this case study is their consulting line of business, which has around 2000 consulting practitioners in the UK, with

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[54] *Name has been changed to preserve anonymity*

presence predominantly in the following industries: Banking, Financial Services, Manufacturing, Insurance, Pharmaceuticals and Life Sciences, Retail and Consumer, Hospitality, Communications, Logistics, Healthcare, Information, Entertainment and Media, Technology, Power and Utilities, Oil and Gas.

Case B's core competencies in the consulting space include: finance, strategy, operations, people, technology, governance risk and compliance, enterprise performance management (process transformation, systems implementation and application management), project and program management and cyber security and business change enabled by digital technology. Case B's employees work across client locations within the UK. In terms of structure, the company broadly has a matrix organization: *Industry Focus Areas* focus on industries in which the company's clients operate, and *Service Competency Areas* are divisions that develop service/solution offerings and serve across industries.

6.2.2   Data Sources Used

A total of five visits were made to three different locations to carry out initial discussions and data collection; one visit was made for an initial discussion with the sponsor in Birmingham, three to conduct 12 repertory (rep) grid interviews in the two locations in London and one for the focus group interview in London. Documents and artefacts were gathered from the public domain. Observations of the office layout, kitchen areas and general facilities were made and captured as field notes during one visit made to their office in Birmingham, and two visits to their two different London offices. Section 6.3 provides details of the results and discussion for RQ1 (*What are the most important factors of innovation culture as perceived by managers?*). Likewise, Section 6.4 provides details of the results and discussion for RQ2 (*Why are the factors (from RQ1) of culture considered to be important?*). Three sources were used to answer RQ1: rep grids, documents, and observations. One source was used to answer RQ2: focus group (FG).

6.3 RESULTS FOR RESEARCH QUESTION 1 (RQ1)

This section provides details of the data gathered, data analysis, and findings from each of the data sources used to answer RQ1. This section also provides a discussion relating to RQ1 for Case B.

6.3.1   Repertory Grid: Primary Source of Evidence for RQ1

This is divided into three subsections: data collection, analysis and findings from rep grid interviews.

6.3.1.1 Data Collection

12 repertory grid interviews were conducted; the interviewees were selected to cover the full range of the various portfolios of services offered and the industry segments in which they operate. A mix of managers at different levels within the organization (Manager, Senior Manager, Director, Partner), who are involved in delivering innovative solutions and services to clients, was chosen – see Table 6.1. The time taken per interview averaged 62mins, i.e., a total of 744 minutes of interview time. All were recorded and transcribed, resulting in 167pp. of transcript. A total of 138 constructs were elicited from the 12 interviews.

Table 6.1: Interview details

Interviewee No.	Designation	Industry Segment	Service Line
1	Consulting Manager	Modelling and Analytics	Strategy
2	Consulting Manager	Government and Health Industries	Operations
3	Senior Consulting Manager	Transport and Logistics	Operations
4	Senior Consulting Manager	Banking and Insurance	Technology
5	Partner	Entertainment and Media, Retail and Consumer	Financial Analysis and Decisions
6	Partner	Financial Services	Technology
7	Consulting Director	Industrial products	Operations
8	Consulting Director	Government	Portfolio and Programme Management
9	Senior Consulting Manager	Telecommunications	Technology
10	Senior Consulting Manager	Government and Health Industries	Operations
11	Consulting Manager	Technology, Information, Communication and Entertainment	Operations Procurement
12	Partner	Global Innovation and Development	Technology

6.3.1.2 Data Analysis

As described in Chapter 4 (Section 4.4), three broad steps of analysis were undertaken; here, an example of selected constructs with similar meaning has been used to explain how the analysis was done:

Step 1: Coding the elicited constructs and grouping them

Interviewee 2, Consulting Manager, Government and Health Industries, Operations, said,

Sample Quote	Code
"So I think having an organization which has a mixture of, I am gonna use that _type_ _of_ _visible_ _diversity,_ _a_ _mixture_ _of_ _young_ _and_ _old,_ _female,_ _male,_ _different_ _cultures_ _or_ _say_ _different_ _previous_ _working_ _environments_ and particularly in consulting, not just having career consultants but having that mixture of people who have been operational or you have worked in entrepreneurial environments" (Construct specified was "People with a mixture of experience and diverse backgrounds")	Int2-4

Interviewee 4, Senior Consulting Manager, Banking & Insurance, Technology, said,

Sample Quote	Code
"If everyone thinks the same, has the same background, upbringing, culture, they all think along similar lines. _If_ _you_ _get_ _people_ _from_ _diverse_ _cultures,_ _backgrounds,_ _religions,_ _you_ _name_ _it,_ _you_ _end_ _up_ _with_ _much_ _more_ _of_ _a_ _melting_ _pot_, and if you then foster a culture of challenge, or at least constructive conflict, then you are able to derive far more insight into each other and into problems, rather than accepting the first solution that comes along, because people can challenge that" (Construct specified was "Diversity of people")	Int4-11

Interviewee 6, Partner, Financial Services, Technology, said,

Sample Quote	Code
"You have got one culture that people buy into, but within that _there_ _is_ _a_ _hugely_ _diverse_ _range_ _of_ _experiences_ " (Construct specified was "Diversity of experience and opinions")	Int6-13

Table 6.2 provides a summary: the eight constructs from individual interviews have been categorized into 'Diversity', i.e., 67% of participants have stated its relevance to innovation culture.

Table 6.2: Deriving meta-constructs (or categories) by categorizing constructs

Categories	Constructs	Int No.
Diversity	Diversity of experience	Int1
	People with a mixture of experience and diverse background	Int2
	Diversity of people	Int4
	Diversity of experience and opinions	Int6
	Younger people	Int8
	Diversity	Int11
	Mix of experience and diversity	Int7
	Diversity of people	Int5

This categorization was undertaken by two researchers (A and B)[55] in parallel.

Step 2: Drawing up the reliability table

A reliability table (Table 6.3) was drawn up with the categorization of constructs undertaken by researchers A and B. Researcher A came up with 32 meta-constructs or categories (grouping of the total of 138 constructs) and Researcher B with 27. Based on the two researchers' categorization of constructs, the inter-rater reliability[56] (IRR) was calculated, and was around 37%, slightly lower than indicated by Miles and Huberman (1994) to be found at this stage (i.e. around 45%). This indicated that more discussion was required with Researcher B and that was undertaken in a call and also a face to face meeting.

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[55] *Researcher A is the author of this thesis. Researcher B (who already has a doctorate in digital image processing technology) was interested in the research on innovation culture and agreed to support Researcher A.*
[56] *Number of constructs agreed between Researchers A and B as a percentage of all the constructs in the table.*

Table 6.3: Drawing up a table to derive reliability

Researcher B → / Researcher A ↓	Recognizing differences	Leverage external avenues	Recruit the right people	Top down innovation focus	Coaching from seniors	Everyone to innovate
Diversity	Diversity of experience / Diversity of people / Diversity of experience and opinions / Diversity / Mix of experience and diversity		Younger people / People with a mixture of experience and diverse backgrounds			
Explore externally for innovation		Collaboration with different businesses / Innovation through external stimulus / Partnering eco-system / Strategic acquisition for innovation				Leveraging new interactions (within/outside)
Best talent			Recruitment process recognises capabilities required for innovation / People have aptitude for innovation / Getting bright talent (age related)			Innovation thinkers
Leadership focused on innovation				Leadership commitment to innovate / Innovation is an explicit priority at the top level / Tone from the top		
Coaching and mentoring				Role model to support innovation processes / More encouragement of innovation	Managers/ leaders coach extensively / Coaching organization	
Innovation focus at all levels					Encourage people to come up with ideas	Innovation at every level / Communities of shared interest
Knowledge sharing culture						Information sharing culture / More collaboration

Step 3: Reliability checks

Based on further discussions, a list of 35 was agreed between Researchers A and B. As suggested by Jankowicz (2003), all of the constructs were re-coded into one of the enhanced construct categories, again working independently and in parallel. The outcome produced a second reliability table that led to an IRR of close to 97%, demonstrating a sufficient level of reliability as suggested by Jankowicz (2003).

6.3.1.3 Summary of Findings

As discussed in Chapter 4 (Section 4.4.2), to answer RQ1, the analysis was based on a consideration of both frequency of mention and variability[57], i.e., for a factor to be most important the frequency of its occurrence should be high and the variability should also be high. Since seven out of 35 meta-constructs were only mentioned twice, these did not meet the minimum frequency of 25% (Goffin et al., 2010) and were eliminated. Further, 14

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[57] *It is the percentage of the total spread of ratings. This is an indicator that differentiates most strongly between the elements (the six companies used for the interview as discussed in Chapter 4, Section 4.4.2) of the grid. So, the higher the variability, the higher is the importance of the factor (Goffin et al., 2010).*

constructs were categorized into the 'Miscellaneous' meta-construct category i.e., the constructs that could not be grouped into two or more constructs to form a meta-construct. This is slightly more than the expected 10% of the total number of constructs. This could possibly be because of the subcultures existing within the organization as members were drawn from different groups and there is a possibility that the constructs specified could be reflecting some of the unique characteristics of the subgroups to which they belonged (as discussed in Chapter 2, Section 2.3). The remaining 27 meta-constructs (of the 35) were included for further variability analysis.

Table 6.4 provides a summary of the variability and frequency of all the meta-constructs derived from the analysis of rep grids. The descriptions of the meta-constructs/categories embody the essence of the constructs included under each meta-construct selected here. For example, 'Diversity' was defined (based on discussions with Researcher B) to include the essence of what was mentioned in the form of constructs by various interviewees (e.g. interviewee 1 mentioned 'Diversity of experience', interviewee 2 mentioned 'People with a mixture of experience and diverse background', interviewee 3 mentioned 'Diversity of people', etc.). Therefore, based on all the relevant constructs in interviews 1, 2, 4, 5, 6, 7, 8, and 11, 'Diversity' was defined as: *"This refers to diversity of people within the organization. Diversity could be that of age, sex, ethnicity, religion, experience/background, industry, etc."* Likewise, definitions of all the meta-constructs were derived and are included in Table 6.4 for readers' reference under the column "Meta-construct Definition." The meta-constructs shaded grey in Table 6.4 have been selected as the key factors of innovation culture as perceived by managers. It should be noted that in Case B, 12 of those were found to be key.

Table 6.4: Results from rep grid data analysis

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Respondents	Meta construct Variability	Key Factor?
1	Diversity	KFA7	Diversity of experience	Int1	This refers to an organization having a diverse group of people – diverse in various respects such as educational background, experience, ethnicity, gender, geographical location, etc. supporting their projects	*"So I think having an organization which has a mixture of, I am gonna use that type of visible diversity, a mixture of young and old, female, male, different cultures or say different previous working environments and particularly in consulting, not just having career consultants but having that mixture of people who have been operational or you have worked in entrepreneurial environments" (Interview 2)* *If you get people from diverse cultures, backgrounds, religions, you name it, you end up with much more of a melting pot, and if you then foster a culture of challenge, or at least constructive conflict, then you are able to derive far more insight into each other and into problems, rather than accepting the first solution that comes along, because people can challenge that" (Interview 4)*	8	67%	9.22	Yes
			People with a mixture of experience and diverse background	Int2						
			Diversity of people	Int4						
			Diversity of experience and opinions	Int6						
			Younger people	Int8						
			Diversity	Int11						
			Mix of experience and diversity	Int7						
			Diversity of people	Int5						
2	Explore externally for innovation opportunities	KFA4	Leveraging new interactions (within/outside)	Int1	This refers to organizations reaching out to external partners/ organizations in order to be able to innovate in the marketplace. This could include (a) investing in utilising innovation that exists outside one's own organization to further foster and develop innovation internally, (b) acquiring other companies, investing and helping startups, buying new companies, and (c) building relations with 3rd parties to increase innovation	*"These guys would have lots of relationships with other businesses that would help them grow as a business......that would mean collaborating across different business which are external to an organization" (Interview 6)* *"Even if we don't a solution, can I get you a solution somehow through our partnersing eco-system?" (Interview 9)*	5	42%	8.99	Yes
			Collaboration with different businesses	Int6						
			Innovation through external stimulus	Int4						
			Partnering eco-system	Int9						
			Strategic acquisition for innovation	Int12						
3	Empowerment	NKFA6	Empowerment of the individual	Int4	This refers to an organization providing professionals the space and autonomy in their work environment without interference	*"Because the more empowered people are the more able or interested in changing their environment. The more they are able to speak up and say, "I am not too happy about this, can I change it?" (Interview 4)* *"I suppose from a culture perspective, does that culture allow you to feel empowered to do things. So, ideally you need lots of it, and we are probably quite close" (Interview 6)*	4	33%	9.33	Yes
			Empowered	Int6						
			Focus on outcomes	Int4						
			Decision-making and accountability down	Int10						
4	Challenging the status quo	NKFB1	Willingness to disrupt organization DNA for innovation	Int4	This refers to an organization that is continually focused on challenging their current practices, ways of working and willing to disrupt the way they operate	*"As per my definition of innovation, which is rooted in doing things differently, then if you are not open to being challenged on what you are doing today, then actually it's not conducive to creating an innovative culture" (Interview 4)* *"Organization is entrenched in current ways of working or traditional ways of working. I suppose this is focused on the willingness to accommodate individuals or teams do things differently." (Interview 8)*	7	58%	8.53	No
			Challenging current practices	Int2						
			Acceptance of challenge and different perspectives	Int6						
			Challenging the status quo	Int8						
			Encouraging new ways of working	Int6						
			Self perpetuating change from within	Int9						
			Outcome focused	Int1						
5	Best talent	NKFA4	High people's IQ (Intelligence Quotient)	Int1	This refers to having a workforce that is highly capable, creative and self-driven	*"If you are able to...would analyze and think more creatively and in a more sophisticated manner, should you also be more capable to take in a large amount of information and find those key canons of knowledge that might give you a trend or might give you an outlier or another" (Interview 1)* *"I do think there should be some organizational recognition in your recruitment strategy, in the capabilities you ask for from your people and in a way you test that through recruitment, through training." (Interview 2)*	5	42%	7.05	No
			Recruitment process recognises capabilities required for innovation	Int2						
			People have aptitude for innovation	Int10						
			Getting bright talent (age related)	Int8						
			Innovation thinkers	Int11						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Respondents	Meta construct Variability	Key Factor?
6	Safe environment	NKFB5	Team camaraderie (incl. trust)	Int1	This refers to a working environment where people are given an opportunity to air their views and generate ideas, and also feel safe about it	*"I think through this kind of environment you are much more likely to feel safe enough to experiment, and to be out of your comfort zone." (Interview 6)*	3	25%	7.61	No
			Strong feeling of being part of a team	Int6						
			Embracing flexibility of working methods - trust is the basis	Int4						
7	Client at the centre of innovation	KFA5	Awareness of impact on customer	Int3	This refers to an organization keeping the client at the centre of its innovation initiatives i.e., keeping the client at the centre of focus to develop innovative solutions based on their needs, problems/pain areas, industry need, etc.	*"I understand designing something which is technically better than the last product. But if it doesn't meet your client need, then it was wasted or in the worst case take away something the client wanted in the last product, the fact that if was slightly milder or something, then you have lost something." (Interview 9)*	5	42%	7.41	No
			Customer centricity	Int9						
			Responsiveness to what customer wants	Int12						
			Seeks to delight customer	Int5						
			Effective use of existing solutions adapted to clients	Int8						
8	Responsive to change	NKFB3	Responsive to change	Int1	This refers to an orientation within the organization to respond to any change in the environment	*"So the link is being able to see how the market changes. And being able to not just…. well it just changes the speed at which you can follow the market." (Interview 1)* *"So, instead of always doing the same thing all the time, defined by habit, much more conscious of what the market's doing and equally their value proposition within the markets and how that needs to evolve." (Interview 2)*	4	33%	6.76	No
			Responsive to environment	Int2						
			Innovative to respond	Int8						
			Pace from thinking to acting (respond to opp. quickly)	Int10						
9	Leadership focused on innovation	NKFA1	Leadership commitment to Innovate	Int2	This refers to the focus that leadership accords to innovation in terms of providing the necessary guidance and support to teams on the ground	*"If you don't have a kind of management team, a leader that is saying this is critical to our future business, to be able to innovate, and do things in a different way, and continually learning, you know, then you don't stagnate" (Interview 2)* *"So, I think that staff below those levels respond to leadership's visible commitment to innovation because it gives them direction in terms of what their leadership, what their organization is pointing towards" (Interview 7)*	3	25%	10.87	Yes
			Innovation is an explicit priority at the top level	Int3						
			Tone from the top	Int7						
10	Coaching and mentoring	KFB2	Managers/leaders coach extensively	Int1	This refers to an organization providing juniors with more support from seniors so they are able to work together on innovation	*"So, managers and leaders coach extensively....so, I think this is about, more senior people in the organization will have had bigger and more creative and bigger thoughts, and the more they can pass those and to help others to develop more critical capabilities the better" (Interview 1)* *"It's about being able to have a kind of dialogue* [between juniors and seniors]*, a discussions around it [innovation]" (Interview 7)*	4	33%	9.89	Yes
			Role model to support innovation processes	Int7						
			Coaching organization	Int12						
			More encouragement of innovation	Int8						
11	Allow experimentation	NKFA16	Safe place to try new ideas	Int3	This refers to allowing people to experiment on various aspects of solutions with regard to solving problems for clients	*"There is no feeling in these businesses that you can really afford to do anything that might break something, it's gotto be dead sure otherwise we're not going to do it." (Interview 3)* *"If you measure everything ultimately by its success, people tend to only do those things they know are going to succeed, if you are comfortable with people trying something different, and it failing, then people are more willing to try and change" (Interview 12)*	4	33%	8.50	No
			Encourage people to make mistakes and learn	Int12						
			Experimental	Int10						
			Willingness to experiment	Int4						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Respondents	Meta construct Variability	Key Factor?
12	Innovation execution capability	KFA1	Pathway to progress ideas to fruition	Int2	This refers to organizations building the ability to drive successful innovation implementations and change, i.e., having the necessary knowledge, resources, processes and capability to deliver innovation	*"So in an ideal organization, you understand that if you have an idea this is what you do to describe that idea, this is how you tell people about the idea, this is how it gets considered and backed or invested in...you would have confidence that if it is a good idea, you would have an opportunity to generate something from it" (Interview 2)* *"There should be some sort of process of managing that idea, addressing it correctly and filtering it through the innovation funnel, everything goes into it, and everything gets chopped away until it is a good idea" (Interview 3)*	6	50%	7.36	No
			Having an innovation funnel	Int3						
			Processes to support innovation	Int7						
			Innovation portfolio management and delivery control	Int11						
			Structure around innovation	Int5						
			Funding is centralized and distributed through portfolio governance	Int8						
13	Balanced teams	KFB1	Balanced teams are important	Int4	This refers to project teams having the right set of skills so that individual team members' learning is enhanced and the team members in turn contribute to collectively solving client problems	*"You recognise that you have to have alpha personalities that are drivers and you have to have collaborative people who are able to get the best out of the people, you have to have planners who understand how the bigger picture looks like, you have detailed people who need to really understand and drive the detail. This is not diversity, it is how you bring the right teams with right skills together overcoming the structures within the organization" (Interview 4)* *"This aspect of working in projects would actually lead to bringing in different skills to the team ... you are actually learning different things... you learn from others on the project... you are basically solving a [client] problem" (Interview 10)*	5	42%	10.95	Yes
			Collaboration and constantly evolving teams	Int12						
			Multi-functional innovation team (structure related)	Int11						
			Think balance of left brain and right brain	Int8						
			Combination of teams around change or opportunities	Int10						
14	Willingness to change	NKFB2	Individual's ability to embrace change	Int12	This refers to an organization (and individuals within it) having an inclination to embrace change, which is very much inherent, generally exhibited by interest in learning new things as an organization	*"These two [referring to two client organizations] are trying to learn from different sectors and trying to apply elsewhere, whereas this one seems much more internally focused in innovating, I see less evidence of it looking at the most innovative and saying, "How can I change myself?" This one is sector siloed. These ones are looking at other sectors and learning from and the opposite is happily keep going!" (Interview 12)*	6	50%	8.58	No
			Hungry for research and new thinking	Int5						
			Desire to innovate is from within	Int8						
			Curious about other sectors and learning	Int9						
			Non-hierarchical matrix structure	Int4						
			Acting decisively	Int10						
15	Knowledge sharing culture	NKFA12	Embrace new technologies and ways of working	Int4	This refers to a culture where knowledge is shared across the organization (between various functions, individuals, disciplines)	*"It's about a kind of culture that is associated with innovation championing, that kind of exchange of knowledge.....incentivizes people to kind of share that knowledge....and share and collaborate around whatever the article it is around, so this is about sharing culture and around information." (Interview 7)*	4	33%	8.60	No
			Information sharing culture	Int7						
			More collaboration	Int5						
			Knowledge sharing	Int9						
16	Strong growth focus	NKFA11	Ambitious and acting on ambitions at different levels	Int6	This refers to an organization setting themselves high growth targets, which can in turn drive internal teams to come up with innovative ideas to achieve those growth targets	*"Ambitious in terms of wanting to be a particular sort of company. In my previous place they had in both companies they had the ambition to grow and be successful" (Interview 6)* *"Thinking about growth strategy.....you know what your market is, how much you want to grow, and to grow you need to be innovative, creative to deliver that growth strategy and people have something to anchor to" (Interview 12)*	4	33%	9.26	Yes
			Clear growth strategy	Int12						
			Ambition to be the best	Int10						
			Set ambitious targets	Int9						
17	Recognise the need for innovation	NKFB6	Recognition of the need for innovation	Int4	This refers to an acknowledgement within an organization that they need to change and that there is a need to be innovative in the marketplace	*"The world's really flexible, and quick to change, there is an expectation of newness, there's an expectation within the client organizations of something different...that is why you need recognition for innovation" (Interview 4)*	3	25%	6.87	No
			Awareness of importance of new product/ service development	Int3						
			Willingness to embrace change	Int9						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Respondents	Meta construct Variability	Key Factor?
18	Supporting technology for innovation	KFA12	Effective use of technology for innovation	Int8	This refers to how organizations can use technology to support their innovation initiatives	"I think by using technology we can be more innovative. For example, by creating apps we can use them as a means to an end of being innovative. I am not going to accept status quo, I will use technology, as often technology has got an innovative way of doing things" (Interview 8)	3	25%	8.29	No
			Performance measurement and technology (Management Information)	Int11						
			Tools to support innovation	Int9						
19	Innovation focus at all levels	NKFA2	Innovation at every level	Int3	This refers to an organization having people at all levels fully focused on innovation	"So these two [referring to two client organizations] are similar because innovation is something that is done by the R&D lab, and the ideal, I guess, has innovation at every level, practically at every level." (Interview 3)	3	25%	6.84	No
			Encourage people to come up with ideas	Int10						
			Communities of shared interest	Int7						
20	Decision-making downwards	NKFB7	Devolved innovation	Int12	This refers to allowing people at various levels to make decisions instead of having a single decision maker	"These two are good because they have heavily devolved innovation, heavily devolved control over what is right and what is wrong. So, they are both enabling organizations, rather than controlling organizations" (Interview 12)	3	25%	6.31	No
			Less hierarchical	Int5						
			Evaluating ideas unconstrained	Int3						
21	Rewarding innovation	KFA2	Recognition of innovation in people processes	Int2	This refers to an organization having a formal rewards and recognition programme, which is tightly mapped to the innovation value generated/targets, to ensure that innovation is appropriately rewarded	"So, if the leading consulting sends out a newsletter and celebrates somebody achieving a successful project but it was all based around doing things differently….or it could be monetary, so it could be the xyz type where you are actually making time for the people and you are saying it's just a different form of recognition, which tells the people that's what you value in people" (Interview 2)	3	25%	7.13	No
			Mechanism to reward innovation	Int7						
			Incentives	Int11						
22	Enabling people to build knowledge to innovate	NKFA9	Encouraging personal development	Int1	This refers to an environment where consultants are supported through formal learning/training	"Personal development...really simply if we are not keeping people informed about ideas that are out there in the world, then I think it would be foolish to imagine that in any situation you could out-innovate the world" (Interview 1) "Training peoples' capabilities broadens people's mind to kind of have a wider level of knowledge and expertise that then enables them to kind of link stuff in and actually think, maybe we could have done a little more here rather than not" (Interview 7)	3	25%	10.83	Yes
			Training to broaden people's capacity	Int7						
			Investment in ideas	Int12						
23	Access to top management	KFB3	Access to top management	Int1	This refers to professionals having easy access to management so they are able to have discussions on innovative ideas and also easily go through relevant approvals for innovation	"Access to management allows inspiration. So it allows more junior people to go....oh, it's a great idea and take it to more senior people directly rather than have it filtered through each level internally" (Interview 1) "They [people/employees] can go beyond that hierarchy easily without having to invest time or think about strategies; it is normal for you to walk up to someone's desk and say I have this great idea and I think it needs to be developed" (Interview 2)	3	25%	12.16	Yes
			Flexible ways of working across levels	Int2						
			Anyone can speak to the boss	Int8						
24	Reinventing the business	NKFA5	Adapt business model to change	Int10	This refers to organizations continually looking to refresh themselves in terms of their areas of focus in the marketplace and also the way they deliver work to clients	"I think it is your ability to change and evolve as a business that is important" (Interview 6) "You are constantly thinking about changing what you do in the market, you are constantly thinking about adding value in the marketplace" (Interview 11)	3	25%	9.21	Yes
			Business model alongside product innovation	Int11						
			Ability to change and evolve as a business	Int6						
25	Risk taking	KFB4	Mistakes seen as part of the innovation process	Int5	This refers to allowing professionals to make mistakes in order to be able to identify various options to innovate	"If you want to offer new products and services, then you've got to be prepared to accept failure" (Interview 9) "This one [referring to an organization] is constrained because of an existing practice within the organization, which means, it limits the market and also because from a governance perspective it limits the risk they are willing to take" (Interview 6) "Mistakes are seen as part of the innovation process" (Interview 5)	3	25%	10.24	Yes
			More risk taking	Int9						
			Risk appetite	Int6						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Respondents	Meta construct Variability	Key Factor?
26	Actively tracking market trends and aligning	NKFA8	Innovation is new than just repackaging	Int3	This refers to an organisation actively tracking market trends and aligning to market requirements/needs	*"So that will impact on the culture of innovation because these guys are constantly looking for ways to repackage what they do, but not necessarily change the underlying what they do really is just repackaging. That's repackaging! Whereas these guys genuinely have to innovate* [based on how the markets are moving]" (Interview 3) *"The ideal one is one which is able to look at the market to see where there is a problem in the market, there's opportunities and investigate and find there is an actual opportunity to check if anybody is occupying this space, is the market ripe for disruption"* (Interview 6)	3	25%	8.58	No
			Ability to market genuinely different products/services	Int6						
			Identifying opportunities in the market actively	Int9						
27	Focus on identifying the value of innovation	KFA10	Commercial orientation	Int11	This refers to organizations measuring the value generated (or realized) by organizations against the investments they make in innovation initiatives	*"This is about commerciality as to how you are going to exploit this innovation commercially rather than having a lot of bright people doing interesting things, actually they don't get pull through revenue for that"* (Interview 12) *"It* [measurement and metrics] *devolves innovation down to the level of individual teams; this company* [referring to an organization] *has been very successful because they drive measurement down to the granular level, you become very safe, very robust and very sustaining"* (Interview 11)	3	25%	9.17	Yes
			Long term focus and payback	Int9						
			Granularity of metrics	Int12						
28	Dedicated time for innovation	KFA9	Time to think, strategise and plan	Int2	This refers to individuals being given time to reflect on consulting engagements being delivered (or delivered) to develop innovative ideas	*"And I think that an organization that gives – and am totally talking about consulting – that give building enough time for someone to think about client's problem before it rolls out a solution; it's incredibly important to innovation." (Interview 2) "So, if you have a culture that is very kind of high utilization, you cannot give people the space to be then able to have the time to think about what innovation might look like." (Interview 7)*	2	17%	NA*	No
			Supporting time to innovate	Int7						
29	Investments in innovation	NKFA17	Skunk works	Int9	This refers to an organization setting aside funds dedicated to innovation	*"But I think what's happening is they are trying to drive innovation from within...set up a different group within the same organization..if it doesn't work, try different things, setting up a group with investment funds or whatever, totally separate, running its own way, not constrained by the existing policies and procedure, in some respects not constraining them." (Interview 9)*	2	17%	NA*	No
			Investment in supporting technology for innovation	Int7						
30	Playfulness at work	NKFB8	More relaxed and potentially more closer to creativity	Int5	This refers to having a relaxed and fun-filled work environment i.e., more fun at work	*"Really enjoying what you are doing. It makes you feel good having fun. I think I suppose it is about the type of work, and it is also about success you have. You do interesting stuff and if you are successful then that's fun" (Interview 6)*	2	17%	NA*	No
			Fun	Int6						
31	Physical environment	KFA8	Access to physical spaces	Int1	This refers to employees being provided with the right physical space and facilities that are conducive to innovation	*"I respect that it is useful to have a place you can work and have a routine, but actually having a place that you can go to be creative and to take yourself out of the routine and create new and have that as an accessible opportunity for you. A classic example would be xyz campus, as opposed to, we always work at our desks and we have meetings rooms that are exactly the same." (Interview 1)*	2	17%	NA*	No
			Flexible working	Int12						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Respondents	Meta construct Variability	Key Factor?
32	Innovation defined and understood	NKFB9	Meaningful definition of innovation	Int2	This refers to an organization clearly defining what innovation is for all employees as a common reference point	*"So, if you just only have commitment to innovation, it is absolutely meaningless. So actually defining what that means and, I think just from the consulting perspective, defining what that is not only within your industry but also for your organization, is incredibly important" (Interview 2)*	2	17%	NA*	No
			Understand the language of innovation	Int3						
33	Communicate success stories	NKFB10	Good communication on innovation and its benefits	Int3	This refers to sharing success stories internally within the organization	*"Yeah, communication is the key way in which we influence people's behavior – it kind of guides people's behaviour, it's not only incentivizing them, but it is sign posting for them." (Interview 3)*	2	17%	NA*	No
			Communicate success stories	Int7						
34	Driven to innovate due to external factors	KFA11	Having clients demanding innovation	Int5	This refers to an organization being forced to innovation due to factors external to them. Examples of factors could include clients, competition, business environment/ regulatory, etc.	*"Having clients that demand innovation as they see value in innovation" (Interview 5)* *"In consulting at least is why clients would come to us to get innovative ideas, so that helps us to be different" (Interview 8)*	2	17%	NA*	No
			Market pressure to innovate	Int8						
35	Miscellaneous	NA*	Ownership and accountability	Int6	NA*	NA*	14	NA*	NA*	No
			High people's EQ (Emotional Quotient)	Int1						
			Unconstrained by external politics	Int5						
			Living the values of the organization	Int6						
			International footprint of business	Int7						
			Change from without	Int9						
			Alignment to business strategy	Int11						
			Clear message to the market that company does innovation	Int12						
			Openness to communication	Int1						
			Workforce turnover	Int10						
			Being purposeful	Int6						
			Blend of intuition and analysis	Int5						
			Data-driven decisions	Int1						
			"Can do" attitude	Int11						

Legend: KFA–Key Factor for Case A (repeated in Case B); NKFA–Non-Key Factor in Case A (repeated in Case B); KFB–Key Factor for Case B; NKFB–Non-Key Factor in Case B

The next two sections provide details of the analysis of documents and observations respectively as supporting evidence for the key factors of innovation culture.

6.3.2 Documents: Supporting Source of Evidence for RQ1

6.3.2.1 Data Collection

Documents from the public domain such as annual reports (2014, 2015), website publications, website internal surveys, latest press releases and archives (dating back to 2013), and Internet-based publications concerning the firm were collected for review and analysis. A total of 237 pages were included in the analysis. Please refer to Table 6.5 for details. The data collection effort was fully focused on aspects that are relevant and central to the study (Yin, 2009), i.e., the key factors that were identified as important for innovation culture. Each of the documents listed in the table had a different purpose, which meant that they would not lend themselves easily to analysis (Yin, 2009). Therefore, caution was exercised in reviewing the documents to ensure that understanding of the context was maintained while the coding was undertaken. How the coding was undertaken is explained next.

Table 6.5: Documents analyzed for Case B

No. of pages	Document	Characteristics	Comments
76	Annual report – 2014	Pdf Annual report/firm website	Available in public domain. Reviewed all sections of the report.
87	Annual report – 2015	Pdf Annual report/firm website	Available in public domain. Reviewed all sections of the report.
41	Archives	Firm website news/press releases	Available in public domain. Reviewed all recent press releases from January 2013 to April 2016.
1	Firm's Latest Press Releases	Firm website news/press releases	Available in public domain. These are the most recent press releases as at May 2016.
2	Other Internet press releases	Internet website	Available in public domain. Searched for initiatives mentioned in the annual report 2015.
13	Publications (relevant to the topic)	Firm website	Available in public domain. Reviewed publication titles and looked for information on the firm presented in the reports as evidence of the topic of the publication.
1	Events	Firm website	Available in public domain. This covers seminars or presentations planned to be delivered this year (2016).
16	Data Blog	Firm website	Available in public domain. This covers all data blogs of the firm.

6.3.2.2 Data Analysis

The analysis/coding of documents followed two simple steps: descriptive coding and summarizing data. The coding frame (see Appendix 6-1), developed as part of the earlier analyses (i.e., the codes from rep grid analysis) was used as a template for document data analysis. However, care was taken to make sure the warning *"Be Careful: if you go looking for something, you'll probably find it"* was taken seriously by way of reading the documents multiple times (Saldaña, 2013: p. 89).

Step 1: Descriptive Coding

Table 6.6 presents an example of quotes that were coded that relate to 'Diversity' (KFA7, an important factor of innovation culture for Case B, also noted in Case A).

Table 6.6: Code mapping to key factor of innovation culture

No.	Relevant statement extract	Key Factor Code	Code Name	Notes/ analysis	Reference Document
1	*"We recently announced … to report that x% of our…partners are women. Diversity is…at the highest levels of the firm "*	KFA7	Diversity	There is evidence from documents that the firm focuses on Diversity (Diversity of Gender)	Annual report 2015
2	*The firm… is… innovative and always* [ready] *to embrace change… how…I ended up … through the door!"*	KFA7	Diversity	*" How I* [a sports person] *ended up… through the door!* [into a consulting organization]*"* (Diversity of Experience)	Data blog, May 2016

Step 2: Summarizing evidence from documents

A summary of the analysis of documents was produced at this stage (for confidentiality reasons, the full coding details are not available for review). For example, in this case it was noted that there is documented evidence that 'KFA7-Diversity' exists. At least nine references across the various documents indicated the importance of diversity. Thus, the document analysis provided supporting evidence to bolster the evidence from rep grid analysis. The full details of the amount of supporting evidence are summarized in the next subsection.

6.3.2.3 Summary of Findings

Each factor of innovation culture has had varied levels of supporting evidence collated from the documents analyzed (see Table 6.7). The frequency of occurrence indicates the level of importance accorded by Case B to the factors of innovation (factors have been shaded where evidence was available); this of course was limited by the amount of documentation available to the researcher for review.

Table 6.7: Level of documentary evidence supporting RQ1

No.	Final meta-construct	Code	Documentary Evidence	Frequency of occurrence
1	Diversity	KFA7	Yes	9
2	Balanced teams	KFB1	Yes	3
3	Explore externally for innovation opportunities	KFA4	Yes	10
4	Empowerment	NKFA6	Yes	1
5	Coaching and mentoring	KFB2	Yes	8
6	Strong growth focus	NKFA11	Yes	4
7	Access to top management	KFB3	None	0
8	Leadership focused on innovation	NKFA1	Yes	3
9	Enabling people to build knowledge to innovate	NKFA9	Yes	14
10	Risk taking	KFB4	Yes	3
11	Focus on identifying value of innovation	KFA10	Yes	2
12	Reinventing the business	NKFA5	Yes	3

Thus, documents have been used as a source of supporting evidence with regard to key factors of innovation culture to answer RQ1. Next, supporting evidence in the form of observations is discussed.

6.3.3 Observations: Supporting Source of Evidence for RQ1

6.3.3.1 Data Collection

In the case of observations, given the time and resource constraints, observational data were written down (as field notes) (Yin, 2009) while the visits to Case B were made for the purpose of interviews and focus group discussion. Two London office locations and one Birmingham office location have been included in observations. Various aspects such as books, attractive captions displayed in the reception area, LCD displays, the general layout of the work spaces, kitchen area/cafeteria areas, meeting rooms, people gatherings, and executive suite area have been observed.

6.3.3.2 Data Analysis

In line with the analysis of documents, the analysis undertaken of field notes followed two simple steps: descriptive coding and summarizing data. The coding frame in Appendix 6-1, developed as part of the earlier analysis, was used as a template for analysis.

Step 1: Descriptive Coding

Table 6.8 presents examples of coding quotes from field observations that relate to 'KFA7-Diversity' (supporting evidence) and 'KFB3-Access to top management' (supporting evidence). Refer to Appendix 6-2 for coding details.

Table 6.8: Code mapping to key factor of innovation culture

No.	Observation from field notes	Key Factor Code	Code Name
1	Minority communities, religious communities, "Be XYZ….Different"	KFA7	Diversity
2	There are advertisements for networking events such as XYZ (access to management through networking)	KFB3	Access to top management

Step 2: Summarizing evidence from observations

Some observations where there were displays of activities associated with religious communities, minorities, etc. does provide some evidence around the focus the organization accords to 'KFA7-Diversity'. Also, events such as XYZ (cannot be disclosed for confidentiality reasons) for networking across the organization, with senior leaders included, are indicative of efforts on the part of leaders to connect with employees and allow access to reach out to them and also facilitate networking among employees. Thus, observational analysis provided some supporting evidence to be evaluated in conjunction with the evidence from rep grids, focus group, and document analysis, but has been largely limited. Observations could not be used as concrete evidence, especially with factors such as 'BKF1-Balanced teams', 'BKF2-Coaching and mentoring', as that would require the researcher spending a significant amount of time. The available evidence from the summary of observations is presented in Table 6.9.

Table 6.9: Summary of field notes and evidence from observations

| No.	Code	Code Name	Summary of observations from field notes	Evidence from observations
1	KFA7	Diversity	Minority communities, religious communities, Be XYZ and... Different. This is an evidence of diversity related initiatives	Yes, but limited supporting evidence
2	KFB1	Balanced teams	None	No
3	KFA4	Explore externally for innovation opportunities	None	None
4	NKFA6	Empowerment	Partners within the organization have their own cabins. But they tend to be used by anybody when they are not around. This is evidence (indirect though) that there is empowerment within the organization where people can use partners' space and other facilities as and when they need	Yes, but limited direct supporting evidence
5	KFB2	Coaching and mentoring	None	None
6	NKFA11	Strong growth focus	None	No
7	KFB3	Access to top management	There are advertisements for networking events such as XYZ. This is a forum where all (seniors/juniors) can connect	Yes, but limited direct supporting evidence
8	NKFA1	Leadership commitment to innovation	The following are some of the initiatives from leadership to make sure employees are happy and can contribute well: There is a staff canteen area with facilities such as refreshments, cash machines, and train ticket booking machines (so employees don't lose much time) There are beautiful seating arrangements (where people can relax and have meetings)	Yes, but limited direct supporting evidence
9	NKFA9	Enabling people to build knowledge to innovate	There are many books/ firm publications on display - recent trends in taxation, outsourcing, company strategies, consulting collaterals, etc. are on display. There is a library and access to all relevant material (journals, practitioner publications, etc.) is given to employees. This is evidence (limited though) of how the firm seeks to keep their employees informed	Yes, but limited supporting evidence
10	KFB4	Risk taking	None	None
11	KFA10	Measurement of value of innovation	None	None
12	NKFA5	Reinventing business model	None	None

6.3.3.3 Summary of Findings

Each factor of innovation culture has had varied levels of supporting evidence collated from the observational field notes analyzed. This evidence, limited though, was used to understand the culture within the organization (e.g. aspects such as partners having their own cabins but allowing others to use them, excellent physical layout, and focus on clients through their reception). This also provided some insight into why some factors have not emerged as important (e.g. they have excellent 'KFA8-Physical Environment' so physical layout was less of a priority to Case B than it was for Case A for instance).

6.3.4   Discussion

Out of a total of 34 factors (#35 was 'Miscellaneous' and excluded), 12 have been identified as important based on the rep grid interviews, supported by evidence from documents and observations. This section discusses the important factors in the context

of the organization, considering the evidence that is available through documents and observations (see Figure 6.1). Please note that the discussion is only on the key factors, the definitions of the non-key factors for Case B are available in Table 6.4.
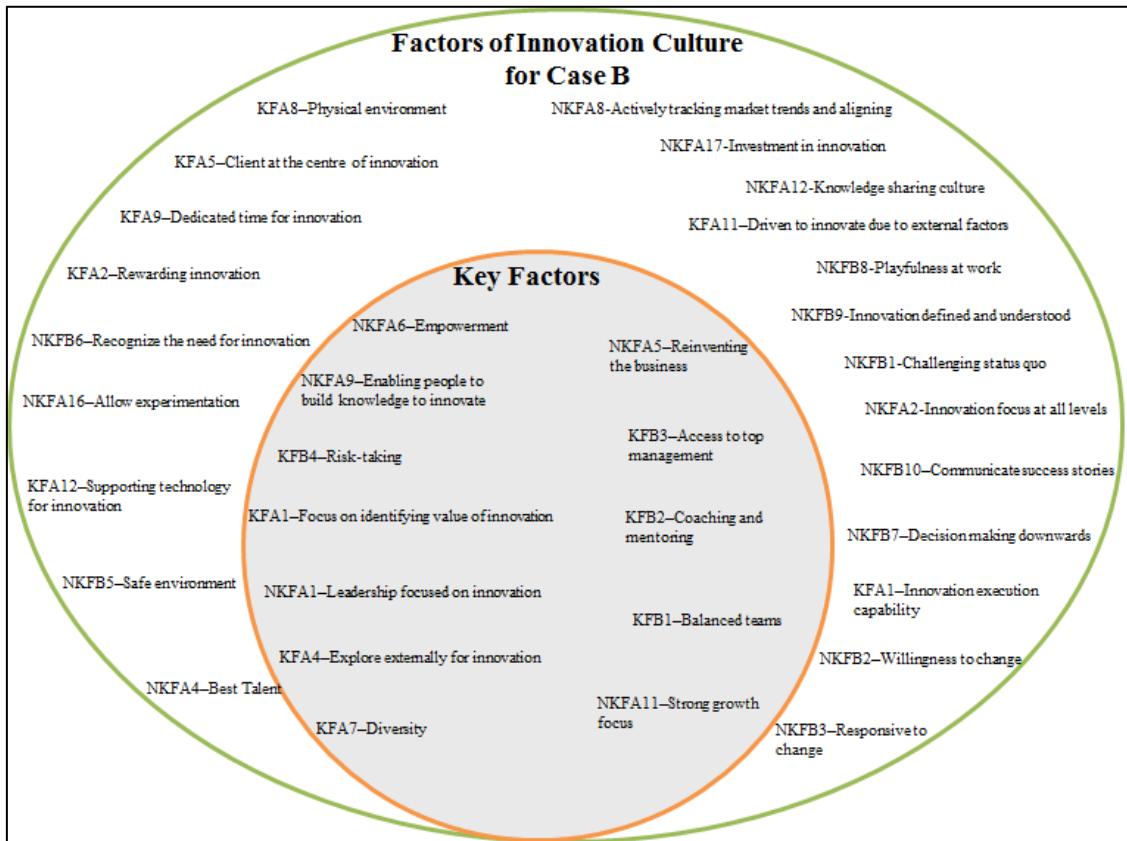
Figure 6.1: Factors of innovation culture from Case B (Key factors are shaded grey)

'KFA7–Diversity'. One of the key factors that support innovation in consultancies is Diversity (Ernst & Young, 2010). One interviewee said, "*If you get people from diverse cultures, backgrounds, religions… you end up with much more of a melting pot, and if you then foster a culture of challenge…you are able to derive far more insight from each other and into problems*" (Senior Consulting Manager, Banking & Insurance). Documentary evidence suggests that there are initiatives supporting gender diversity, religious and ethnic diversity, and diversity of experience. Also, observations noted displays on bulletin boards of initiatives that relate to religious and ethnic diversity. The key finding is that, broadly, all types of diversity are important for a culture of innovation. However, further evidence is required to understand how it is being leveraged specifically for innovation.

'KFB1–Balanced teams'. Case B highlighted the relevance of balanced teams for innovation, i.e., teams with the right skills so that creates an environment of learning on the job, which can then be leveraged to solve client problems (a form of innovation in PSFs (O'Mahoney, 2011)). One interviewee said, *"This aspect of working in projects would actually lead to bringing in different skills to the team … you are actually learning different things… you learn from others on the project… you are basically solving a* [client] *problem"* (Senior Consulting Manager, Government and Health Industries). Documentary evidence suggests that Case B looks into specific levels of experience, competencies and grade when resourcing projects to ensure that not only are the teams correctly skilled and resourced but are also given opportunities to work on a wide range of projects to keep them motivated (70% of their professionals' learning happens on the job – Annual Report 2015). Therefore, the key finding is that a good mix of team members' relevant skills creates a learning environment for a culture supportive of innovation.

'KFA4–Explore externally for innovation'. PSFs' clients are increasingly looking for companies to partner (in a multi-source context) and provide them with more value through best-of-breed end to end solutions (O'Mahoney, 2011). One interviewee said, *"Even if we don't have a solution, can I get you a solution somehow* [this is what Case B would say to clients] *through our partnering eco-system?"* (Senior Consulting Manager, Telecommunications). Documentary evidence shows that Case B pursues strategic alliances, acquisitions, and partnerships to rapidly build service offerings and internal capabilities to respond to market needs, and be able to go-to-market/bid for consulting work with their partners. For example, in May 2015, they had a joint business relationship with XYZ to build their data analytics capabilities in order to be able to provide new and innovative data services to clients. So, the key finding is that PSFs are reaching out to external sources of innovation to support their go-to-market strategy.

'NKFA6–Empowerment'. It has long been established that PSFs recognize the need for consultants to operate flexibly as *"individual experts"* with autonomy and the ability to change things (Reihlen & Werr, 2012: p. 8). One interviewee said, *"I suppose*

from a culture perspective, does that culture allow you to feel empowered to do things? So, ideally you need lots of it [empowerment for innovation]*, and we are probably quite close"* (Partner, Financial Services). Another said, *"Because the more empowered people are… the more they are able to speak up and say, 'I am not too happy about this, can I change it?'"* (Senior Consulting Manager, Banking & Insurance). Documentary evidence suggests that Case B fully supports the idea of empowering their employees, especially in the context of innovation: *"We have…people who are innovative…they are empowered"* (Annual Report 2015). The key finding is that when professionals are empowered, it creates an environment with sufficient room to do and change things, and that creates an environment conducive for innovation.

'KFB2–Coaching and mentoring'. Coaching enables junior staff to learn consulting skills from the rich experience of senior managers. From Case B, the relevance of coaching has been noted in the context of innovation culture. *"More senior people…will have had bigger and more creative and bigger thoughts, and the more they can pass those* [on] *to help others to develop more critical capabilities* [to innovate] *the better"* (Consulting Manager, Strategy). Documentary evidence suggests that coaching is an integral part of Case B as it is one of the vehicles Case B uses to enable their people to learn. One source suggests, *"We offer…opportunities to grow…training programmes…on-the-job* [training]*, mentoring…"* (Annual Report 2015). The key finding is that coaching includes opportunities to learn from senior managers, where junior members of staff get involved in discussions with them on innovative client solutions, and that builds juniors' skills, and thus they are also able to grow within the firm.

'NKFA11–Strong growth focus'. Maister (2003) highlights the fact that most firms generally know what their clients need. The key differentiator then would be what *"will make the firm's services more valuable to clients than the services of competing firms"* (Maister, 2003: p. 224). He says that strategy is not analytical but a fundamentally innovative activity and that firms need to find new ways of doing things. One interviewee said, *"Thinking about growth strategy….you know what your market is, how much you want to grow, and to grow you need to be innovative, creative to deliver that growth*

strategy" (Partner, Global Innovation and Development). Documentary evidence suggests how Case B, through structured opportunity identification, helped a CEO who targeted $Xbn revenue from innovation. The key finding is that ambitious targets drive internal teams to find new and innovative ways of achieving those targets and new ways of delivering existing services.

'KFB3–Access to top management'. Smets et al. (2011) in their recent research study on PSFs, highlighted the amount of support junior team members need for innovation. Highlighting the importance of time required to progress ideas to implementation and how easy access to top management can be helpful, one interviewee said, *"They* [people/employees] *can go beyond that hierarchy…it is normal for you to walk up to someone's desk and say I have this great idea…actually everyone is allowed…to bring those ideas forth into development"* (Consulting Manager, Government and Health Services). No supporting documentary or observational evidence was available for this key factor. The key finding here is that management needs to allow access to them to enable junior staff to seek support with regard to taking ideas from generation through to implementation.

'NKFA1–Leadership focused on innovation'. Although professionals in PSFs are very intelligent and like autonomy (Maister, 2003; Reihlen & Werr, 2012), such energetic, intelligent and self-starting professionals can act in their own interests and that can inhibit innovation (Reihlen & Werr, 2012). Therefore, there needs to be an explicit focus on innovation in order to steer such intelligent people in the direction of innovation. One interviewee said, *"If you don't have…a leader that is saying this is critical to our future business, to be able to innovate... you can stagnate"* (Consulting Director, Industrial Products). Documentary evidence suggests that the leadership in Case B is investing in personal relationships, encouraging junior staff to discuss diverse viewpoints, new ideas, practices and technologies, and to have a thirst for learning. The key finding is that, in cases where employees are fully empowered, there needs to be a form of focus and direction from leadership, potentially through their visible commitment to innovation.

'NKFA9–Enabling people to build knowledge to innovate'. PSFs have expertise as their core competency (Starbuck, 1992) and the professionals' know-how and know-what are the critical components in the production of goods and services (Maister, 2003). One interviewee said, *"Really simply if we are not keeping people informed about ideas that are out there* [through formal training]*, then I think it would be foolish to imagine that in any situation you could out-innovate the world"* (Consulting Manager, Strategy). Case B employs formal training (in addition learning/coaching on the job) as their strategy to enable learning within the organization. Documentary evidence suggests that Case B supports personal development through formal training (e.g. a million training and personal development hours each year). The key finding is that, although formal training constitutes a lower percentage (10%) of the total learning experience for consultants in Case B, it is nevertheless important as it can provide triggers to new areas of knowledge-creation, and creation of new knowledge (thought leadership) is innovation (O'Mahoney, 2011).

'KFB4–Risk-taking'. PSFs generally have brand and reputation concerns that can make them risk averse[58] (Bhutiani et al., 2013). One interviewee said, *"My previous organizations –accountancy firms – were hugely risk averse as well, because of reputation"* (Partner, Financial Services). This can be inherently damaging to innovation as *"Mistakes...* [should be] *seen as part of the innovation process"* (Partner, Entertainment and Media, Retail and Consumer). Documentary evidence suggests that Case B's risk and quality framework, in addition to other areas, such as quality of delivery, reputation etc., includes evaluation of engagements related to new business and digital disruption where innovation applies. The key finding is that tolerance for mistakes is equally important to PSFs for innovation. So, instead of avoiding risk completely, practices in Case B suggest a controlled way of dealing with risk with regard to innovation practices.

'NKF10–Focus on identifying value of innovation'. The different forms innovation takes can lead to different ways of measuring innovation. The nature of what

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[58] *According to a research study undertaken in PSFs in London, 94% of respondents cited that despite the growing culture of risk aversion, clients are still demanding innovation, and 90% stated that allowing for mistakes is central to developing innovation (Bhutiani et al., 2013)*

innovation is in PSFs[59] can lead to a lack of clarity in measurement, and consequently the inability to track the return on investment made on innovation. Emphasizing the need to focus on innovation initiatives that deliver appropriate value, one interviewee said, *"This is about commerciality…to exploit this innovation commercially, rather than having a lot of bright people doing interesting things, actually they don't get pull through revenue for that"* (Consulting Manager, Technology, Information). Revenue for PSFs is based on billable hours of their professionals' time (Ross, 2015). It becomes all the more important to track the amount of return that is being realized through making such investments of time on innovation. Documentary evidence (Case B's client case studies) suggests that Case B recommends to its clients the measurement of value of innovation as a primary aspect of managing investments on innovation to track value generated. The key finding is that measurement of innovation is crucial for assessing the amount of business value that innovation generates for the investment (of time, sacrificing billable hours) made.

'NKFA5–Reinventing the business'. Businesses can fundamentally reinvent themselves[60] by identifying new ways to do business (Maister, 2003), new ways to engage with channel partners (Amit & Zott, 2012), and also writing new rules to compete in the marketplace (Maister, 2003). One of the interviewees said, *"I think it is your ability to change and evolve as a business that is important"* (Consulting Director, Industrial Products). Another said, *"You are constantly thinking about changing what you do in the market, you are constantly thinking about adding value in the marketplace"* (Consulting Manager, Technology, Information). The interviewees discussed how a desire to continually change and redefine themselves as an organization drives internal behaviours (e.g. behaviours of leveraging ideas from all quarters of the organization): *"It is about the ideas that come across from product and commercial side coming alongside each other…you can't just have the techie-geeks"* (Consulting Manager, Technology, Information, Communication). Documentary evidence suggests that Case B is investing in new technology capabilities/platforms and also looking to develop new cost structures

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[59] *In PSFs, innovation can take many forms: new products and services, incremental improvements to existing products and services, solving client problems, and thought leadership (O'Mahoney, 2011)*

[60] *Although this sounds similar to KFA4–Explore externally for innovation opportunities, acquiring and partnering in this instance could be a means to an end, i.e., relating to reinventing themselves. They are not both exactly the same. Reinventing specifically refers to the principle of having an inherent strategy and the necessary penchant for continually refreshing or renewing themselves as a business.*

to deliver quality services to clients while they start actively leveraging internal capabilities from the various competency groups within the organization. The key finding is that, the desire to continually look to reinvent businesses is important so that it drives new thinking and new ways of bringing skills from across the organization to deliver value in the marketplace.

6.4 RESULTS FOR RESEARCH QUESTION 2 (RQ2)

This section provides details of the data gathered, analysis, and findings from the focus group discussion, which was used as the primary, and only, source of evidence to answer RQ2 (*Why are these factors* [derived from the answer to Research Question 1] *important?*) and also the discussion relating to RQ2 with respect to Case B.

6.4.1   Focus Group: Primary Source of Evidence for RQ2

6.4.1.1 Data Collection

An invitation was sent to all 12 interviewees inviting them to attend the focus group (see Appendix 6-3 for invitation details). Although four accepted, only three attended (see Table 6.10). However, the sponsor joined the discussion as a fourth participant. The focus group lasted for 2hrs and 15mins. This resulted in 24 pages of transcript, subsequently used to undertake coding.

Table 6.10: Focus Group details

Participant #	Interviewee #	Designation	Industry Segment	Service line
1	2	Manager	Government and Health Industries	Operations
2	4	Senior Manager	Banking & Insurance	Technology
3	10	Senior Manager	Government and Health Industries	Operations
4	-	Director	Industrial Products	Technology

6.4.1.2 Data Analysis

The focus group data were transcribed and read/re-read multiple times (Gioia & Thomas, 1996), which yielded 66 codeable statements, each consisting of a sentence/sequence of sentences conveying a coherent point (Weber, 1990; Saldaña, 2013) as to why each factor was considered to be important or significant for Case B. A method of constant iteration was used to create mutually exclusive and exhaustive codeable statements (Miles &

Huberman, 1994), which were then summarized as aggregate statements, based on what was said for each factor.

The 66 statements were coded using open coding (each code for Case B was coded using the prefix OCB, i.e., Open Code for Case B) based on the general meaning they conveyed. For example, for KFA7–Diversity, one participant said, *"Whereas, if you have a team of people who have been in a different industry…or have done something completely different, <u>you end up with a much more diverse viewpoint and a much more robust output at the end of the day"</u>* (Senior Consulting Manager, Banking & Insurance), so the underlined phrase was coded as 'To produce robust outputs through multiple viewpoints (OCB1)'. This process was undertaken for all 12 key factors of innovation culture and 66 open codes emerged (OCB1 to OCB66).

Open coding resulted in a number of codes against each factor. Therefore, for the purpose of summarizing the key reasons, aggregate statements were derived. The method used here was multiple reviews and iterations. So, for example, the seven codes, OCB1 to OCB7, were read/reread several times to derive two aggregate statements (see Table 6.11). In this example OCB1, 2, 3, 4 and 6 all indicate[61] that KFA7 contributes to producing robust outputs, and hence grouped together as one aggregate statement 'To produce quality output by considering multiple viewpoints'. Likewise, codes OCB5 and OCB7 were grouped as one aggregate statement 'To create disruption on purpose'.

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[61] *Saldaña (2013) suggests that it may often be required to use more than one statement to understand the key relationships. In this case, it is the link here between the multiple viewpoints and how those viewpoints enable Case B to produce robust outputs.*

Table 6.11: Focus group coding example and derivation of aggregate statements

Code	Meta-construct	Quotes from focus group	Open Coding - Case B		
			Open Code Name	Open Code	Aggregate Statement/s
KFA7	Diversity	*"If you have a team of people who have been in a different industry… you end up with a much more diverse viewpoint and a much more robust output at the end of the day because you've got all sorts of viewpoints challenging your ideas."*	To produce robust outputs through multiple viewpoints	OCB1	To produce quality output by considering multiple viewpoints (OCB1, OCB2, OCB3, OCB4, OCB6) To create disruption on purpose (OCB5, OCB7)
		"People who are born- and bred-Case B and people who have done something else is the combination … I tend to find that people who have always been with Case B are stronger on the firm processes but are sometimes less operational or less aware of how it works in practice [with clients] – it is about having that sort of balance just makes us more authentic."	To ensure there is balanced approach to clients by having the right balance of practical versus theoretical exposure	OCB2	
		"Continually bring rich perspectives and insights back to our clients and to prove to our clients that we aren't automatons"	To bring rich perspectives/ viewpoints to clients	OCB3	
		"You know we get that feedback sometimes from client teams, internally, is that work is continually refreshing by having that diversity of thinking?"	To continually refresh work	OCB4	
		"But if you just rollout models, all you get is things on repeats and actually the opportunity to continually refresh is actually a combination of having models that you can trust but also by having people who are allowed to think within those models and who are recognized for being a bit disruptive and not actually told to go back into the box and think the way we think because that is quicker."	To have disruptive and out-of-the-box thinking	OCB5	
		"Because sometimes the real value to the client is to bring a different perspective."	To create real value for the client through different perspectives	OCB6	
		"If you want to disrupt that market, if you want to bring innovation, actually you might want to bring a retail person in [into an insurance practice]"	To plan for disruption through bringing in people from different industries	OCB7	

A similar process was followed with all of the 66 codes.

6.4.1.3 Summary of Findings

Reason codes OCB1 to OCB66 were aggregated at the level of each factor to derive aggregate statements or key themes of reasons from the open codes. The aggregation led to a total of 24 aggregate statements or key reasons as presented in Table 6.12. The discussion of the reasons against each factor is presented in the next section (Section 6.4.2).

Table 6.12: Results from focus group data analysis

Code	Meta-construct	Quotes from focus group	Open Coding - Case B		
			Open Code	Reason Code#	Aggregate Statements
KFA7	Diversity	When I mentioned diversity in the context of Case B, it was more about the diversity of thinking. It is more about the culture of valuing different viewpoints. Whereas, if you have a team of people who have been in a different industry but have come into consulting, or have done something completely different, you end up with a much more diverse viewpoint and a much more robust output at the end of the day because you've got all sorts of viewpoints challenging your ideas, saying why is it like that, why would we do things like that.	To produce robust outputs through multiple viewpoints	OCB1	To produce quality output by considering multiple viewpoints (OCB1, OCB2, OCB3, OCB4, OCB6)

To create disruption on purpose (OCB5, OCB7) |
		But the stuff that is under the skin of the organization is about how we operate and how we think. I find a big difference sometimes between people who are born- and bred-Case B and people who have done something else is the combination – it is not one is better than the others, it is the combination that makes it happen. I tend to find that people who have always been with Case B are stronger on the firm processes but are sometimes less operational or less aware of how it works in practice [with clients] – it is about having that sort of balance just makes us more authentic.	To ensure there is balanced approach to clients by having the right balance of practical versus theoretical exposure	OCB2	
		And I think one of the ways to kind of continually bring rich perspectives and insights back to our clients and to prove to our clients that we aren't automatons.	To bring rich perspectives/viewpoints to clients	OCB3	
		You know we get that feedback sometimes from client teams, internally, is that work is continually refreshing by having that diversity of thinking?	To continually refresh work	OCB4	
		But if you just rollout models, all you get is things on repeats and actually the opportunity to continually refresh is actually a combination of having models that you can trust but also by having people who are allowed to think within those models and who are recognized for being a bit disruptive and not actually told to go back into the box and think the way we think because that is quicker.	To have disruptive and out-of-the-box thinking	OCB5	
		Because sometimes the real value to the client is to bring a different perspective. If you know a group of people from Insurance who have only ever worked in insurance who have deep deep knowledge, they will all have a cultural fit and understanding of that market.	To create real value to client through different perspectives	OCB6	
		If you want to disrupt that market, if you want to bring innovation, actually you might want to bring a retail person in [into an insurance practice]. Or you might want to bring in a start-up person and say, okay, if you are starting from scratch, how would you do this? So you deliberately disrupt yourself.	To plan for disruption through bringing in people from different industries	OCB7	
KFA4	Explore externally for innovation opportunities	There is a time dimension to this one, I need that capability, it doesn't exist in Case B at the moment, so we do need to partner with or I need that capability, or I need that brand from somewhere else to bolster my sort of reputation.	To complement capabilities in a timely manner	OCB8	To complement and strengthen internal capabilities to meet an urgent client need (OCB8, OCB10, OCB11, OCB12, OCB13, OCB14)

To take innovation to the market quickly (OCB9, OCB15) |
		So we set up situations where we get experts from various organizations and actually not just the ones that we partner with but pretty much in every couple of weeks we get people from start-up environments, digital start-up environments to talk about what they are doing and why they are doing it. So, again, we all take away something from that because in the technology space there is a lot going on. If we didn't do it, we wouldn't be successful.	To track in with the fast moving environment	OCB9	
		We have partnership arrangements with a very large number of technology providers and work with them, go into bid with them on various proposals, in different partnership arrangements, and without that we couldn't do a lot of the roles that we do.	To get capabilities from outside to go to market	OCB10	
		Where they were acting as our client side advisors, where they were with their teams, whether we are working collaboratively with those technology providers who then provide solutions and the list is a long list.	To support on client engagements	OCB11	
		Where they were acting as our client side advisors, where they were with their teams, whether we are working collaboratively with those technology providers who then provide solutions and the list is a long list.	To get solutions from partners	OCB12	
		We have a lot of heritage in this space, and of course all that brings different ways of thinking, and we are also good in getting those people to come and talk to our people.	To build internal capabilities through multiple perspectives from partners	OCB13	
		We know what to do, we have a set of people who are very very experienced and have been working with clients and developing those solutions, but we now have got to internally focus that capability and drive it through	To build internal capabilities	OCB14	
		And you know we are that end of it as you rightly say.. the real value comes from being able to be agile, but again within those parameters/ constraints.	To be agile [to respond to market]	OCB15	

Code	Meta-construct	Quotes from focus group	Open Coding - Case B		
			Open Code	Reason Code#	Aggregate Statements
NKFA1	Leadership focused on innovation	The firm just cannot have its totality of their staff just doing random things, because it seems like fun. *It needs some of that structure to deliver because some things we can apply models to and can be replicated. But part of the actual strength of that is having time left over*, that capacity to think differently across that project.	To provide structure and guide the use of time across projects	OCB16	
		That for me is very different compared to the leadership commitment like PQR [technology platform] because that's a different type of innovation. And the expectation of leadership commitment is different. It has to fit with the types of expectation you have in the environment that you are working in. You can still expect that replicable solution, *but make sure that the team feels enabled and empowered to bring some different insight to that client.* And that's the trick because no client is exactly the same. And if you do treat it that way, you will miss out on learning.	To empower team to provide insights to clients	OCB17	
		I think the value for Case B is if we can sort of commercialise and scale innovation, that's what we should be doing. *Actually, anyone can have an idea, but it is about taking that idea in a way that it is delivering value for us or for our clients.*	To support conversion of ideas into delivering value to clients	OCB18	
		So we have PQR as our collaboration tool and yet all our communication comes via email.....those are the examples we have as a firm we have invested hugely in innovative technology, innovative platforms, and we are encouraged to use it as much as possible to *collaborate work closely with each other, which in itself will drive innovation.*	To set the example from the top to drive collaboration	OCB19	
		So the other part is *providing space for people to innovate and then rewarding innovation as and when it happens.*	To provide space to innovate and enable rewarding innovation	OCB20	
		I think at a macro level we talk a good story, our leaders will get out there, we'll talk about how are going to move into new types of engagement with clients, do new work, acquire new organizations, new ways of contracting with other companies, clients and how we take a share of what we do. *And all of that is innovation in the sense that it is shifting from where we have traditionally been and where we are gonna be in the future*, which is good.	To shift ways of working from traditional to new	OCB21	To provide structure for innovation so consultants can prioritize their time (OCB16)
		We are very good at taking methodologies to do jobs, *we are not yet at a level where we methodologised innovation or whatever that actually means. So, what I mean is that we systematically think about how we innovate in each of those jobs, it is down to the person who is leading that job at the end of the day.* Some jobs, the level of innovation needed is quite low, and in other jobs it can be quite high.	To systematise innovation on a daily basis	OCB22	To ensure teams provide value to clients (OCB17, OCB18)
		I get that and I absolutely agree with that. *But in terms of systemising thinking, the things we ask our engagement guys at the outset is to do things like 'write a plan', we don't ask them to write an innovation plan.* I have never seen anywhere where we are saying, "Let's write an innovation plan."	To systematize things to plan for innovation	OCB23	To demonstrate company's support for innovation (OCB19, OCB20, OCB22, OCB23, OCB24)
		And if you have a senior leadership who are very driving and directive, that's what good looks like and I want one of those, that's what you deliver! If you have a leader who is saying that's the outcome I am after, I don't care how you get there, that's what I want, that's the stretch target and if you are a miracle worker that's what I really want over here, but that's the bare minimum, off you go. Then *it creates a very different environment and a very different way of working and you can take that and apply it in all aspects you do* – whether it is out with the client, out here, doing people management or leadership. From experience, there is an awful lot of 'that's what good looks like and I want one of those'.	To create an environment or space to be different	OCB24	
		I think the challenge lies where people who want to do things *how we can encourage them to do that but not to have the mind-set that I have to do it on my own, how do I deliver, build,* how do I source the crowd with them and say it is actually worth doing because there is a market around it and demonstrate to the market and allowing some of that without it necessarily being codified market plans.	To give confidence to people that they will get support	OCB25	
		I think the challenge lies where people who want to do things how we can encourage them to do that but not to have the mind-set that I have to do it on my own, how do I deliver, build, *how do I source the crowd and say it is actually worth doing* because there is a market around it and demonstrate to the market and *allowing some of that without it necessarily being codified market plans.*	To provide management support for investment	OCB26	

Code	Meta-construct	Quotes from focus group	Open Coding - Case B		
			Open Code	Reason Code#	Aggregate Statements
KFB1	Balanced teams	*If you have only a driving culture, it's kind of, get out of the way, let's finish the task and move on. Whereas if you have a broader, collective group with different approaches, different viewpoints, it gives the team an opportunity to breathe, to come up with innovative ideas, allow them to come to the surface, rather than "stop pulling me off focus from delivering." And that gives people a better environment to float new ideas, and do things slightly differently.*	To provide space to float new ideas	OCB27	To provide the ability to air new ideas, validate them quickly and create value for clients (OCB27, OCB28, OCB31)
		And that gives people a better environment to float new ideas, and do things slightly differently.	To do things differently	OCB28	
		As you get bigger, sometimes the downside to that is that you become the person who is known to do that job, then you stop growing. I want you to be on that team to do that task and I hate doing that! For me, in a consulting set up, you should be constantly changing teams to a degree, there will be an element of you have constantly new people who are coming across and doing things, but then how that keeps you growing as an individual.	To provide individuals an opportunity to grow by changing teams	OCB29	
		PQRST, this is something we do internally or with clients where we get a reasonable group of people, we pick people from diverse backgrounds and we throw them all together for a short period of time, often just a few days, the idea is that you develop a prototype solution in a short space of time, taking the ideas from everybody. So that sort of a type of thing is a way of, I guess, manufacturing an environment for diversity to then create innovation.	To manufacture an environment to innovate	OCB30	To create a competitive environment for individuals to learn, innovate and grow (OCB29, OCB30)
		A numbers of times coming into a client that has had a strategy [from a large strategy house] given to them, and they go, 'great, implement that!' Oh well it is fantastic but you can't do that, you can't do that, they do not exist at this point. It is fantastic in 5 years it sounds great. So, I think as a consulting company, it [having balanced teams that bring some reality check to theoretical work] gives us great value.	To enable a practical view in consulting work with clients	OCB31	
NKFA6	Empowerment	*So again, it comes back to allowing people to innovate. And if you have a senior leadership who are very driving and directive, that's what good looks like and I want one of those, that's what you deliver! If you have a leader who is saying that's the outcome I am after, I don't care how you get there, that's what I want, that's the stretch target and if you are a miracle worker that's what I really want over here, but that's the bare minimum, off you go. Then it creates a very different environment and a very different way of working and you can take that and apply in all aspects you do – whether it is out with the client, out here, doing people management or leadership.*	To enable leaders and juniors to work in an environment conducive to innovation	OCB32	To build an innovation-supporting relationship between a leader and employee (OCB32, OCB33)
		I am at a more junior level to all of you and I particularly gravitate towards one particular senior manager who says, 'this is what we need to work to' and to me that is the only kind of the only parameter [subsequently mentioned that this is important for innovation].	To build relationship between employee and supervisor/leader	OCB33	
		One of the challenges that we have is that we have people who want the input guidance, but then we'll have people who want the outcome guidance and how we have to be able to have this wide skills, the right ability to get the best out of the both kinds of people. But to me the innovation part is more likely to be unleashed in the former situation than in the latter.	To get the best out of people	OCB34	To produce quality and innovative outcomes from people (OCB34, OCB35)
		What is also interesting is that when we give people the space, you might be in a situation where "Oh I wasn't expecting that", "that is fantastic", kind of a thing. And that then drives the much more interesting collaborative type of approach. But then it has to be in a certain kind of environment, and it comes back to balanced teams, it comes back to leadership and providing people that fertile ground.	To generate exciting, innovative outcomes from people	OCB35	

Code	Meta-construct	Quotes from focus group	Open Coding - Case B		
			Open Code	Reason Code#	Aggregate Statements
NKFB2	Coaching and Mentoring	*That's where I think the reverse-mentoring sort of challenges that. I don't think seniority necessarily affects the thoughts. I think there are a set of people who look to their leaders to give them knowledge and experience and that's alright, but I don't think that is necessarily about innovation and creation. You might have more ability to do it, so we might have the view of how actually the consulting industry is moving and I'd like to do a 10 year deal with the City. I am not going to make it happen on my own, you know I'll have to go up to the point of get all of the agreements, so the ability to deliver is different from the ability to have an idea and I think that is what the coaching mentoring is all about.*	To allow people to generate new ideas	OCB36	To enable consultants to generate and share ideas leading to insights to clients (OCB36, OCB37, OCB38)

To create a better working relationship between senior and junior people (e.g. refresh peoples' thinking and keep cynicism low) (OCB39, OCB40) |
		Reverse mentoring has really been brilliant for consulting; it has been good for us as mentors as well as the people that we mentored. I can see the link to innovation in terms of sharing, encouraging ideas and not being directive and at least that is part of what we espouse to be.	To enable sharing and encouragement of ideas	OCB37	
		It is such an important thing to do, in terms of how our clients interact with that customer group, we can use people in our organization who might be junior in terms of the number of years of work, but actually they have 10 times more experience at this stuff than people who have been here for 20 years.	To help clients with richer experience by using the right combination of our skills	OCB38	
		I think that is part of what reverse-mentoring is designed to do is just to flip that relationship between our senior people and our junior people saying, hang on a second, look through the wall through a different type of lens and take away that cynical 'been there and it doesn't work'. It might not have worked in the 90's, but things have moved on since and it might now.	To create a better working relationship between senior and junior people	OCB39	
		So, it is actually about refreshing peoples' thinking and keeping the cynicism at healthy levels to allow us to innovate is a key part of what we need to do.	To refresh people's thinking and keep cynicism low	OCB40	
NKFA11	Strong growth focus	*But almost a singular focus on growth means innovation then becomes a tool to get there. You know we can't achieve that growth by just doing what we do. But you know we are dealing with everybody in that market anyway on those products, there is no more growth just doing that, we have to offer something else, what's the next sort of way we can do it to create value and get paid for it.*	To drive identification of areas to create value	OCB41	To stimulate identification of new avenues to create value (OCB41, OCB42)

To create and maintain the urgency to innovate (OCB43, OCB44, OCB45) |
		Not everyone thinks about just growing the money, we would like to do some interesting work as well. Growing the money enables you to start thinking about what works can be interesting that we could do.	To identify interesting areas to innovate	OCB42	
		Some of our bigger strategic decisions are in some way are a reflection of that though. If we have to grow significantly, we've got to sell more, bigger jobs, so multi-million jobs, we've got to do that in a different way and not do Time and Material [jobs that are staff augmentation or just for a few days where resources are loaned]. That's the sort of principle behind it and you are saying, how is that going to happen...... It sort of means implicitly that if we've got to deliver the strategy then, we have to be innovative in the context of how we are, otherwise we will not get there.	To create the urgency to be innovative to deliver growth targets	OCB43	
		And we couldn't think about what could be better, if we have to generate more business in a timeframe, what should we do to get there? That then means we've got to think differently. You know some of the stuff we've done, we wouldn't think we'd do 5 years ago.	To push organizations to think differently to deliver growth targets	OCB44	
		I do think that growth in and of itself is disruptive in an organisation. It is interesting when you kind of look at Apple and how it has grown over the last 10-15years or so, since the iPod came in and it has been on a stratospheric rise, through innovation, through innovative products, and creating a market. A very very acute business sense has driven that, some really strong management has driven that, and some very very clear focus has driven that. So, it is the way the growth is driven I think is key [innovation implied].	To have growh is to have disruption	OCB45	

Code	Meta-construct	Quotes from focus group	Open Coding - Case B		
			Open Code	Reason Code#	Aggregate Statements
KFB3	Access to top management	*The formal routes help manage the flow of information, but at the same time we try and develop channels for good ideas to flow through and not restricted by that.*	To be a channel for good ideas to flow through	OCB46	To provide the ability to air new ideas (OCB46)
		It can be a blocker to innovation only because we carry a perception of our hierarchy and the way we work, not because the partner or senior leader specifically closes their doors to you. It is whether you have the confidence and/or your relationship with that person the hierarchical barriers we carry for other reasons and not in terms of ideas development.	To breakdown hierarchical barriers and build relationships with senior leaders	OCB47	
		We need to think about what we need to disrupt that [hierarchy] so it does not affect our ability to have those type of conversations with our senior leadership.	To disrupt hierarchy to have conversations with senior leaders	OCB48	
		When it comes down to 'I've got a good idea' I can pass those depending on the relationships and having the ability to influence, get a sponsor and get the relevant approvals to do that. We are starting now, because so many people have good ideas, how we filter out so we get the best ideas, put the resources behind the things that are relevant and what we are trying to do.	To enable the ability to implement ideas	OCB49	To support building of good working relationships with senior leaders in order to develop ideas (OCB47, OCB48, OCB49, OCB50, OCB51)
		But most of the access to senior management is really about how you build the networking relationships and it is as much about the people who are trying to implement, upward building their network to get their point of view.	To build networking relationships in order to be heard	OCB50	
		We do think it is the balance that you have those natural relationships and networks being formed without you feeling that you are stepping out of line; all you are doing is that, for promotion you don't have to be a reward or recognition, it'll be about developing ideas.	To enable building a network of relationships to develop ideas	OCB51	
NKFA9	Enabling people to build knowledge to innovate	*The nature of what we do, as an aspect we will be doing more of it, the question is whether some of the people in the building today would do a lot of that in the OPERATE space..... I suppose one of our core competencies is being curious, I think we are, sort of what we are interested in type of attitude because we are always asking people that, we have always people scanning around what else is happening we can try different type of thing. We have got people who are interested around the sort of how the business is running side of it.*	To support consultants who are already curious about learning	OCB52	To harness capability of consultants who are already curious and keen on learning (OCB52, OCB54)
		I think we are fortunate in a way in terms of the kind of work we do. The calibre of people that we bring in itself is in the DNA of people, they are not going to be successful here if they can't sort of do this. And therefore, it is not like we are in an organisation where we might be sitting there and thinking well, okay 10% of the organisation population might bring the strategic thinking, the remaining 90% are going to do the day job – that's not who we are!	To be successful in a competitive environment, people need to develop themselves	OCB53	To support consultants to develop themselves in a very competitive environment (OCB53)
		I think it is not about enabling people by training them or something, it is in them; it is about harnessing it effectively, I think.	To harness people capability for innovation	OCB54	
NKFA5	Reinventing the business	*Actually a lot of what we do, thinking artificial intelligence and futuristic, can be automated and consulting could die within years. That's why some of the stuff like XYZ initiative is quite key.*	To avoid the risk of becoming irrelevant	OCB55	To continue to be relevant as a business (OCB55, OCB56, OCB57)
		The truth of the matter is that it might ultimately take away a chunk of our traditional business. But actually then think about who are the likely organizations who can do it – it is Google, it is Amazon, and organizations like that that drive through the technology	To avoid perishing as a business	OCB56	
		So, yes, it is massively relevant to us in terms of how current are we, how immediate are we today/ tomorrow, something we can't almost always answer. In the Microsoft Encarta and Wikipedia examples, you wouldn't have backed Wikipedia in the 1990s, so being able to reinvent your business model for a large global firm like us is incredibly important.	To stay current	OCB57	

Code	Meta-construct	Quotes from focus group	Open Coding - Case B		
			Open Code	Reason Code#	Aggregate Statements
KFB4	Risk-taking	*I am saying we don't celebrate our failures. We don't hold them up and say, "Right, we've tried this, it really didn't work, here are the lessons we've learnt from this." So if you spot any of these symptoms, it is a red flag. I worked at the XYZ client 3 or 4 years ago and they've gone so completely, spectacularly bonkers, they now call it lessons recognised. It is an incredible lack of ambition. We're probably not going to learn, but we will recognise it. I don't think we do enough of lifting the covers and saying, 'okay, this bit is really wrong.'*	To learn from mistakes is important	OCB58	To learn from mistakes/failures is an essential part of innovation (OCB58, OCB59)
		So, you know, if you want to innovate, if you want to succeed, you have to be prepared to fail, not sure if that really penetrates into this organisation. I think we are intrinsically wired to be successful and no one would, if there was a failure, it is not shared; it is not something that people would talk about.	To innovate you'll need to fail	OCB59	
		I think this comes back to the XXXX organization about the lack of learning, the agile approach is to fail fast. Is to get on build, if it works, we like that, if it doesn't work, okay throw that away, that's how you accelerate and create value very very quickly or at least workout which bits are coming to a very expensive conclusion from this that it wasn't the best idea. So, it is a switch of culture. It is okay to fail, but we will do it in a controlled, managed way.	To accelerate, create value quickly	OCB60	To be able to try things in order to reach an investment decision quickly (OCB60, OCB61)
		I think, if we go into a client and say, right, you know you've got to innovate, you know your marketplace is such that you've got from A to Z very very quickly, if you do it yourself, you may be 18 months down the track before you work out you are doing the wrong thing. We can get you to that decision point in 6 weeks. Thereby we will save you X money. Therefore, we can come in, we can innovate with you and we can fail fast and that will burn that cycle much quicker and that's the value we bring in our conversation. I think that is incredibly valuable to our business.	To quickly go through the cycle of innovation to create value for clients	OCB61	
KFA10	Focus on identifying value of innovation	*But at the end of the day we have got to pave our way and so it is about how you monetise that and it is about applying the discipline of doing things – coming back to sort of agile development – is applying a track of 'what is the value we are generating here'. Can we monetise this, can we take this to clients and will anyone pay for it, or are we developing some very whizzy things, they look great and a lot of people get very excited about it.*	To track value of innovation that is generated	OCB62	To ensure there is discipline around investments being made on innovation (OCB63) To drive value for clients so they can pay and benefits on investment can be realized (OCB62, OCB64, OCB65, OCB66)
		But at the end of the day we have got to pave our way and so it is about how you monetise that and it is about applying the discipline of doing things. *There should always be a tension that is driven across that, but you also need a discipline of technical, business, quality, risk review that says, 'Okay, do we need to stop doing that because we are spending a lot of money getting nowhere and kick something else off?'*	To add discipline into decision making based on value being generated	OCB63	
		Can we monetise this, can we take this to clients and will anyone pay for it, or are we developing some very whizzy things, they look great and a lot of people get very excited about it.	To identify value that clients can pay	OCB64	
		In many ways, I think the value of innovation is two-fold: it is about innovating for our clients and driving value for them, it is something they will pay for and also innovative ways of working.	To be able to innovate for clients to drive value	OCB65	
		In many ways, I think the value of innovation is two-fold: it is about innovating for our clients and driving value for them, it is something they will pay for and also innovative ways of working.	To ensure clients pay for the value generated	OCB66	

Legend: OCB is Open Code for Case B.

6.4.2   Discussion

Based on the FG discussion, this case study identified 24 key reasons (documented as aggregate statements in Table 6.12) as to why the 12 key factors of innovation culture are important for managers. This subsection presents a discussion on the findings from the analysis with the aim of answering RQ2 against each key factor of innovation culture. The discussion presents RQ2 in the context of the PSF industry and the challenges PSFs currently face (based on the discussion presented in Chapter 1, Section 1.5.4, which highlights six challenges that can inhibit innovation in the PSF industry[62]).

   'KFA7–Diversity'. This refers to an organization having a diverse group of people (e.g. diverse educational background, experience, ethnicity, gender, etc.) supporting their projects. Two key reasons (aggregated from codes OCB1 to OCB7) emerged as to why KFA7 is important for managers. First, through KFA7 Case B is able to produce quality client output by considering multiple viewpoints (of consultants) (OCB1-OCB4, OCB6). "*You end up with a much more diverse viewpoint… much more robust output* [for clients]*… viewpoints challenging your ideas*" (Senior Consulting Manager, Banking & Insurance). Second, KFA7 enables Case B to deliberately create disruption of the status quo on purpose (OCB5, OCB7) by recognizing the value of divergent thinking among teams. *"But if you just rollout models* [standard frameworks]*, all you get is things on repeats… but…* [innovation comes when] *people…are allowed to think…recognized for being a bit disruptive"* and *"if you want to disrupt that market, actually you might want to bring a retail person in* [into an insurance practice]*, so you deliberately disrupt yourself"* (Consulting Manager, Government & Health Services). Thus, diversity enables Case B to provide innovative solutions to clients and also benefit from divergent thinking that can disrupt the market and generate new areas of business opportunity, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

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[62] *Chapter 8 provides a detailed account of how the key factors across all three case studies support in making a contribution towards addressing the challenges in the PSF industry, which will need to be overcome in order to establish a culture of innovation*

'KFB1–Balanced teams'. This refers to project teams having the right set of skills so that individual team members' learning is enhanced and the teams members collectively contribute to solving client problems. Two key reasons (from codes OCB27 to OCB31) emerged as to why KFB1 is important for managers. First, KFB1 is important for individuals to be able to provide the ability to air new ideas, validate them quickly (in teams) and create value for clients (OCB27-28, OCB31). *"That* [KFB1] *gives people a better environment to float new ideas, and do things slightly differently"* (Senior Consulting Manager, Government & Health Services); *"I think as a consulting company, it* [balanced teams that bring some reality checks to theoretical work] *gives us great value"* (Consulting Director, Industrial Products, Technology). Second, KFB1 is able to create a competitive environment for individuals (moving across teams) to learn, innovate and grow (OCB29, 30). *"Have constantly new people who are coming across and doing things, but then how that keeps you growing as an individual"* (Senior Consulting Manager, Government & Health Services). Thus, balanced teams create an environment where internal interactions/behaviours in teams support professionals by way of validating new ideas quickly and also create an environment of growth for professionals, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFA4–Explore externally for innovation'. This refers to exploring opportunities of innovation through engagement with external organizations. Two key reasons (from codes OCB8 to OCB15) emerged as to why KFA4 is important for managers. First, KFA4 enables Case B to complement/strengthen internal capabilities to meet an urgent client need (OCB8, OCB10-OCB14). *"We need that capability* [urgently]*, it doesn't exist in the firm at the moment, so we do need to partner"* (Consulting Director, Industrial Products, Technology); *"We are working collaboratively with those technology providers who then provide solutions"* (Senior Consulting Manager, Government and Health Services). Second, KFA4 enables Case B to take innovation to the market quickly (OCB9, OCB15). *"The real value comes from* [partnerships] *being able to be agile* [in responding with innovative solutions]*"* (Director, Industrial Products). Thus, KFA4 enables Case B to provide innovative solutions continually to clients, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'NKFA6–Empowerment'. This refers to an organization providing professionals the space and autonomy in their work environment without interference. Two key reasons (from codes OCB32 to OCB35) emerged as to why managers consider NKFA6 as important for an innovative environment. First, NKFA6 creates an environment to produce quality and innovative outcomes from people (OCB34, 35). *"It* [NKFA6] *gives people the space, you might be in a situation where 'Oh I wasn't expecting that', 'that is fantastic'* [referring to innovative ideas]*"* (Senior Consulting Manager, Banking & Insurance). Second, NKFA6 creates an environment to build an innovation-supporting relationship between a senior and junior staff (OCB32, 33) *"I particularly gravitate towards one particular senior manager who says, 'this is what we need to work to' and to me that is the only kind of the only parameter* [important for innovation culture]*"* (Consulting Manager, Government & Health Services); *"If you have a leader who is saying that's the outcome I am after…off you go, then it creates a very different environment"* (Senior Consulting Manager, Banking & Insurance). So, managers have an opportunity to navigate the fine line of a good working relationship with junior staff and managing them. Thus, NKFA6 enables Case B to provide innovative solutions to clients and creates an environment for more internal interactions; both are challenges for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFB2–Coaching and mentoring'. This refers to an organization providing junior staff with more support from senior managers so they are able to work together on innovation. Two key reasons emerged (from codes OCB36 to OCB40) as to why KFB2 is important for managers. First, KFB2 creates an environment to enable consultants to generate and share ideas leading to insights to clients (OCB36-OCB38). *"I can see the link to innovation in terms of sharing, encouraging ideas and not being directive and at least that is part of what we espouse to be"* (Consulting Manager, Government & Health Services). The FG participants also highlighted the importance of junior staff supporting senior staff through the process of reverse-mentoring. *"We can use… who might be junior…but actually they have 10 times more experience at this stuff* [digital/social media] *than people who have been here for 20 years"* (Consulting Director, Industrial Products, Technology). Second, KFB2 enables Case B to create a better working relationship between senior and junior staff (OCB39, OCB40)

"It is actually about refreshing people's thinking and keeping the cynicism at healthy levels to allow us to innovate" (Senior Consulting Manager, Banking & Insurance). Therefore, KFB2 creates an environment where senior and junior staff members support each other, build relationships, which in turn remove barriers to creating an environment of innovative behaviours.

'NKFA11–Strong growth focus'. This refers to an organization setting themselves high growth targets, which can in turn drive internal teams to come up with innovative ideas to achieve those growth targets. Two key reasons (from codes OCB41 to OCB45) emerged as to why managers consider NKFA11 as important for innovation culture. First, NKFA11 enables Case B to stimulate the identification of new avenues to create value for clients (OCB41- OCB42). *"If we have to generate more business in a timeframe… that then means we've got to think differently"* (Senior Consulting Manager, Banking & Insurance). Talking about how growth targets created disruptive thinking, one participant said, *"Growth in and of itself is disruptive in an organization… some of the stuff we've done, we wouldn't think we'd do five years ago"* (Senior Consulting Manager, Government & Health Services). Second, NKFA11 enables Case B to create and maintain the urgency to innovate (OCB43-OCB45). *"It sort of means implicitly that if we've got to deliver the strategy* [strong growth] *then we have to be innovative in the context of how we are, otherwise we will not get there"* (Consulting Director, Industrial Products, Technology). Thus, NKFA11 prompts Case B to be able to meet their growth targets by identifying new opportunities, a key challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFB3–Access to top management'. This refers to professionals having easy access to management so they are able to have discussions on innovative ideas and also easily go through relevant approvals for innovation. Two key reasons (from codes OCB46 to OCB51) emerged as to why KFB3 is important for managers. First, KFB3 is able to provide the ability (for consultants) to air new ideas (OCB46). The FG discussed that hierarchy is there for the purpose of flow of information and that it needs to coexist with the ability for anyone to go and talk to anyone else in the organization. *"To* [be able to] *walk up to someone's* [a leader

in this context without being constrained by hierarchy] *desk and say I have this great idea and I think it needs to be developed"* (Consulting Manager, Government & Health Services). Second, KFB3 is able to support building of good working relationships with senior leaders in order to develop (and implement) ideas (OCB47-OCB51). *"The access to senior management is really about how you build the networking relationships"* as *"I can pass those* [ideas]*…get a sponsor and get the relevant approvals to do that* [implement ideas]*"* (Senior Consulting Manager, Government & Health Services). Thus, building relationships enables junior staff to gain more support from seniors and that creates the capacity to innovate, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'NKFA1–Leadership focused on innovation'. This refers to the focus that leadership accords to innovation in terms of providing the necessary guidance and support to teams on the ground. Three key reasons (from codes OCB16 to OCB24) emerged as to why NKFA1 is relevant for managers. First, NKFA1 is able to provide structure for innovation so consultants can prioritize their time (OCB16). *"The firm just cannot have its totality of their staff just doing random things, because it seems like fun. It needs some of that structure* [from leadership]*"* (Senior Consulting Manager, Government and Health Industries, Operations). Second, NKFA1 is able to ensure teams provide value to clients (OCB17-OCB18) *"Anyone can have an idea, but it is about taking that idea in a way that it is delivering value for us…for our clients"* (Consulting Manager, Government & Health Services). Third, NKFA1 enables Case B to demonstrate company's support for innovation (OCB19-20, OCB22-OCB24). *"I think the challenge lies where people who want to do things, how we can encourage them to do that* [innovate]*… not to have the mind-set that I have to do it on my own* [but have support from the management]*"* (Senior Consulting Manager, Government and Health Industries). Further, it was noted that Case B has a devolved[63] model of innovation and, in such a model, leadership (at a supervisory level) plays an extremely important role in enabling consultants to prioritize their time (over business-as-usual billing activity) by directing their focus on

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[63] *From the 12 interviews conducted, it was evident that Case B has a devolved model of innovation where innovation initiatives are not centrally coordinated, supported, and tracked but instead they are managed in a decentralized fashion within individual teams.*

innovation. Also, leadership plays an important role in supporting teams on the ground to provide innovative solutions to clients, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'NKFA9–Enabling people to build knowledge to innovate.' This refers to an environment where consultants are supported through formal learning/training. Two reasons (from codes OCB52 to OCB54) have emerged as to why NKFA9 is important for managers. First, through NKFA9, Case B is able to harness capability of consultants who are already curious and keen on learning (OCB52, OCB54). Exposing such a curious group of professionals to relevant areas of opportunity can enable the organization to leverage their capabilities. One participant said, *"One of our core competencies is being curious* [to learn new things], *I think we are;"* (Senior Consulting Manager, Government and Health Industries) and another participant said, *"I think…it is about harnessing it* [their nature of being curious and the capabilities they build] *effectively"* Second, the focus group members discussed that Case B already has capable and high calibre people, and in an already competitive internal environment, NKFA9 provides options for consultants to upskill themselves based on their perceived needs. *"The calibre of people that we bring in itself is in the DNA of people, they are not going to be successful here if they can't sort of do this* [train, develop, and upskill themselves]*"* (Consulting Director, Industrial Products). Thus, NKFA9 enables Case B to build the capacity to innovate (by harnessing the capabilities of individuals) and to create growth options for consultants (by creating a competitive environment); both are challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFB4–Risk taking'. This refers to allowing consultants to make mistakes in order to be able to have more opportunities to innovate. Two reasons (from codes OCB58 to OCB61) emerged as to why KFB4 is important for managers. First, KFB4 enables consultants to learn from mistakes/failures as it is an essential part of innovation (OCB58-OCB59). One participant said, *"Right, we've tried this, it really didn't work, here are the lessons we've learnt…"* and that consultants need to do enough of *"lifting the covers… [to acknowledge] 'okay, this bit is really wrong'"* (Senior Consulting Manager, Banking &

Insurance). Second, KFB4 enables consultants to be able to try things in order to reach an investment decision (for clients) quickly (OCB60-OCB61). The FG highlighted how they can be more risk-taking (jointly with clients by trying new things quickly) in terms of investment decisions for clients. *"We can innovate with you* [as in clients] *and we can fail fast and that will burn that cycle* [of analysis leading to quicker decision making] *much quicker and that's the value we bring in our conversation* [with clients]" (Consulting Manager, Government & Health Industries). The FG discussed how important it is for them to provide an approach to clients that can enable them both to fail quickly and reach conclusions (both parties acknowledging that failure is possible) with a minimal amount of sunk investment. Although this would mean even changes to the way contracts are set up with clients. *"We have… started to get into the area of 'managed risk'…where we take a portion of the benefit that we actually usually recover as part of the costs… we've got something to gain and the worst case scenario is we walk away and recover our costs and we lose nothing"* (Partner, Digital, Technology). Thus, risk taking can be very different in a PSF context, but it is nevertheless important for PSFs in order to be innovative.

'KFA10–Focus on identifying the value of innovation'. This refers to organizations measuring the value generated (or realized) by organizations against the investments they make in innovation initiatives. Two key reasons (from codes OCB62 to OCB66) emerged as to why KFA10 is important for managers. First, KFA10 enables Case B to ensure there is discipline around investments being made (by the organization) on innovation (OCB63). *"It is about applying the discipline of doing things…need a discipline of technical, business, quality, risk review that says, 'Okay, do we need to stop doing that because we are spending a lot of money getting nowhere…?'"* (Senior Consulting Manager, Government & Health Services). Second, KFA10 enables Case B to drive value for clients and the benefits (clients pay for innovation generated) on investment made can be realized (OCB62, OCB64-OCB66). *"I think the value of innovation… is about innovating for our clients and driving value for them, it is something they will pay for"* (Senior Consulting Manager, Banking & Insurance). The FG discussed that, currently, for Case B, the measure of success is the number of successful client jobs: *"We measure by how many client jobs we sell…. I think*

that's how we measure it and that's how we value it as a firm" (Consulting Director, Industrial Products, Technology). The FG then went on to discuss whether measuring the value generated from innovation could be a potential future area of measuring success for them in addition to their current measures because as measures actually drive behaviours.

'NKFA5–Reinventing the business'. This refers to organizations continually looking to refresh themselves in terms of their areas of focus in the marketplace and also the way they deliver projects/work to clients. One key reason emerged as to why NKFA5 is important for managers. NKFA5 enables Case B to continue to be relevant as a business (OCB55-OCB57). The FG discussed how technology firms are potentially able to provide consulting services alongside technology solutions, which can be of more value (than pure management consulting services) to clients in the future. *"Actually a lot of what we do, thinking artificial intelligence and futuristic, can be automated and consulting could die within years"* (Senior Consulting Manager, Government & Health Services). NKFA5 can potentially enable consulting businesses to explore new areas that may challenge organizations to think far beyond their current solution offerings in the marketplace, adapt their businesses to creating new value-adding market offerings (related/unrelated to their existing offerings). Homing in on the point that Case B needs to continually refresh itself, one participant said, *"So, yes, it* [NKFA5] *is massively relevant to us in terms of how current are we, how immediate are we today/tomorrow…so being able to reinvent your business for a… firm like us is incredibly important"* (Consulting Manager, Government & Health Services). NKFA5 challenges employees internally to be on the cutting edge of progress, identifying new areas of opportunity (to stay relevant in the marketplace), a key challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

Thus, the discussion presented above provides the response to RQ2 for Case B in light of some of the challenges that the consulting industry faces (as described in Chapter 1, Section 1.5.4). The next section provides key insights obtained from research work undertaken at Case B.

6.5 KEY INSIGHTS FROM CASE B

Based on the findings from this study, four conclusions can be drawn with regard to key factors that relate to an innovative organizational culture in the following areas: (a) people practices within the organization that support innovative behaviours, (b) organizational leadership that creates an environment of support for innovation, (c) externally focused initiatives that impact on internal orientation towards innovation, and (d) how the factors can address some of the challenges that can inhibit innovation in PSFs.

First, a number of people-related practices have emerged as important for an innovative culture. The fact that 50% of the factors identified as important are indeed very closely related to people practices within an organization is significant. This research identified diversity (KFA7), empowerment (NKFA6), coaching and mentoring (KFB2), balanced teams (KFB1), enabling people to build knowledge to innovate (NKFA9), easy access to top management (KFB3) as the key people-related practices important for Case B. The focus on these areas would have an impact on creating a culture of innovation. For example, diversity creates an environment where multiple viewpoints/solutions for clients are discussed and debated. Also, empowerment, coaching and mentoring create an environment where consultants are given the freedom and also the necessary guidance to be able to come up with new and innovative solutions for clients. Likewise, access to top management builds an innovation-supportive relationship between leaders and junior staff. In Case B where a devolved model of innovation (i.e., innovation is not managed through a central innovation group, but control is distributed and embedded into individual teams) is being followed as a conscious decision, these factors greatly contribute to supporting the junior staff through creating an environment that is supportive of innovation.

Second, in the context of a global organization such as Case B, against the backdrop of a devolved model of innovation, leadership (NKFA1) at all levels can reshape and influence the organization internally in a significant way. It is evident that when leadership demonstrates their commitment to innovation, they are setting the right expectations with all

employees to maintain the urgency to innovate. Also, another area for Case B is the much needed structure for innovation that leadership can provide in the context of a devolved model of innovation; junior staff can have discussions with senior management so that can enable quicker decisions on innovation investments/implementation. This means that leaders at all levels provide support to junior staff through the process of identifying, checking feasibility and execution of innovative ideas. This research also highlighted that leaders at all levels setting ambitious growth targets (NKFA11) can radically and continually transform the organization by way of stimulating consultants internally to look for innovation opportunities to meet their ambitious growth targets. This indicates that it is not just innovation that drives growth, but actually growth ambition in turn stimulates the identification of innovative areas to deliberately disrupt themselves internally and create an environment that supports innovation.

Third, organizations will need to recognize that some of their externally focused activity with regard to markets and clients can have an impact on innovation within the organization. This research highlighted that Case B's continual quest to either partner with other firms or acquire those capabilities through acquisitions (KFA4) has provided them with the ability to quickly build capabilities and go-to-market (jointly bid along with partners) with innovative solutions. Another important area related to external focus is a desire to continually refresh themselves as a business (NKFA5) in terms of the areas of focus (market offerings) and the way those offerings are delivered can potentially drive and challenge behaviours internally to look for innovative ways to deliver value to clients. Yet another area that emerged as important was around measuring the value that is being generated as part of the innovation initiatives (KFA10) and weighing that up against the risk that is being taken. This is an interesting area to focus on as a measure of success including other current measures of success (e.g. number of new clients) in Case B. These three factors supported by an ability to take risks (KFB4) in a controlled way (through their current risk and quality framework) can provide Case B with the necessary external orientation to create an internal environment that is supportive of innovation.

Finally, some of the challenges that inhibit innovation in PSFs, as discussed above, discussed in Chapter 1 (Section 1.5.4), can be addressed through the key factors. For example, 'KFA4–Explore externally for innovation' enables Case B to build internal capabilities with external engagement that can, in turn, enable them to take innovative solutions to clients (a challenge for PSFs that KFA4 can address). Another example is 'KFB1–Coaching and mentoring', which creates an environment where junior and senior staff interact more, share ideas, and learn from each other, thus encouraging innovative behaviours (a challenge for PSFs that KFB1 can address). Thus, some of the factors identified in this case study address the challenges that can inhibit innovation in PSFs.

Based on the key insights developed here, a few practical recommendations were presented to Case B's management team (see Appendix 6-4 for details).

6.6 CHAPTER SUMMARY

This chapter provided answers to RQ1 and RQ2 for Case B. First, the data sources used for the analyses were presented. Second, the constructs (factors of innovation culture) elicited during the rep grid interviews were analyzed and presented, and of the 34 factors of innovation culture (#35 was 'Miscellaneous' and excluded), 12 key factors of innovation culture were identified for Case B. These were supported through evidence from documents and observations. This provided the response to RQ1. Third, FG data were analyzed and the results and findings were presented, identifying 24 reasons (specific to Case B) why the 12 key factors are important for managers. This provided the response to RQ2. Finally, the chapter concluded with four key areas that organizations similar to Case B can consider from a culture perspective: (1) people practices, (2) organizational leadership (and more specifically at a supervisory level), (3) external areas of focus that can create an internal orientation to innovation, and (4) how some challenges in PSFs can be addressed through the key factors. The overall implications of the findings of this chapter will be discussed in conjunction with Cases A and C as part of the cross-case analysis (Chapter 8) and findings and conclusions (Chapter 9).

7.0 CASE C – WITHIN-CASE ANALYSIS & FINDINGS

7.1 INTRODUCTION

This chapter is based on data and evidence from Case C (i.e. Engineering Consulting Co.) and presents the details of analysis and findings related to both research questions (RQ1 and RQ2) with respect to Case C.

Specifically, this chapter covers the following:

- Background information and data sources used for investigating Case C (Section 7.2);
- Results for RQ1: Data collection, analysis, findings and discussion (Section 7.3);
- Results for RQ2: Data collection, analysis, findings and discussion (Section 7.4);
- Key insights from Case C (Section 7.5); and
- The chapter summary (Section 7.6).

7.2 BACKGROUND

7.2.1   Company: Case C (Engineering Consulting Co.)

This case study was undertaken at Case C (Engineering Consulting Co.[64]), an international multidisciplinary engineering consulting company with operations in UK, Russia, Africa, Kazakhstan, South America and the Middle East. While they are predominantly UK-based, they are now expanding into international markets across the globe. The international side of its business has grown tenfold in the last decade, and now represents more than 40% of their turnover. The study has been undertaken at their offices in the UK, specifically London and

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[64] *Name has been changed to preserve anonymity. They are a niche, multi discipline, multi-site consultancy operating in diverse sectors, both within the UK and internationally, with a base of c. 500 employees.*

Stoke-on-Trent. Case C works with their clients in the development of natural mineral and energy resources, land and property, waste resource management, environmental and social management and infrastructure, infrastructure and utilities, hydropower and hydrogeology. Case C's core competencies include: Mining technology, environmental services, ground and environmental engineering, permitting across disciplines, coal exploration, mineral and waste management, and waste resource management. Case C's consultants are co-located at clients' sites, and their regional or international offices. In terms of the organization structure, the company broadly has functional disciplines working across industries such as mining, minerals, utilities, water and waste, land and property. Case C believes in providing efficient designs, which are innovative, safe, elegant and cost-effective for their clients. Their focus is on delivering innovation and value to clients in their field of operations. They are recognized widely in the industry for their reliability and quality of delivery.

7.2.2   Data Sources Used

A total of seven visits were made to London and Stoke-on-Trent to carry out data collection. Six visits were used for repertory (rep) grid interviews and one for the focus group discussion. Documents and artefacts were gathered from the public domain. Observations of the office layout, kitchen areas and general facilities were made and captured as field notes during the visits made to their offices in London and Stoke-on-Trent. Section 7.3 provides details of the results and discussion for RQ1 (*What are the most important factors of innovation culture as perceived by managers?*). Likewise, Section 7.4 provides details of the results and discussion for RQ2 (*Why are the factors* [*from RQ1*] *of culture considered to be important?*). Three sources were used to answer RQ1: rep grids, documents, and observations. One source was used to answer RQ2: focus group (FG).

7.3 RESULTS FOR RESEARCH QUESTION 1 (RQ1)

This section provides details of the data gathered, data analysis, and findings from each of the data sources used to answer RQ1. This section also provides a discussion relating to RQ1 for Case C.

7.3.1 Repertory Grid: Primary Evidence for RQ1

This is divided into three subsections: data collection, analysis and findings from rep grid interviews.

7.3.1.1 Data Collection

Twelve rep grid interviews were conducted. The 12 interviewees were selected to cover the full range of the various portfolios of services offered and the industry segments in which they operate. A mix of consulting managers at different levels within the organization (Senior Ground Engineer, Scientist, Geologist, Associate Director, Technical Director, Equity Director), and who are involved in delivering innovative services to clients, was chosen as shown in Table 7.1. The time taken per interview averaged 63mins, i.e., a total of 756 minutes of interviews. All were recorded and transcribed, resulting in 155pp. of transcript. A total of 123 constructs were elicited from the 12 interviews.

Table 7.1: Interview details

Interviewee No.	Designation	Industry Segment	Service line
1	Equity Director	Mining	Engineering and Environment
2	Associate Director	Mining	Mining Technology
3	Associate Director	Across functional disciplines	Permitting
4	Technical Director	Mining	Coal Exploration
5	Senior Ground Engineer	Across functional disciplines	Ground & Environmental Engineering
6	Associate Director	Hydropower	Energy & Climate Change
7	Senior Hydrogeologist	Hydrogeology	Environmental services
8	Technical Director	Minerals & Waste	Mineral & Waste Valuations
9	Environmental Scientist	Water & Waste Management	Waste Resource Management
10	Equity Director	Water & Waste Management	Waste Resource Management
11	Senior Engineer	Across functional disciplines	Environmental services
12	Associate Director	Mining	Mineral Estate Management

7.3.1.2 Data Analysis

As described in Chapter 4 (Section 4.4), three broad steps of analysis were undertaken. Here, an example of selected constructs with similar meaning has been used to explain how the analysis was undertaken:

Step 1: Coding the elicited constructs and grouping them

Interviewee 3 (Associate Director, Permitting) said,

Sample Quote	Code
"Yes I am looking at the clients I had in mind, more being able to have access to new technologies that come out that will help them" (Construct specified – Access to Technology)	Int3-9

Interviewee 4 (Associate Director, Coal Exploration) said,

Sample Quote	Code
"It is about using technology and looking to solve your problems, accepting the technology you have got to solve your problems, so actually it is addressing your problem or other issues through technology" (Construct specified – New Technology for Problem Solving)	Int4-4

Interviewee 5 (Senior Ground Engineer, Environmental Services) said,

Sample Quote	Code
"So, if this place bought a new technology survey kit, it is better for us. It is better for us to have innovation, how we use it, what can you use it for, so maybe it is taking over other people's innovation and then creating your own innovation? (Construct specified – Adopting New Technology)	Int5-10

Interviewee 7 (Senior Hydrogeologist, Hydrogeology) said,

Sample Quote	Code
"May be the software's or technology they are using. These ones are using the same old stuff. And the current is trying the new technologies." (Construct specified – Try New Technologies)	Int7-2

Please see Table 7.2 for the summary: the four constructs from individual interviews have been categorized into 'Supporting technology for innovation'.

Table 7.2: Deriving meta-constructs by categorizing constructs

Categories	Constructs	Int No.
Supporting technology for innovation	Access to technology	Int3
	New technology for problem solving	Int4
	Adopting new technology	Int5
	Try new technologies	Int7
	Upto speed with latest technology	Int8
	Use of up-to-date technology	Int9
	Embracing technology	Int10
	Making use of IT	Int12
	Use new technology	Int11

This categorization was undertaken by two researchers (A and B)[65] in parallel.

Step 2: Drawing up the reliability table

A reliability table (Table 7.3) was drawn up with the categorization of constructs undertaken by researchers A and B. Researcher A came up with 32 meta-constructs and Researcher B with 27. Based on the groupings i.e., categorization of constructs, the inter-rater reliability[66] was calculated and it was around 55%, more than was indicated by Miles and Huberman (1994) to be found at this stage (they suggest it to be around 45%).

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[65] *Researcher A is the author of this thesis. Researcher B (who already has a doctorate in digital image processing technology) was interested in the research on innovation culture and agreed to support Researcher A.*
[66] *Number of constructs agreed between Researchers A and B as a percentage of all the constructs in the table.*

Table 7.3: Drawing up a table to derive reliability

Researcher A \ Researcher B	People diversity	Flexible for Change	Freedom to innovate	Rewards for innovation	Investment in resources	Understand value of existing people
Diversity	Diversity within the organization Mixed workforce Welcoming people from around the world					
Flexible to Change		Flexibility to alter contracts Nimble and quick to change Easy to change	Room to try something different			
Empowerment		Freedom to work on problems Freedom to go outside our remit	Enable people to step outside comfort zone Freedom to think outside the box			
Rewarding innovation				Reward mechanism (shared mechanism) Rewards for ideas Sense of rewards		
Supporting technology for innovation					Access to technology New technology for problem solving Adopting new technology Try new technologies Up to speed with latest technology Use of up-to-date technology Embracing technology Making use of IT Use new technology	
Investment in innovation					Committing resources to innovative projects No barriers to invest Looking at innovation as an opportunity Resources to invest in innovation Funding ideas to test Funding to innovate	
Valuing employees						Fairness Recognition of values of personnel Free meals Professional development for staff (fairness)
Socializing						Fun Socializing (outside work) Organize social events (for team cohesion)

Step 3: Reliability checks

Based on further discussions, a final list of 29 was agreed between Researchers A and B. As suggested by Jankowicz (2003), all of the constructs were re-coded into one of the enhanced construct categories, again working independently and in parallel. The outcome produced a second reliability table that led to an IRR of close to 98%, which is generally required for construct validity as suggested by Jankowicz (2003).

7.3.1.3 Summary of Findings

As discussed in Chapter 4 (Section 4.4.2), to answer RQ1, the analysis was based on a consideration of both frequency of mention and variability[67], i.e., for a factor to be most important, the frequency of its occurrence should be high and the variability should also be high. Since two out of 29 meta-constructs were only mentioned twice, these did not meet the

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[67] *It is the percentage of the total spread of ratings. This is an indicator that differentiates most strongly between the elements (the six companies used for the interview as discussed in Chapter 4, Section 4.4.2) of the grid. So, the higher the variability, the higher is the importance of the factor (Goffin et al., 2010).*

minimum frequency of 25% (Goffin et al., 2010) and were eliminated. Further, 12 constructs were categorized into the "Miscellaneous" category, i.e., the constructs could not be grouped into two or more constructs. The remaining 27 meta-constructs (of the 29) were included for further variability analysis.

Table 7.4 provides a summary of the variability and frequency of all the meta-constructs derived from the analysis of rep grids. The descriptions of the meta-constructs/categories embody the essence of the constructs included under each meta-construct selected here. For example, the definition of 'Supporting technology for innovation' was defined (based on discussions with Researcher B) to include the essence of what was mentioned in the form of constructs by various interviewees (e.g. interviewee 3 mentioned 'Access to technology', interviewee 4 mentioned 'New technology for problem solving', interviewee mentioned 'Adopting new technology', etc.). Therefore, based on all relevant constructs in interviews 3, 4, 5, 7, 8, 9, 10, 11 and 12, 'Supporting technology for innovation' was defined as: *"This refers to how organizations leverage technology to support their innovation initiatives."* Likewise, definitions of all the meta-constructs were derived and are included in Table 7.4 for readers' reference under the column "Meta-construct Definition." The meta-constructs shaded grey in Table 7.4 were selected as the key factors of innovation culture as perceived by managers. It should be noted that in Case C, ten factors of innovation culture were found to be key factors.

Table 7.4: Results from Rep Grid data analysis

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Respondents	Meta construct Variability	Key Factor?
1	Supporting technology for innovation	KFA12	Access to technology	Int3	This refers to how organizations leverage technology to support their innovation initiatives	*"Yes I am looking at the clients I had in mind, more being able to have access to new technologies that come out that will help them"* (Interview 3) *"It is about using technology and looking to solve your problems, accepting the technology you have got to solve your problems, so actually it is addressing your problem or other issues through technology"* (Interview 4) *"So, if this place bought new technology survey kit, it is better for us. It is better for us to have innovation, how we use it, what you can use it for"* (Interview 5)	9	75%	10.17	Yes
			New technology for problem solving	Int4						
			Adopting new technology	Int5						
			Try new technologies	Int7						
			Upto speed with latest technology	Int8						
			Use of up-to-date technology	Int9						
			Embracing technology	Int10						
			Making use of IT	Int12						
			Use new technology	Int11						
2	Actively tracking market trends and aligning	NKFA8	Knowledge of the marketplace	Int4	This refers to an organization actively tracking market trends and aligning to market requirements/needs	*"I suppose in order to respond to the market, you've got to know the market"* (Inteview 4) *"By trying to adapt to the market we are trying to be in the front of...we think ahead, it* [the information] *feeds back into all the other things"* (Interview 10) *"It* [being forward looking and outward] *would provide a base to explore other avenues of business"* (Interview 12)	6	50%	9.95	Yes
			Keeping up with the changing market	Int9						
			Looking ahead and being aware of future conditions of markets	Int10						
			Recognition of failure to innovate	Int6						
			Forward looking	Int12						
			Forward thinking	Int5						
3	Flexible to change	KFC1	Flexibility to alter contracts	Int1	This refers to an inherent ability or appetite within an organization to make changes based on need and expediency that have arisen either because of internal or external (or both) drivers	*"The ability to change from a standard format in our contracts...we sometimes need the flexiblity to alter contracts to a particular set of* [client] *circumstances"* (Interview 1) *"We have to change to keep up with the clients...we are small and more nimble, but this client is hamstrung by the mere complexity of the relationships and the regulations"* (Interview 10) *"It is a bit like the characteristics that entrepreneurs have...they are receptive to innovation, the people who run the organization being open to the idea and concept of innovation, seeing the benefits and bringing it in"* (Interview 8)	5	42%	14.63	Yes
			Room to try something different	Int3						
			Nimble and quick to change	Int10						
			Easy to change	Int2						
			Leadership open to innovation	Int8						
4	Reinventing the business	NKFA5	Reinventing yourself	Int4	This refers to organizations continually looking to refresh themselves in terms of their areas of focus in the marketplace and also the way they deliver work to clients	*"There is a need to change to maintain your market share... the mining industry is going through a bad time at the moment... having to look at what we can consult on that is different to what we were doing before as the market has changed"* (Interview 4) *"Presence in different geographical regions... I'd say that the innovation is getting completely new concepts, completely new industries are being brought in... in Texas USA, we have shale gas a new area of business for us"* (Interview 9) *"Different strategies* [to renew or refresh businesses] *allow you to develop different ideas...you need to bring the different views* [to understand or make suitable] *to newer business areas...without that it would be impossible to innovate"* (Interview 1)	4	33%	12.74	Yes
			Reorganization of business in different sectors	Int1						
			Global presence	Int9						
			Diversifying your business	Int12						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Respondents	Meta construct Variability	Key Factor?
5	Empowerment	NKFA6	Enable people to step outside comfort zone	Int1	This refers to an organization providing professionals the space and autonomy in their work environment without interference	*"If you don't have a free hand to solve the problems and you have to stick with the guidelines then you will never find new solutions"* (Interview 7) *"Freedom to do things in different ways...standardized processes don't give you a chance to customize anything... but for innovation you need customization"* (Interview 11) *"Knowing that they [people] have support to float ideas, come back and talk to the business, doing x and y would be profitable to the business, and we have that [freedom] and it is encouraged"* (Interview 12)	4	33%	10.52	Yes
			Freedom to work on problems	Int7						
			Freedom to think outside the box	Int11						
			Freedom to go outside our remit	Int12						
6	Rewarding innovation	KFA2	Reward mechanism (shared mechanism)	Int1	This refers to an organization having a formal 'Rewards and Recognition' programme, which is tightly mapped to the innovation value generated/targets achieved	*"If people are rewarded, they are inspired to do more... you are given a bonus, taken out for dinner for achievements, that sense of reward if you want to be innovative"* (Interview 5) *"It is how you reward the employees...is it just monetary, just status, or job status...some people might go, 'there is no point in innovation because we are not recognized'...it is both rewards and recognition that actually promotes innovation"* (Interview 1)	3	25%	13.41	Yes
			Rewards for ideas	Int2						
			Sense of rewards	Int5						
7	Supportive organisation structure	KFC2	Change structure to encourage innovation	Int4	This refers to an organization making structural changes to enable quicker decision making and to support staff with guidance and procedures that can control delivery of work to clients	*"Too many people have got to agree before a decision is made... many companies that have a flat structure are risk averse... if there is a structure, for example, around one person, that person is thinking all the time to change"* (Interview 4) *"Time...you have got a lot of layers to get an idea through"* (Interview 1) *"There is a need for some of the structure and procedures...there needs to be discipline... with some clients we can't make too many mistakes and rush things in"* (Interview 3)	4	33%	12.09	Yes
			Decision-making quicker (ref. to bureaucracy)	Int1						
			Support from management (more process efficiency/ checks)	Int3						
8	Leadership focused on innovation	NKFA1	Management is service driven (ref. to support staff)	Int5	This refers to the focus that leadership accords to innovation in terms of providing the necessary guidance and support to teams on the ground	*"The CEO of this company [referring to one of the companies in the triad] is very imaginative and the management [owners who make decisions] there is very alive to innovation"* (Interview 8) *"Leadership having the vision and drive to explore innovation... employees see that leaders are interested in the business...they [leaders] want the business to succeed and it is always good to be part of success"* (Interview 12)	3	25%	11.15	Yes
			Management more alive to innovation	Int8						
			Leadership vision and drive to explore opportunities	Int12						
9	Effective internal relationships	KFC3	Good internal relationships	Int3	This refers to building an environment that encourages open communication and transparency among staff and between staff and management - engendering behaviours supportive of innovation	*"Having good relationships between colleagues... because it allows the crossover of ideas... and people need to be comfortable doing that"* (Interview 3) *"Good liaison between staff and directors... this is to consistently bring in fresh ideas and consistently at the ground level see what the staff think of right and wrong, what there is that directors are doing that they could improve on and of course the other way"* (Interview 9)	3	25%	10.55	Yes
			Liaison between staff and directors	Int9						
			Lack of candour (balance between openness and closedness)	Int5						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Respondents	Meta construct Variability	Key Factor?
10	External communication to the market	NKFA14	Tell the market we are innovative	Int7	This refers to an organization's regular and continual communication/active engagement with the marketplace with the aim of building reputation and confidence over time	*"Well it will create more work and business opportunities, people will be more busy and feel secure in their work place if they have jobs, I think it is really important to tell that we are innovative and don't miss the opportunity of the clients coming in"* (Interview 7) *"Re-branding and advertising that is what groups previous and client 3, consistently changing advertising, changing logos, it is about how you perceive them, how they are showing that they are growing as a business, how they are sustainable"* (Interview 9)	3	25%	9.89	Yes
			Changing company image	Int9						
			Reputation as innovative in the market	Int6						
11	Explore externally for innovation opportunities	KFA4	Wide reaching externally	Int6	This refers to exploring opportunities of innovation through engagement with external organizations. This could include (a) investing in utilising innovation that exists outside your own organization to further foster and develop innovation internally, (b) acquiring other companies, investing and helping start-ups, buying new companies and (c) building relations with 3rd parties to increase innovation	*"Wide reaching externally...removes the arrogance of knowing that you know best. It removes any preconceptions of a solution, it encourages more like a child like wonder...you know seeking out the best possible ideas, and interesting opportunities"* (Interview 6) *"If these companies are communicating or working with companies that are very advanced or that innovate, that's another way of innovation I'd say"* (Interview 7)	5	42%	8.60	No
			Interaction with others outside	Int9						
			Working with companies that innovate	Int7						
			Cross-working with other organizations	Int11						
			Interacting externally	Int10						
			Complementing capabilities	Int8						
12	Investments in innovation	NKFA17	Committing resources to innovative projects	Int3	This refers to an organization setting aside funds dedicated to innovation initiatives	*"Committing resources... it will allow people to have the tools to innovate"* (Interview 3) *"If this client wishes to invest in a new IT system, it does not make a significant difference to anybody financially and it is business as usual, but if these guys want to make such an investment, it makes a difference to the owners... as well as the business as a whole as employees have better technology"* (Interview 8)	6	50%	8.25	No
			No barriers to invest	Int4						
			Looking at innovation as an opportunity	Int6						
			Resources to invest in innovation	Int8						
			Funding ideas to test	Int7						
			Funding to innovate	Int12						
13	Enabling people to equip themselves with relevant skills	NKFA9	Knowledge and skills	Int3	This refers to an environment where consultants are supported through formal learning/training	*"I think the training, I'd call it a networking sort of training session. I had a colleague as well... the session was 8 to 12 and she was able to present in the office here in the afternoon... take directly from the session.... and use that in the organization"* (Interview 11) *"It [role flexibility that allows formal training to learn new skills] adds an aspect of fluidity in the business, or sectors, they all have the knowledge base, everyone's connected as opposed to everyone being separate, everyone's keeping pace with the business and markets"* (Interview 9) *"In a consultancy, you have to work so many hours a week to pay the bills and the rest of it. If you want to innovate, you need to take time out and thinking time or some form of training to enable innovation to happen"* (Interview 10)	5	42%	8.85	No
			Supportive of training	Int7						
			Paid training	Int11						
			Role flexibility	Int9						
			Training culture (incl. degrees/ certifications)	Int10						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Respondents	Meta construct Variability	Key Factor?
14	Best talent	NKFA4	Ideas people	Int2	This refers to having a workforce that is highly capable, creative and self-driven	*"If you have a company that has full of people who want to come only 9 to 5...this is kind of let's think outside the box, let's see what we can...I always think a job is how much you put into it, but you can make a boring job better"* (Interview 2) *"If people are genuinely interested and talented enough, I think they have more chance to be innovative....people who want to lawyers not for money but to be lawyers have more chance to be innovative in that field because they enjoy it"* (Interview 11)	5	42%	7.35	No
			Hire good people	Int5						
			Capable people with softer skills	Int10						
			Talented people	Int11						
15	Physical environment	KFA8	Good working environment	Int7	This refers to employees being provided with the right physical space and facilities that are conducive to innovation	*"We can use the work environment... for example, in Google they are very keen to have a pleasant working environment....let's say all the chairs are bright, slides in the office, these things don't bore you at work"* (Interview 7) *"Physical spaces... we moved to these offices about 8 years ago...but before I used to go to the office and open the windows to make sure it is cool in the summer.. .[this provides] ability for people to socialize, does not create a silo mentality...different working environments in terms of how you operate"* (Interview 10)	4	33%	9.55	No
			More spaces to relax	Int11						
			Buildings and facilities	Int9						
			Work environment (physical spaces)	Int10						
16	Innovation execution capability	KFA1	Agenda-driven innovation	Int6	This refers to organizations building the ability to drive successful innovation implementations and change, i.e., having the necessary knowledge, resources, processes and capability to deliver innovation	*"There is a common theme and common purpose for innovation, here [referring to a client in the triad] it is freeform... [referring to having a theme] people understand what the business is all about, what their role [in innovation] is within the business"* (Interview 6) *"With this one, ideas would be there, but implementing them would be a barrier... implementing ideas would improve the way you do things today"* (Interview 2)	4	33%	9.32	No
			Ideas implementation	Int2						
			Ideas are discussed and managed	Int7						
			Having the ability to change	Int4						
17	Safe environment	NKFB5	Freedom to fail	Int1	This refers to a working environment where people are given an opportunity to air their views and generate ideas, and also feel safe about it	*"There is no such thing as a bad idea, you are allowed to come up with an idea and at the end of the day say, 'no actually, it is not a good idea'"* (Interview 1) *"If you feel you have someone to rely on, it is a lot easier to make progressive steps... if you fail, it is not the end of the world, it is like you are still where you are, but if you are alone it is difficult to take that plunge"* (Interview 5)	4	33%	8.01	No
			You do things and fail	Int3						
			Freedom to form bespoke teams	Int6						
			Feeling of camaraderie	Int5						
18	Desire to be the best	NKFA18	Drive in management (enthusiastic)	Int2	This refers to an organization's desire to be a leader and always deliver something new/ game changing to the market	*"This one [referring to one client in the triad] is leading the market and this one [referring to another organization] is reacting to the market... although these guys are good, but they are not leading they are being led by the market"* (Interview 4) *"The Managing Director in this company is intensely interested in innovating. They are one of the companies that does things first that others don't do or haven't thought of"* (Interview 8)	4	33%	8.92	No
			Aspiration to lead the market	Int4						
			Looking to change	Int4						
			Trying to take something new to market	Int8						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Respondents	Meta construct Variability	Key Factor?
19	Diversity	KFA7	Diversity within the organization	Int1	This refers to an organization having a diverse group of people – diverse in various respects such as educational background, experience, ethnicity, gender, geographical location, etc. supporting their projects	*"Gender and ethnic balance... so diversity within the teams, diversity within the organization... if everybody thinks in exactly the same way, you are only going to get one potential solution"* (Interview 1) *"So, mixture of workforce, male and female, ethnic mixture as well... it [mixture] enables you to see the world with different aspects... for example we do a lot of overseas work, you interact with different cultures, you learn so much from that... different people from different organizations, experience... you get a much better spread"* (Interview 10)	3	25%	8.78	No
			Mixed workforce	Int10						
			Welcoming people from around the world	Int7						
20	Legacy of success	NKFC1	Legacy of success	Int1	This refers to a successful past that the members of staff can look back on and not only feel confident but actually build the future on the past record of success	*"History of having done it before is important.... see we have done this, go and follow in our footsteps"* (Interview 1) *"Innovation can depend on how innovative the company is as well... the sort of past history of innovation... if they have invented something, a new way of doing things in the past, they continue to do that.... sort of a repetitive cycle"* (Interview 11)	3	25%	7.69	No
			Past history of innovation	Int11						
			Experience	Int3						
21	Risk-taking	KFB4	Prepared to take a gamble	Int1	This refers to organizations willing to take risks by way of encouraging a culture of accepting failures and making it a part of their culture	*"Most people would have thought it was a stupid idea to start off with, if they were risk-averse, they would have said that the risk is too high they shouldn't do it... but the reward is so great that unless you take a risk you'll never know"* (Interview 1) *"I suppose whether you are risk averse or risk taking is one of the biggest fears... that you are taking risk and it is not going to work"* (Interview 4)	3	25%	9.09	No
			Risk-taking	Int4						
			Attitude to risk to try new things	Int10						
22	Cross-functional exposure	NKFC2	People investigate opportunities	Int2	This refers to staff interacting across functions and making sure there is cross-pollination of ideas	*"Being multi-disciplinary gives you a cross-over of ideas sometimes. Somebody from one discipline looks at a problem one way and somebody from another discipline looks at it from a different perspective and then you get that synergy"* (Interview 3) *"People feel threatened to break out of silos or to work outside the silos, they are not comfortable working in that environment... but you have to interact with other parts of the organization to change"* (Interview 10)	3	25%	6.88	No
			Multi-disciplinary and cross over of ideas	Int3						
			Interact with other parts of the business	Int10						
23	Socialising	NKFC3	Fun	Int5	This refers to non-work-related social interaction both inside and outside an organization	*"In my previous organization I just had a lot of fun... I used to chat to people, and in my ideal organization, if I can enjoy I will be inspired to do more"* (Interview 5) *"There will be social aspects in terms of the outside business... starting clubs, events... basically getting everyone involved as such"* (Interview 9)	3	25%	7.87	No
			Socializing (outside work)	Int9						
			Organize social events (for team cohesion)	Int11						
24	Valuing employees	NKFC4	Fairness	Int5	This refers to an organization generally valuing their employees by not only speaking about it but also demonstrating their support	*"Regardless of what business you are... if you are treated fairly you are inspired to do more... if you are treated unfairly you are less likely to innovate"* (Interview 5) *"Probably I'd say recognize value of staff... in these organizations it is recognized that during dead periods you might have teams of people doing nothing is worth bearing because that knowledge is too great a value to the business to lose"* (Interview 6)	4	33%	9.00	No
			Recognition of values of personnel	Int6						
			Free meals	Int11						
			Professional development for staff (fairness)	Int9						

No.	Final meta-construct/ Category	Rep Grid Code	Constructs from individual interviews	Reference	Meta-construct Definition	Example Quotes	Freq	% Respondents	Meta construct Variability	Key Factor?
25	Dedicated time for innovation	KFA9	Balance in utilization (time to innovate)	Int11	This refers to individuals being given time to reflect on consulting engagements being delivered (or already delivered) to develop innovative ideas	*"I need to be trained, I also need to work on projects, I think we need to have a balance between the both"* (Interview 11) *"There is a pressure to get the hours done... you are busy doing what you know, you are tied up with the day to day stuff"* (Interview 12)	3	25%	8.70	No
			Time	Int12						
			Developing new processes (releases time for people)	Int10						
26	Younger people	NKFC5	Younger managers	Int7	This refers to an organization that has more younger people who are inquisitive and talented	*"Basically if, let us say a company is fresh on the market, probably the directors are also not just out of the university but in their 30's, they are more likely to be innovative and enter market sectors which are not fully utilised"* (Interview 7) *"Probably youth, I think in a last decade or fifteen years, the big things that had happened....have been dreamt of and got off the ground are by younger people... they were under 40 or in some cases under 30... so stuff like Facebook, Amazon, Google, going back to Microsoft... all were done by people who were young...it is about inquiring minds and not being constrained"* (Interview 8)	3	25%	7.06	No
			Younger inquiring minds	Int8						
			Training graduates into organization (ref. fresh talent)	Int9						
27	Extensive market research	NKFC6	More research to stay ahead	Int8	This refers to an organization extensively researching and building the necessary knowledge and skills to innovate	*"Seeking new knowledge through research can ultimately provide a step change to a business either in a services market or produce a product"* (Interview 6)	2	17%	NA	No
			Cutting edge research	Int6						
28	Flexible policies around work	NKFC7	Flexibility to work from any location	Int10	This refers to an organization providing flexibility at work in terms of allowing people to work from any location and flexibly	*"Sort of flexibility in terms of employment...there is this 'do you work at home'... so having the flexibility so people can deal with their day to day issues...and the opposite is being in the office 9 to 5"* (Interview 10)	2	17%	NA	No
			Lazy days to work flexibly	Int11						
29	Allow experiementation	NKFA16	Freedom to implement ideas	Int1	This refers to allowing people to experiment and failure is acceptable	*"You try new things, it is an iterative process isn't it?... You do what you know and become stale and less competitive and the other way is to look at doing things..., what is going on in the wider world, what do you want to be part of?"* (Interview 12)	2	17%	NA	No
			Trying new things	Int12						
30	Miscellaneous	NA	Good hiring process	Int11	NA*	NA*	12	NA*	NA*	No
			Offer quality to clients	Int5						
			Opportunity to challenge	Int2						
			Open with employees on strategy	Int5						
			Decisions by one or a few people	Int1						
			Organized processes	Int2						
			Positive view of the future	Int6						
			Idea benefit identification	Int2						
			No external constraints	Int4						
			Demonstrate solutions to generate more work	Int7						
			Ability to overcome constraints	Int6						
			Relationship of trust with client	Int3						

Legend: KFA–Key Factor for Case A (repeated in Case C); NKFA–Non-Key Factor in Case A (repeated in Case C); KFB–Key Factor for Case B (repeated in Case C); NKFB–Non-Key Factor in Case B (repeated in Case C); KFC–Key Factor unique to Case C; NKFC–Non-Key Factor unique to Case C

The next two sections provide details of the analysis of documents and observations respectively as supporting evidence for the key factors of innovation culture.

7.3.2 Documents: Supporting Source of Evidence for RQ1

7.3.2.1 Data Collection

Documents from the public domain such as company website publications and postings, latest press releases and archives (company websites), and Internet based information (LinkedIn, Facebook), documents from the Confederation of British Industry concerning the firm were collected for review and analysis. A total of 146 pages were included in the analysis. Please refer to Table 7.5 for details. The data collection effort was fully focused on aspects that are relevant and central to the study (Yin, 2009), i.e., the key factors that were identified as important for innovation culture. Each of the documents listed in the table had a different purpose, which meant that they would not lend themselves easily to analysis (Yin, 2009). Therefore, caution was exercised in reviewing the documents to ensure that understanding of the context was maintained while the coding was undertaken. How the coding was undertaken is explained next.

Table 7.5: Documents analyzed for Case C

No. of pages	Document	Characteristics	Comments
63	Web pages	Company website	Available in public domain. Reviewed a large portion of the company's web pages
4	Web pages	Facebook postings	Available in public domain. Reviewed a large portion of the company's web postings on Facebook
7	Web pages	LinkedIn Postings	Available in public domain. Reviewed a large portion of the company's web postings on LinkedIn
72	UK Delivering Global Mining Solutions	Confederation of British Industry	Available in public domain. Published by UK Trade and Industry

7.3.2.2 Data Analysis

The analysis/coding of documents followed two simple steps: Descriptive coding and summarizing data. The coding frame (see Appendix 7-1) developed as part of the earlier analyses (including codes from rep grid analysis) was used as a template for document data analysis. However, care was taken to make sure the warning *"Be Careful: if you go*

looking for something, you'll probably find it" was taken seriously by way of reading the documents multiple times (Saldaña, 2013: p. 89).

Step 1: Descriptive Coding

Table 7.6 presents an example of quotes that were coded that relate to "Supporting technology for innovation" (KFA12, an important factor of innovation culture that emerged as important in Case C, also noted in Case A).

Table 7.6: Code mapping to key factor of innovation culture

No.	Relevant statement extract	Key Factor Code	Code Name	Notes/analysis
1	*"Our teams of technical specialists have extensive remediation… using a wide variety of remediation technologies and we have successfully designed… throughout the UK"*	KFA12	Supporting technology for innovation	There is evidence from documents that Case C uses technology to support their innovative solution offerings
2	*"From the laboratories and modular pilot plant… with samples ranging from a few kilograms for bench scales scoping studies to several tonnes for full, detailed studies [reference is Case C's 2020 research programme]"*	KFA12	Supporting technology for innovation	There is evidence from documents that Case C uses technology to support their innovative solution offerings

Step 2: Summarizing evidence from documents

A summary of the analysis of documents was produced at this stage (for confidentiality reasons, the full coding details are not available for review). For example, in this case it was noted that there is documented evidence that 'KFA12–Supporting technology for innovation' exists, i.e., Case C uses technology to support their innovative solutions. At least five references across the various documents indicated the importance of supporting technology for innovation. Thus, the document analysis provided supporting evidence to bolster the evidence from the rep grid analysis. The full details of the amount of supporting evidence are summarized in the next subsection.

7.3.2.3 Summary of Findings

Each factor of innovation culture has had varied levels of supporting evidence collated from the documents analyzed (see Table 7.7). The frequency of occurrence indicates the level of importance accorded by Case C to the factors of innovation culture (factors have been shaded where evidence was available); this of course is limited by the amount of documentation available to the researcher for review.

Table 7.7: Evidence from documents supporting RQ1

No.	Code	Code Name	Evidence from Documents	Frequency
1	KFA12	Supporting technology for innovation	Yes	5
2	NKFA8	Actively tracking market trends and aligning	No	0
3	KFC1	Flexible to change	Yes	3
4	NKFA5	Reinventing the business	Yes	8
5	NKFA6	Empowerment	No	0
6	KFA2	Rewarding innovation	Yes	1
7	KFC2	Supportive organization structure	No	0
8	NKFA1	Leadership focused on innovation	Yes	1
9	KFC3	Effective internal relationships	Yes	1
10	NKFA14	External communication to the market	Yes	13

Thus, documents have been used as a source of supporting evidence with regard to key factors of innovation culture to answer RQ1. Next, supporting evidence in the form of observations is discussed.

7.3.3   Observations: Supporting Source of Evidence for RQ1

7.3.3.1 Data Collection

In the case of observations, given the time and resource constraints, observational data were written down (as field notes) (Yin, 2009) while the visits to Case C were made for the purpose of interviews and focus group discussion. Two office locations in London and one in Stoke-on-Trent were included in observations. The details of various aspects have been noted: books, attractive captions displayed in the reception area, LCD displays, the general layout of the work spaces, kitchen area/cafeteria areas, meeting rooms, and people gatherings.

7.3.3.2 Data Analysis

In line with the analysis of documents, the analysis undertaken of field notes followed two simple steps: Descriptive coding and summarizing data. The coding frame in Appendix 7-1, developed as part of the earlier analysis, was used as a template for analysis.

Step 1: Descriptive Coding

Table 7.8 presents examples of coding quotes from field observations that relate to 'KFC3–Effective internal relationships' (supporting evidence). Refer to Appendix 7-2 for coding details.

Table 7.8: Code mapping to key factor of innovation culture

No.	Relevant statement extract from field notes	Key Factor Code	Code Name	Notes/analysis
1	*"Directors, Associate Directors, Technical Directors sit with the teams and work closely with them"*	KFC3	Effective internal relationships	Supporting evidence, but only very limited: The fact that managers are co-located with teams is indicative of attempts enabling teams to build good relationships and communicate well
2	*"Although very formal, they seem to have a very friendly environment - people walk up to desks of colleagues and discuss, request for help* [also helped in recruiting participants for this study]*"*	KFC3	Supporting internal relationships	Supporting evidence, but only very limited: The company has an open office layout and employees easily interact with each other

Step 2: Summarizing evidence from observations

There was very limited evidence available from observations; however, two key factors had supporting evidence from observations: 'NKFA8–Actively tracking market trends and aligning' and 'KFC3–Effective internal relationships'. Concerning the former, there were displays of commodity prices on LCD displays for employees to see the trends in the market. Although this is very limited support to NKFA8, it does indicate the organizational focus on making that information available to employees. Concerning the latter, the supporting evidence for effective internal relationships included the way the teams are co-located with managers, a very informal environment where people could walk up to the desks of others (it is an open office layout) and have discussions and seek any help if needed, and they do regularly have discussions with consultants from offices based in other locations. Thus, observational analysis provided some supporting evidence to be evaluated in conjunction with the evidence from rep grids, focus group, and document analysis, but has been largely limited. Observations could not be used as concrete evidence, especially in some of the areas such as 'KFC1–Flexible to change', 'NKFA5–Reinventing the business', as that would require the researcher spending a significant amount of time with the organization. The next section presents details of the

findings from observations. The available evidence from the summary of observations is presented in Table 7.9.

Table 7.9: Summary of field notes and evidence from observations

No.	Code	Code Name	Summary of observations from field notes	Evidence from observations
1	KFA12	Supporting technology for innovation	None	None
2	NKFA8	Actively tracking market trends and aligning	There were displays of commodity prices on LCD displays for employees to see the trends in the market, it does indicate the organizational focus on making that information available to employees	Limited supporting evidence
3	KFC1	Flexible to change	None	None
4	NKFA5	Reinventing the business	None	None
5	NKFA6	Empowerment	None	None
6	KFA2	Rewarding innovation	None	None
7	KFC2	Supportive organisation structure	None	None
8	NKFA1	Leadership focused on innovation	None	None
9	KFC3	Effective internal relationships	This included the ways the teams were co-located with managers, a very informal environment where people could walk up to the desks of others (it is an open office layout) and have discussions and seek any help if needed; and they regularly have discussions with colleagues from offices based at other locations. All of these are indicative of practices within the organization that are designed to facilitate better internal relationships	Limited supporting evidence
10	NKFA14	External communication to the market	None	None

7.3.3.3 Summary of Findings

The supporting evidence from observations, although limited, was used to understand the culture within the organization (e.g. aspects such as technical directors, associate directors are co-located with teams, etc.). Observations also provided some insight into why some factors have not emerged as important (e.g. their building is being fully refurbished and facilities related to 'KFA8-Physical Environment') so physical layout was less of a priority for Case C than it was for Case A for instance.

7.3.4 Discussion

Out of a total of 29 factors (30# is 'Miscellaneous' and excluded), ten factors were identified as important based on the rep grid interviews, and supported by evidence from documents and observations. This section discusses the important factors in the context of the organization, considering the evidence that is available through documents and observations (see Figure 7.1). Please note that the discussion is only on the key factors, the definitions of the non-key factors for Case C are available in Table 7.4.
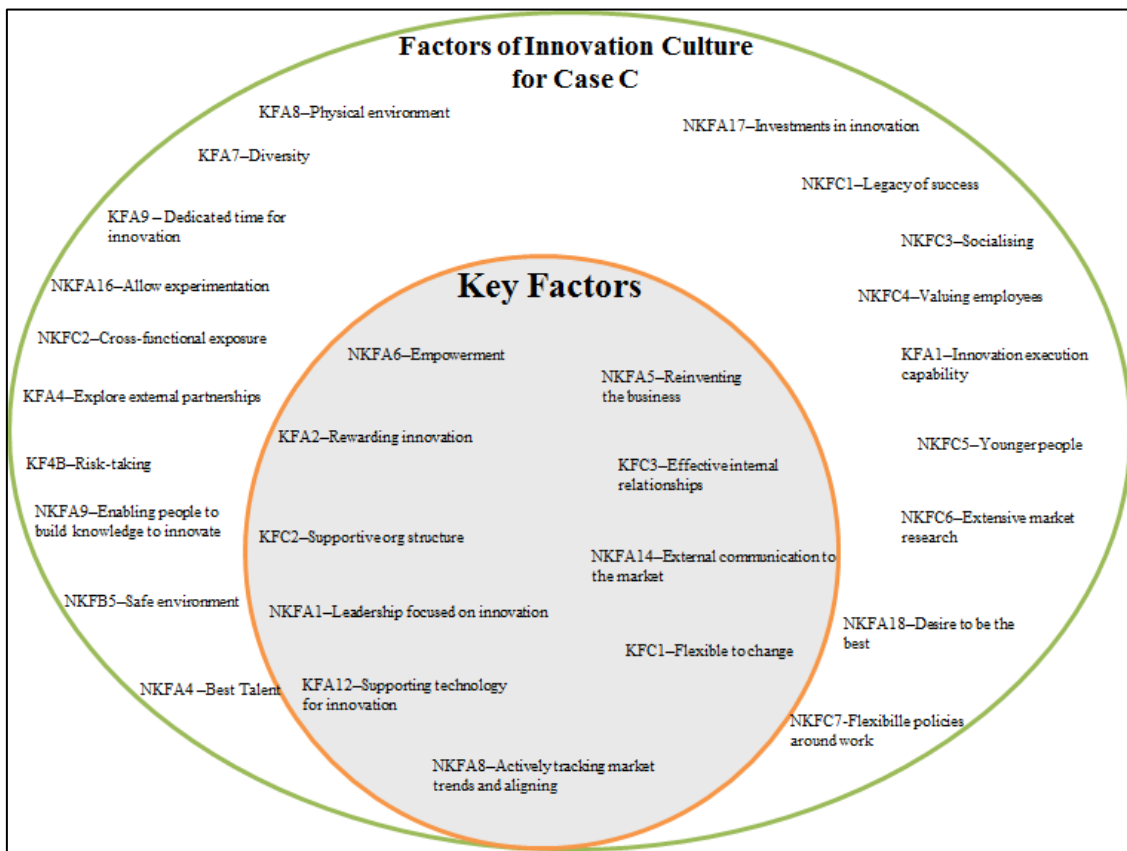
Figure 7.1: Factors of innovation culture from Case C (Key factors are shaded grey)

'KFA12–Supporting technology for innovation'. Case C is a domain intensive engineering consultancy, which uses technology to support their innovation initiatives such as new solution offerings and solving client problems. One interviewee said, *"So, if this place bought new technology survey kit* [technology as an enabler for innovation] *how we use it, what you can use it for* [makes a difference]*"* (Senior Ground Engineer, Ground & Environmental Engineering). And another interviewee said, *"It is about using technology and looking to solve your* [client] *problems"* (Technical Director, Coal

Exploration). Documentary evidence supports the view of taking the support of technology (set up in a lab) to deliver innovative solutions for clients. This was evident from the review of Case C's EU XYZ 2020 research, which is one of the biggest EU Research and Innovation programme ever funded by the EU. The programme promises more breakthroughs, discoveries through taking great ideas from the lab to the market. The key finding is that technology is a key enabler that can be leveraged to support firms' innovation initiatives.

'NKFA8–Actively tracking market trends and aligning'. Case C uses NKFA8 as a means of responding to the market and also identifying new opportunities. One interviewee said, *"I suppose in order to respond to the market, you've got to know the market"* (Technical Director, Coal Exploration) and another said, *"It* [being forward looking/tracking trends] *would provide a base to explore other avenues of business"* (Associate Director, Mineral Estate Management). Documentary evidence suggests that Case C provides details of markets' progress and movements to its employees in the form of commodity prices on their website[68]. From observations, it was noted that commodity prices were also displayed on LCD screens in the reception areas. The key finding is that NKFA8 creates an environment where people are able to track markets closely and respond to changing market needs.

'KFC1–Flexible to change'. For Case C, with their strategic move to enter international markets, flexibility in contracts and the way they deliver work to clients is required to accommodate different regulatory regimes. One participant said, *"You have to get so many different permissions…the ability to change from a standard format in our contracts…we sometimes need the flexibility to alter contracts to a particular set of* [client] *circumstances"* (Equity Director, Mining). Documentary evidence suggests that engineers at Case C are flexible to address client problems in innovative ways: *"Our engineers…ready to rise to new challenges… new ways of applying our experience…in innovative ways"* (Company Website). More documentary evidence suggests that that Case C promises clients about being flexible (i.e., flexibility in combining skills from across the organization to deliver client projects). The key finding is that, for Case C,

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[68] *These data were available and downloaded from InfoMine.com.*

flexibility to change creates an environment where they are able to work in a continually changing regulatory environment and be able to address local needs in the case of international operations.

'NKFA5–Reinventing the business'. For Case C, NKFA5 is extremely important in order to grow as a business, especially in international markets. Considering the need to grow their business outside the UK, one interviewee said, *"In different geographical regions* [referring to international markets]*...I'd say that the innovation is getting completely new concepts, completely new industries…in Texas USA, we have shale gas a new area of business for us"* (Environmental Scientist, Water & Waste Management). Another interviewee said, *"Different strategies* [to refresh businesses] *allow you to develop different ideas...you need to bring the different views* [to understand or make suitable] *to newer business areas...without that it would be impossible to innovate"* (Equity Director, Mining). Documentary evidence suggests that Case C is aggressively trying to move into new areas of business where they had little presence previously. Case C has ventured into areas not core to their business; they are also looking at innovative solutions around realizing benefits from uneconomic mines, and developing new capabilities to address such new requirements by acquiring companies and partnering[69]. The key finding is that NKFA5 relates to a strategic intent to continually refresh what's delivered to the market and also how it is done.

'NKFA6–Empowerment'. It has long been established that PSFs recognize the need for consultants to operate flexibly as *"individual experts"* (Reihlen & Werr, 2012: p. 8). One interviewee said, *"If you don't have a free hand to solve the problems…you have to stick with the guidelines, then you will never find new solutions"* (Senior Hydrogeologist Hydrogeology, Environmental services). Another interviewee said, *"Knowing that they* [people/consultants] *have support to float ideas, come back and talk to the business, doing x and y would be profitable to the business, and we have that freedom and it is encouraged"* (Associate Director, Mineral Estate Management). No

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[69] *Although this sounds similar to KFA4–Explore externally for innovation opportunities, acquiring and partnering in this instance could be a means to an end, i.e., relating to reinventing themselves. They are not both exactly the same. Reinventing specifically refers to the principle of having an inherent strategy and the necessary penchant for continually refreshing or renewing themselves as a business.*

documentary or observational evidence was available for this factor. The key finding is empowerment is crucial as it creates an environment where consultants have a free hand (with limited interference from management) to find new solutions to solve client problems and also do what is profitable to the business.

'KFA2–Rewarding innovation'. For Case C, rewards (e.g. bonus) and recognition (e.g. consultants are taken out for dinner) both have emerged as relevant. One interviewee said, *"If people are rewarded, they are inspired to do more… you are given a bonus, taken out for dinner for achievements, that sense of reward if you want to be innovative"* (Senior Ground Engineer, Ground & Environmental Engineering). Another interviewee said, *"It is how you reward the employees...it is both rewards and recognition that actually promotes innovation"* (Equity Director, Mining). Although documentary evidence is limited, the company website, for example, suggests that rewards at Case C are based on how employees help develop and shape the business, how they interact and support colleagues, clients and partners. Therefore, the key finding is that for an innovative culture, rewarding employees in the form of both financial rewards and non-financial rewards (recognition) for their contribution to shape and grow the business is important.

'KFC2–Supportive organization structure'. In Case C, potentially, many equity directors have to agree before a key decision is made. This can sometimes inhibit them from responding quickly to changing/demanding markets with innovative ideas and solutions. So, structure can be limiting or inhibiting innovation in that sense. One interviewee said, *"Too many people have got to agree before a decision is made… if there is a structure, for example, around one person, that person is thinking all the time to change"* (Technical Director, Coal Exploration). Talking about the quicker decision making to get an idea through to implementation, one interviewee said, *"Time...you have got a lot of layers to get an* [innovative] *idea through"* (Equity Director, Mining). Again in that sense structure can be limiting. On the other hand, talking about the benefits of a structure that can support working well with the clients, one interviewee said, *"There is a need for some of the structure and procedures...there needs to be discipline... with some clients we can't make too many mistakes and rush things in"* (Associate Director,

Permitting). There was no documentary or observational evidence available to support this key factor. The key finding is that, a supportive organization structure is important for Case C to enable them to make quick decisions and also be a form of corrective mechanism to ensure there is discipline, and the right quality of outputs are delivered to clients.

'NKFA1–Leadership focused on innovation'. The role of leadership varies from the top level to middle management levels to supervisory levels. For Case C, it emerged that a drive from the top management supporting innovation is important. One interviewee said, *"The CEO of this company* [referring to a company familiar to the interviewee] *is very imaginative and the management* [owners who make decisions] *there is very alive to innovation"* (Technical Director, Minerals & Waste). Documentary evidence, although very limited, suggests that Case C's directors are closely involved in working with teams on client engagements. This provides a unique opportunity for the directors to emphasize the importance of innovation in the delivery of services to their clients. The key finding is that leadership plays a key role by providing the teams on the ground with the necessary direction and support on innovation during delivery of projects, thus driving a culture of innovation across the organization.

'KFC3–Effective internal relationships'. Internal relationship among employees and between employees and directors emerged as important for Case C. One interviewee said, *"Having good relationships between colleagues* [especially across functional groups]*...because it allows the crossover of ideas...and people need to be comfortable doing that"* (Associate Director, Permitting). Another interviewee said, *"Good liaison between staff and directors... this is to consistently bring in fresh ideas... see what the staff think of right and wrong, what there is that directors are doing that they could improve on and of course the other way"* (Environmental Scientist, Water & Waste Management). Documentary evidence suggests that Case C's directors continually visit local offices to communicate with the employees in terms of financial performance of the company, discuss matters of concern to the business, and discuss suggestions for future decisions. The key finding is that building an environment of good internal

communication among staff and between staff and management engenders behaviours supportive of innovation by way of sharing ideas.

'NKFA14–External communication to the market'. For Case C, continually communicating with the market is important in order for them to bolster their already good reputation in the market and to attract new clients. *"Well it* [referring to external communication to the market] *will create more work and business opportunities…I think it is really important to tell that we are innovative and don't miss the opportunity of clients coming in"* (Senior Hydrogeologist, Hydrogeology, Environmental services). Also, there is ample evidence from documents that Case C is continually communicating with the market in the form of (a) presenting thought leadership papers to provide insights to clients on new regulatory changes (e.g. Case C provided insights on Brexit and its impacts on industry), (b) organizing/hosting seminars and innovation related events (e.g. weather and climate change and their impacts, prospects of new technology in the market, etc.), and (c) showcasing and advertising their technical prowess in solving client problems. The key finding is that Case C creates an environment of innovation internally by encouraging active communication externally with the market, which in itself is a process that encourages creative thought leadership. This of course brings the benefit of new opportunities as stated by the interviewees.

The next section discusses details of the results from RQ2.

7.4 RESULTS FOR RESEARCH QUESTION 2 (RQ2)

This section provides details of the data gathered, analysis, and findings from the focus group discussion, which was used as the primary, and only, source of evidence to answer RQ2 (*Why are these factors* [derived from the answer to Research Question 1] *important?*), and also the discussion relating to RQ2 with respect to Case C.

7.4.1   Focus Group Interview: Primary Source of Evidence for RQ2

7.4.1.1 Data Collection

An invitation was sent to all 12 interviewees to attend the focus group (see Appendix 7-3 for invitation details); five interviewees attended (see Table 7.10). The focus group lasted for two hours. This resulted in 34 pages of transcript, which was used to undertake coding.

Table 7.10: Focus Group details

Interviewee No.	Designation	Industry Segment	Service line
2	Associate Director	Mining	Mining Technology
3	Associate Director	Across functional disciplines	Permitting
4	Technical Director	Mining	Coal Exploration
6	Associate Director	Hydropower	Energy & Climate Change
9	Environmental Scientist	Water & Waste Management	Waste Resource Management

7.4.1.2 Data Analysis

The focus group data were transcribed and read/re-read multiple times (Gioia & Thomas, 1996), which yielded 50 codeable statements. Each statement consisted of a sentence or a sequence of sentences conveying a coherent point (Weber, 1990; Saldaña, 2013) as to why each factor was considered to be important or significant for Case C. A method of constant iteration was used to create mutually exclusive and exhaustive codeable statements (Miles & Huberman, 1994), which were then summarized as aggregate statements, based on what was said for each factor.

The 50 statements were coded using open coding (each code for Case C was coded using the prefix OCC, i.e., Open Code for Case C) based on the general meaning they

conveyed. For example, for 'KFA2–Rewarding innovation', one participant said (see the underlined phrase), *"If you were to take what I would coin as 'innovation', we have developed a new service, which made a high level of profit, that was reflected in our annual financial bonus system. For exceptional performances individuals are rewarded, exceptional service of any type"* (Associate Director, Hydropower, Energy & Climate Change), and it was coded as 'To reward exceptional work (OCC26). Also the statement *"I did actually go to these events once* [south of France where management takes people as an opportunity to learn and contribute]. *It is pretty hard work! The first year you go, you haven't got a clue what you do, which is true. The second year you go, you'll see a few extra faces and it takes three years to get to the point where you actually know the drill, to know what you are doing for the next 12hrs"* (Technical Director, Mining, Coal Exploration) was coded as 'To get an opportunity to learn while working with management (OCC28)'. This process was undertaken for all of the 10 key factors of innovation culture and 50 open codes emerged (OCC1 to OCC50).

Open coding resulted in a number of codes against each factor. Therefore, for the purpose of summarizing the key reasons, aggregate statements were derived. The method used here was multiple reviews and iterations. So, for example, the three codes, OCC26 to OCC28, were read/reread several times to derive two aggregate statements (see Table 7.11).

Table 7.11: Focus group coding example and derivation of aggregate statements

Code	Meta-construct	Quotes from focus group	Open Coding - Case C		
			Open Code Name	Open Code	Aggregate Statement/s
KFA2	Rewarding Innovation	*"Innovation would be very very closely tagged to revenue and therefore profit. If you were to take what I would coin*	To reward exceptional work	OCC26	To promote exceptional work (OCC26) To have an opportunity to work with and learn from leaders (OCC27, OCC28)
		" Certain people, who are in the good books of management [for their good performance], *are off to have fun and games with the directors… a lot of people look at this as rewards… also another opportunity you get with management* [to learn]*."*	To provide juniors with an opportunity to work with management	OCC27	
		"I did actually go to these events once [south of France where management takes people as an opportunity to learn and contribute]. *It is pretty hard work! The first year you go, you haven't got a clue what you do, which is true. The second year you go, you'll see a few extra faces and it takes three years, to get to the point where you actually know the drill, to know what you are doing for the next 12hrs… the continuity thing is quite important at these events."*	To have an opportunity to learn while working with management	OCC28	

In this example, both codes OCC27 and OCC28 together indicate[70] that KFA2 is a means of providing opportunities to junior staff to work with and learn from leaders; hence they were grouped together as one aggregate statement 'To get an opportunity to work with and learn from leaders'. OCC26 could not be grouped and hence has been documented as a separate aggregate statement 'To promote exceptional work').

A similar process was followed with all of the 50 codes.

7.4.1.3 Summary of Findings

Reason codes OCC1 to OCC50 were aggregated at the level of each factor to derive aggregate statements or key themes of reasons from the open codes. The aggregation led to a total of 29 aggregate statements or key reasons as presented in Table 7.12. The discussion of the reasons against each factor is presented in the next section (Section 7.4.2).

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[70] *Saldaña (2013) suggests that it may often be required to use more than one statement to understand the key relationships. In this example, it is the link here between junior staff working with management and junior staff actually learning from such an experience.*

Table 7.12: Results from focus group data analysis

Code	Meta-construct	Quotes from focus group	Open Coding - Case C		
			Open Code	Reason Code#	Aggregate Statements
KFA12	Supporting technology to innovate	So I think we _do leverage technology but at a time and pace that suits our business needs our and clients' comfort factor_	To meet business need and clients' expectation	OCC1	To provide operational efficiencies and effectiveness (OCC2, OCC5) To help secure new opportunities ahead of competition (OCC3, OCC4) To meet clients' expectations (OCC1, OCC6)
		If we look at competition, we have to keep up with technology, _especially if that technology makes them [competition] cheaper_, and also if it produces something that is better at the end of the day	To provide cost efficiencies	OCC2	
		But there are certain things, _if the competition has got, which is designed to take a project from A to B to a build situation and project manage it well, we haven't got that then we haven't got the job doing that type of work_, so we've got to either buy that technology, not necessarily overtake them but to keep up with the market	To avoid losing opportunities to competition	OCC3	
		There are certain cases where we are slightly ahead of the curve, in the case of renewables where we had some that were unique, that might be through the use of GIS [Geographical Information Systems] _software and how we have adapted it to a particular market... this is where we definitely had a headstart on the competition_, we were a year or two years ahead.	To explore new opportunities ahead of competition	OCC4	
		When it comes to technology, it is a tool for _using the knowledge and leveraging the experience we have in a more efficient way and in a more effective way._	To leverage experience in a more efficient and effective way	OCC5	
		The generators said if we keep the depth back by 1mm, the site is fit for purpose. The other side came back with, "we've got this satellite survey to show that over the last 20 years this site has drifted by 2mm." Here the client actually believed that there had been movement created by the mine. There was a lot of argument, because it is a space thing and NASA, they believed as if it was incredibly accurate.... in fact it isn't, _but it helps you win the argument. But when we find ourselves in either side of the argument, we can sub-contract it. It will help the side of argument._	To provide confidence to manual findings [as clients expect more evidence]	OCC6	
NKFA8	Actively tracking market trends and aligning	We all do in our own departments think outside the box, _expand our knowledge and develop into areas we have not been in before, by keeping up with the market trends with the clients,_ the circulars that come in, the commodity market prices going up and down, who is building where...	To gain knowledge that informs future opportunities	OCC7	To be able to anticipate changes in the trends that may catch them by surprise (OCC10, OCC11) To inform future opportunities and areas on which to focus (OCC7, OCC8, OCC12) To trigger internal conversations around future investments to make (OCC9)
		We have to track the market, if we look at the waste department, they do all landfill designs and the rest of it, _but the market isn't in landfill anymore but for recycling. So we have to check the markets and the government regulations to see where does that leave the landfill and demand for it._	To check for relevance of current services	OCC8	
		As the mining industry has gone down [referring to the trends], what it has made us do is consider areas we perhaps wouldn't have considered before. You take Iran, we are looking at developing mining projects... _if mining takes off it's going to be the next hotspot in terms of the resources Iran has got for investment for people to put money in._ So we are tracking that market, in fact we are ahead of that market.	To provide a trigger internally to identify new opportunities to invest in the future	OCC9	
		It's down to the time management side of things. As a business policy we have good time sheeting and that's how we make our money but the intention is no one should really go above 70 to 80 % chargeable, and there should be a block of time set aside every week and every day. _You know on an ongoing basis to use for business development, to use for reflecting on market trends and sort of anticipate potential changes that can come and bite you._ In reality it's feast or famine, you are either absolutely bowled over or just on the side twiddling your thumbs. That's perhaps one thing we do struggle with and do need to do better that's to find a way of capturing market trends... so you know an active ongoing review of the state of the market, sort of predicting trends.	To anticipate changes in the market to avoid being taken by surprise	OCC10	
		We don't have a designated person [in mining specifically] who is looking at trends, to watch the market trends or helps to do these innovations. When we had this international thing going, we did our own thing when we've got 5mins. _And if we hadn't had the 5mins we've missed the boat because we haven't had time, because we've always got to be chargeable._	To avoid missing business opportunities	OCC11	
		We have noticed that gold prices have gone up so we did quite a bit of gold mining. _So, we follow up on the clients where we know where the commodities are going,_ I mean copper's on its knees, nickle's on its knees. So, they are not going to ask us _to go and have a pit-a-pat around the mine.... gold companies will_. So, looking at the commodity prices, are we up or down is a key factor.	To be able to follow the market to generate opportunities	OCC12	

Code	Meta-construct	Quotes from focus group	Open Coding - Case C		
			Open Code	Reason Code#	Aggregate Statements
KFC1	Flexible to change	*We will change, because we have to adopt , we've got to change because we have to keep ourselves busy.... We've got a tremendous cross section of people that we don't know what they are all capable of. In my experience, if I come across a job that I am not capable of doing, I'll know a man in our company that does. So, we adapt to everything that comes in really, it is generally among the sort of things we do. We were a mining consultancy at one time, but now we do ecology, environmental studies, permitting, landfill etc.*	To enable people to adapt to change	OCC13	To enable people to swiftly adapt to change and be able to provide services (innovatively) to meet client needs (OCC14, OCC13) To build expertise quickly to deal with oddities and respond to market needs (OCC15, OCC17) To adapt to changing trends in the market (OCC16)
		People [referring to clients] come to us because of the fact that we will deal with changing circumstances swiftly and in a positive manner, rather than 'oh we don't know that sorry'.	To swiftly change to provide services to meet client needs	OCC14	
		When there has been a challenging project, we actually rise to the occasion and we'd be very successful at doing the oddities , over the years I know we'd done quite a few odd ball jobs and have been successful... I think that's where we had got repeat business and steady clients over the years	To build necessary capabilities to deal with oddities	OCC15	
		I think historically we have changed. XYZ came in and set up a new environmental department. We are not fast at reacting to change, I think we are very slow and cautious... but if we can see that the market is going that way, and we know that we can contribute to, the business does change. We have done archaeological acquisitions, we've taken that on because someone looked at the market and said this is something that we can offer. I think caution is not too bad, is it?	To be able to adapt to changing market trends	OCC16	
		We are a largely reactive organization because of the type of industries we serve... it is more about the market having the needs,and currently fulfilled by getting consultants on board either for knowledge shortfall or personnel shortfall. We have to be very flexible in becoming experts quite quickly in new areas, it may be a piece of new legislation arrives and all of a sudden that becomes something that we actually need to offer within our services. Maybe we've got staff that we can train to sort of do that or maybe we have to recruit someone or maybe even purchase a small company. Our reactive nature means that we are inherently flexible because of the constantly changing market conditions.	To build new capabilities quickly to meet clients'/ market's need	OCC17	
NKFA5	Reinventing the business	*I have got an example, in overseas mining we have set up representative offices in countries like Beijing, Romania. The model didn't work, the model was to parachute people expats from the UK based on expertise, we've got presence in that country through a natural office that the potential clients in that country just did not accept the model, they said unless you are employing Romanians, Chinese engineers, or Russian engineers you are not doing it now and none of these worked particularly in China, we pulled out of Romania for exactly the same reason. And we changed the model with Moscow, because we were thinking about the presence in that country, so we started actually employing Kazak engineers, Moscow engineers... it has changed the dynamics. People now look at Russian office as XYZ Russia, and we have the presence in Moscow. So reinventing the business has worked overseas for us.*	To be able to expand into international markets	OCC18	To be able to expand into global markets (OCC18) To build capabilities to respond to markets/business need (OCC19, OCC20)
		We adapt. If a project comes in and if there are lots and lots of elements that we don't do and instead of farming it out... maybe we'll have a go at it and that becomes a dimension. I mean we did a job at chemicals and in actual fact the client really liked the report. So, we wouldn't be afraid to go and start another one. Because it gives you an experience and we've found out all sorts of things... I mean we went out of budget, but the learning curve was there for our next job that might come along.	To build resilience to respond to markets when need arises	OCC19	
		We've made up 80% of their [referring to a company they acquired] business. They sent a note to us saying due to 'downturn we are going to close'.....we said, 'hang on, are you closing the business, how much would it be to buy the business'... we bought them, within a year, there was a turn around, the markets improved and that was a fantastic business opportunity. We finally acquired a company that can help us deliver these projects. Our reinventing the business is more organic, I would say opportunistic.	To build new capabilities to deliver projects	OCC20	

Code	Meta-construct	Quotes from focus group	Open Coding - Case C		
			Open Code	Reason Code#	Aggregate Statements
NKFA6	Empowerment	*Well, I think it is quite important that we are empowered really. Because that's the only way we are going to survive really. I think a lot depends on like, who your line manager is and how much opportunity he can take or how innovative he can be. I mean marketing in charge is very flexible so I do tend to go here and everywhere in different routes but in other departments, I am not sure they might not have that freedom.*	To enable managers to support team members	OCC21	To think outside the box (OCC23) To be able to manage workload flexibly (OCC22, OCC24) To establish good relationship between management and employees (OCC21, OCC25)
		We are empowered. But sometimes that is countered by what is chargeable time. You could be 100% chargeable, yet we could go and do it.	To be able to strike a balance between chargeable time and initiatives	OCC22	
		I have got total empowerment to do what I think is fit at the time. That could include thinking out of the box.	To be able to think out of the box	OCC23	
		We all to a certain extent have the ability to control the work we do. So in that respect we are all empowered. I mean if I want to do something out of office hours, then it does become how is that time going to be chargeable. That sort of element might kick in, so you might be curtailed a little bit.	To manage billable time and time set aside for initiatives	OCC24	
		The empowerment of trusting you to manage your time, your days, your workload and speak up when it is getting too much, delegate work to others if you can't do it... whatever it might be. When it comes to saying that actually my day is better spent at the NEC for 2 days to attend this conference on whatever it might be. If you trust in people, go a little bit extra and say for business development it is okay and again it comes back to market awareness and market trends.	To establish a relationship of trust between management and employees	OCC25	
KFA2	Rewarding innovation	*Innovation would be very very closely tagged to revenue and therefore profit. If you were to take what I would coin as 'innovation', we have developed a new service, which made a high level of profit, that was reflected in our annual financial bonus system. For exceptional performances individuals are rewarded, exceptional service of any type.*	To reward exceptional work	OCC26	To promote a culture of exceptional work (OCC26) To be able to provide an opportunity for juniors to work with and learn from leaders (OCC27, OCC28)
		Certain people, who are in the good books of management [for their good performance], are off to have fun and games with the directors... a lot of people look at this as rewards... also another opportunity you get with management [to learn].	To provide juniors an opportunity to work with management	OCC27	
		I did actually go to these events once [south of France where management takes people as an opportunity to learn and contribute]. It is pretty hard work! The first year you go, you haven't got a clue what you do, which is true. The second year you go, you'll see a few extra faces and it takes three years, to get to the point where you actually know the drill, to know what you are doing for the next 12hrs ... the continuity thing is quite important at these events.	To get an opportunity to learn while working with management	OCC28	

Code	Meta-construct	Quotes from focus group	Open Coding - Case C		
			Open Code	Reason Code#	Aggregate Statements
KFC2	Supporting organization structure	*We signed an MoU* [Memorandum of Understanding] *in South Africa. It's taken me 12 months to get the management to agree to an MoU. This is a simple MoU, they are just 'we'll help each other to get work'. When it went to the management, they questioned us on the wording and said 'what are we committing ourselves to'. In the end we've made the changes, it took 12 months. Instead we could have been working proposals in South Africa, Russia. I think quicker decision making is inhibited by lack of a supportive structure.*	To facilitate quicker decision making	OCC29	To facilitate quicker decision making (OCC29, OCC33)
		There is that corporate side of things which you are talking about [referring to another participant who spoke about 12 months to sign an MoU] *because we are a very cautious business in many ways. If it is on a personal platform, I think it is polar opposite. If you were to say, I have a great idea and we can make a lot of money by going into this market, then 'off you go'. Spend 6 months, get some money, get some personnel, have a go! But when you go and ask for an MoU with another company, then fun and games begin. It is really a schitzophrenic business in that sense.*	To provide a free hand to experiment	OCC30	To provide personal freedom to respond to clients (OCC30, OCC31, OCC32)
		We get massive support for personal initiative and personal sort of freedom and on the other hand from a corporate bit absolutely locked down and scared.	To have personal freedom to do things	OCC31	To have a cautious approach to identifying opportunities to make an investment (OCC34, OCC35)
		In response to a client, if somebody rings us today and says, we have to be in Mauritania on Monday morning, the likelihood is that one of us will be in Mauritania on Monday morning... we happily spend a couple of grand, get a hotel and fly over there	To have freedom to respond to client requests	OCC32	
		I have been in the business for 10 years. I have heard our management say that our current management structure slows down decision making and is less effective. So, therefore we need to do something about it. 10 years later I see a new structure two positions were created. We are a very slow moving business.	To enable quicker decision making	OCC33	
		We need to see the organic growth, we need to see that people have been doing it low level and building up and then we will employ a team of people... there is that bit of the business may see a need for it, or want it to happen, and from a personal side you want it to happen and be committed to it. But then you might come up against this wall, that's when the corporate bit comes in and that's where they say we need the business case. It has to be a 100% solid business case before we spend a quarter of a million each quarter.	To make sure the investment is worth it	OCC34	
		In a very peculiar way, we have to be very careful about the slow corporate and the fast personal initiative because what it encourages people to do is 'do your own thing'. That is good in one way, but perhaps not.	To take a cautious approach to initiatives	OCC35	
NKFA1	Leadership focused on innovation	*It all depends on your line manager really. For me, I have got quite a lot of flexibility ... I have never felt curtailed. I have these time constraints, not having enough time, I'd love to do lots and lots of things, but I just haven't got the time... but I have never actually been stopped doing anything. I have always been sort of encouraged to do. But we've got to be chargeable and innovation becomes a sideline thing.*	To support juniors by giving them flexibili	OCC36	To allow consultants time to balance their work and the time to focus on innovation (OCC36)
		I think leadership is supportive of innovation... but can we afford to do this [innovation]*? But we have to prove the business case if we have to invest a lot on innovation.*	To ensure investment on innovation is worth making	OCC37	To provide guidance on investment in innovation (OCC37, OCC38)
		Unless you have a spare pot of money, you cannot invest. Google has got a lot of spare cash to invest and if that doesn't work you throw it away. But we are not in that boat, we have to make every penny count and unless we show the business case is there to do. We've been on projects where we said that we need software. We said that we will do that on the back of...put that cost in the proposal cost and our previous finance director said 'No' because history says we don't make money on these sort of projects... so we are not going to pay for the software to do it properly. So, we are in a catch 22 situation and we do have to prove the business case.	To make sure there is a strong business case for invetsment	OCC38	

Code	Meta-construct	Quotes from focus group	Open Coding - Case C		
			Open Code	Reason Code#	Aggregate Statements
KFC3	Effective internal relationships	*I think on the whole we have that [referring to good internal relationships] and people talk to each other. As XYZ said earlier, I know a man in that department, who can help… so we get the synergies, don't we? … if you look at each office, they have their own budget and you see empire building. When a job needs to be done, we could help each other, but it is our job and we need the income and money from it… if the money is coming into the company [no matter from where], that's what we want to achieve… if we can work with other offices better, then we should be doing that.*	To derive synergies from working with people in other departments	OCC39	To get synergies from working with others (OCC39) To help solve client problems together (OCC40) To prevent gossip and negative stories from spreading (OCC41, OCC42) To improve consultant-director relationships (OCC43, OCC44)
		We are not curtailed in who we can get up and talk to. I can work with anyone to troubleshoot a problem. We bounce off each other with problems [client related problems].	To resolve client problems	OCC40	
		Our communication internally is pretty good and also with senior management… if the communication is good about what's going on… there are too many announcements that come in an email about such and such has happened and whether it is promotions or whatever and if we would not have heard through the grapevine and I think the communication can be better.	To prevent negative stories spreading	OCC41	
		I mean we could be more open on certain things… the XYZ was a touchy subject and nobody stopped the gossip after. That is a prime example of letting the workforce know… I am not saying we need to know the nitty-gritty of it, but they could have said something a little bit sooner.	To prevent gossip	OCC42	
		Our internal communications are good. But things like bonuses, the communication could be better, if not it is bad for the morale. They should manage the expectations.	To improve employees and director relationships	OCC43	
		I think face to face communication boosts the morale. You've actually been spoken to face to face.	To improve the morale of employees	OCC44	
NKFA14	External communication to market	*If we don't go to these events, the feedback is, 'oh we didn't see you at PIDC'.*	To be visible to potential clients	OCC45	To understand where the markets are going (OCC46) To generate business leads (OCC47) To gain mindshare (OCC45, OCC48, and OCC50) To communicate how unique the business is (OCC49)
		We do external communication because that then tells us what the innovations are. It is a guide as to where the market's going. For example, with shale gas, should we be innovating to take on board the whole shale gas issue, this only came about because we have been tracking the market and we had communicated at the sort of 'do's', various exhibitions and things put out there.	To understand where the markets are going	OCC46	
		One of the things through the different things I got involved with was oil and gas people. Our discussion was more on the environmental side of oil and gas. Now oil and gas is something that we don't do… but because I had built a relationship with this chap through a different avenue and he knows what we do, we talked a little bit more around the environmental side of oil and gas. I mean we have got a couple of marine biologists who sit in XYZ place, but they are marine people we'd need if we are going into the environmental side of oil and gas.	To generate more innovative and new business opportunities	OCC47	
		I think a lot of symposiums that we go to, it's a lot of money… for us it is about identifying more of those symposiums where we can maximise what we put across… and sometimes you could meet up with your clients in these events.	To improve visibility	OCC48	
		The other way we do it is, we have people do articles. What we do is, if we do something specifically that is either cutting edge or quirky or different to what other people are doing, we try and put an article in the Mining magazine and that then gets what we do… what we do is innovative in that we put different bits together and use that as a solution to a problem.	To communicate how different or unique the business is	OCC49	
		I was on this project where there was a decision to be made to either cover up a burial ground of some nomadic tribes or exhume the bodies. And because of a little article I was all over the world in 10 or 15 magazines and I have been interviewed here, there and everywhere and I seem to have become a global expert in XYZ..tribal graves .	To gain mindshare of potential businesses	OCC50	

Legend: OCC is Open Code for Case C.

7.4.2   Discussion

Based on the FG discussion, this case study identified 24 key reasons (documented as aggregate statements in Table 7.12) as to why the ten key factors of innovation culture are important for managers. This subsection presents a discussion on the findings from the analysis with the aim of answering RQ2 against each key factor of innovation culture. The discussion presents RQ2 in the context of the PSF industry and the challenges PSFs currently face (based on the discussion presented in Chapter 1, Section 1.5.4, which highlights six challenges that can inhibit innovation in the PSF industry[71]).

    'KFA12–Supporting technology for innovation'. This refers to how organizations leverage technology to support their innovation initiatives. Three key reasons (aggregated from codes OCC1 to OCC6) emerged as to why KFA12 is important for managers. First, KFA12 is able to provide (Case C) operational efficiencies and effectiveness (OCC2, OCC5). One interviewee said, *"When it comes to technology, it is a tool for using the knowledge and leveraging the experience we have in a more efficient way and in a more effective way"* (Technical Director, Coal Exploration). Second, KFA12 helps Case C to secure new opportunities ahead of competition (OCC3, OCC4). One participant said, *"If we look at competition, we have to keep up with technology, especially if that technology makes them* [competition] *cheaper"* (Technical Director, Coal Exploration). Third, KFA12 enables Case C to meet clients' expectations (OCC1, OCC6). One participant said, *"So I think we do leverage technology but at a time and pace that suits… clients' comfort factor"* (Associate Director, Energy & Climate Change). The latter two reasons are associated closely with creating a culture of identifying areas of new opportunities and also providing innovative solutions to clients respectively. Both these are challenges as identified in Chapter 1 (Section 1.5.4).

    'NKFA8–Actively tracking market trends and aligning'. This refers to an organization actively tracking market trends and aligning to market requirements/needs. Three key reasons (from codes OCC7 to OCC12) emerged as to why NKFA8 is important

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[71] *Chapter 8 provides a detailed account of how the key factors across all three case studies support in making a contribution towards addressing the challenges in the PSF industry, which will need to be overcome in order to establish a culture of innovation*

for managers. First, through NKFA8, Case C is able to anticipate changes in the trends that may catch them by surprise (OCC10, OCC11). *"You know on an ongoing basis to use* [information on markets] *for business development, to use for reflecting on market trends and sort of anticipate potential changes that can come and bite you"* (Associate Director, Energy & Climate Change). Second, NKFA8 is able to inform future opportunities and areas on which to focus (OCC7, OCC8, and OCC12). One participant said, "[NKFA8 enables Case C to] *expand our knowledge and develop into areas we have not been in before, by keeping up with the market trends"* (Technical Director, Coal Exploration). Third, NKFA8 is able to trigger internal conversations around future investments to make (OCC9). *"As the mining industry has gone down* [referring to the trends]*, what it has made us do is consider areas* [from an investment perspective] *we perhaps wouldn't have considered before"* (Associate Director, Mining Technology). Thus, all of the three reasons enable Case C to internally create an environment for identifying new business opportunities, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFC1–Flexible to change'. This refers to an inherent ability or appetite within an organization to make changes based on need and expediency that have arisen either because of internal or external (or both) drivers. Three key reasons (from codes OCC13 to OCC17) emerged as to why KFC1 is important for managers. First, KFC1 enables people to swiftly adapt to change and be able to provide services (innovatively) to meet client needs (OCC14, OCC13). *"So, we adapt to everything that comes in really... we were a mining consultancy at one time, but now we do ecology, environmental studies, permitting, landfill, etc."* (Associate Director, Mining Technology). Second, KFC1 enables Case C to build expertise quickly to deal with oddities and respond to market needs (OCC15, OCC17). *"We actually rise to the occasion and we'd be very successful at doing the oddities"* (Environmental Scientist, Waste Resource Management). Third, KFC1 enables Case C to adapt to changing trends in the market (OCC16). *"We can see that the market is going that way... we've taken that* [archaeological acquisitions] *on because someone looked at the market and said this is something that we can offer"* (Associate Director, Energy & Climate Change). Thus, KFC1 creates a culture of providing innovative client solutions, building expertise (capacity to innovate) to deal

with oddities, and adapting to market needs. The first two have been identified as challenges for PSFs in Chapter 1 (Section 1.5.4).

'NKFA5–Reinventing the business'. This refers to organizations continually looking to refresh themselves in terms of their areas of focus in the marketplace and also the way they deliver work to clients. Two key reasons (from codes OCC18 to OCC20) emerged as to why NKFA5 is important for managers. First, NKFA5 enables Case C to be able to expand into global markets (OCC18). *"And we changed the model with Moscow* [referring to how they conducted business internationally]*… so we started actually employing, Kazak engineers, Moscow engineers... it has changed the dynamics… so reinventing the business has worked…for us"* (Technical Director, Coal Exploration). Second, NKFA5 enables Case C to proactively build capabilities to respond to markets/business need (OCC19, OCC20). *"We did a job* [referring to a client requirement that Case C didn't have any capabilities to deliver to] *at 'chemicals' and in actual fact the client really liked the report. So we wouldn't be afraid to go and start another one"* (Associate Director, Mining Technology). Thus, NKFA5 creates an environment where consultants are prompted to come up with innovative ways of responding to international (new) market requirements and also build internal capabilities (the capacity to innovate) to innovatively respond to unique business needs (of clients). These two (identify new opportunities and build capacity to innovate) are challenges for PSFs as discussed in Chapter 1 (Section 1.5.4).

'NKFA6–Empowerment'. This refers to an organization providing professionals the freedom in their work environment without interference. Two key reasons (from codes OCC21 to OCC25) emerged as to why NKFA6 is important for managers. First, NKFA6 enables consultants to think outside the box (OCC23). *"I have got total empowerment to do what I think is fit at the time. That could include thinking out of the box"* (Associate Director, Mining Technology). Second, NKFA6 enables consultants to be able to manage their workload flexibly (OCC22, OCC24). *"We are empowered. But sometimes that is countered by what is chargeable time. You could be 100% chargeable, yet we could go and do it* [undertake innovative activities despite billing constraints]*"* (Associate Director, Permitting). Third, NKFA6 enables Case C to establish a good relationship

between management and employees (OCC21, OCC24, and OCC25). One participant, emphasizing the importance of trust through empowerment and how that enables them to build a good working relationship between employees and management, said, *"trusting you to manage your time, your days, your workload and speak up when it is getting too much"* and *"if you trust in people, go a little bit extra and say… it is okay"* (Associate Director, Energy & Climate Change). The first reason addresses the challenge of providing innovative solutions to clients, the second enables Case C to balance billing hours and time allocated to innovation activities, and the third enables them to build internal relationships, which can enable more internal interactions/behaviours supportive of innovation. All three are challenges for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFA2–Rewarding innovation'. This refers to an organization having a formal rewards and recognition programme, which is tightly mapped to the innovation value generated/targets, to ensure that innovation is appropriately rewarded. Two key reasons (from codes OCC26 to OCC28) emerged as to why KFA2 is important for managers. First, KFA2 enables Case C to promote exceptional work (OCC26). *"For exceptional performances individuals are rewarded, exceptional service of any type"* (Associate Director, Energy & Climate Change). Second, through KFA2 (more specifically 'recognition'), Case C is able to provide an opportunity for junior staff to work with and learn from senior staff/leaders (OCC27, OCC28). *"Certain people, who are in the good books of management* [for their good performance]*, are off to have fun and games with the directors… a lot of people look at this as rewards… also another opportunity you get with management* [to learn]*"* (Technical Director, Coal Exploration). Thus, rewarding innovation creates an environment or culture where people are able to produce exceptional performance and have an opportunity to learn and be on an internal growth path, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFC2–Supportive organization structure'. This refers to an organization making structural changes to enable quicker decision making and to support staff with guidance and procedures that can control delivery of work to clients. Three key reasons (from codes OCC29 to OCC35) emerged as to why KFC2 is important for managers. First, KFC2 enables Case C to facilitate quicker decision making (OCC29, OCC33).

Talking about the positive steps Case C is taking towards establishing a supportive structure for innovation, one participant said, *"Our current management structure slows down decision making and is less effective"* (Associate Director, Energy & Climate Change). Second, KFC2 enables Case C to provide their consultants personal freedom to respond to clients (OCC30, OCC31, and OCC32). Talking about having a supportive management structure and fewer levels of approval, one participant said, *"In response to a client…* [if] *we have to be in Mauritania on Monday morning, the likelihood is that one of us will be in Mauritania…we happily spend a couple of grand, get a hotel and fly over there"* (Technical Director, Coal Exploration). Third, KFC2 enables Case C to take a cautious approach to identifying opportunities to make an investment (OCC34, OCC35). One participant said, *"We need to see the organic growth…from a personal side you want it to happen and be committed to it. But then you might come up against this wall* [referring to the corporate risk management structure]*…it has to be a 100% solid business case before we spend a quarter of a million each quarter"* (Associate Director, Energy & Climate Change).

'NKFA1–Leadership focused on innovation'. This refers to the focus that leadership accords to innovation in terms of providing the necessary guidance and support to teams on the ground. Two key reasons (from codes OCC36 to OCC38) emerged as to why NKFA1 is important for managers. First, NKFA1 enables leaders (or supervisors on the ground as in Case C) to allow consultants time to balance their work and the time to focus on innovation (OCC36). *"It all depends on your line manager really…I have never felt curtailed…I have never actually been stopped doing anything"* (Associate Director, Mining Technology). Second, NKFA1 enables leaders in Case C to provide guidance on investment in innovation (OCC37, OCC38). Talking about the leadership evaluating the proposals and ensuring investment is worth making, one participant said, *"We have to make every penny count and…show the business case is there to do"* (Technical Director, Coal Exploration). Thus, NKFA1 provides the necessary direction for consultants in Case C to make trade-offs between the available billable time and that which can be allocated to innovation, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'KFC3–Effective internal relationships'. This refers to building an environment that encourages open communication and transparency among staff (also across departments) and between staff and management – engendering behaviours supportive of innovation. Four key reasons (from codes OCC39 to OCC44) emerged as to why KFC3 is important for managers. First, KFC3 enables consultants in Case C to get synergies from working with others (OCC39). *"I think on the whole we have that* [referring to good internal relationships] *and people talk to each other…I know a man in that department, who can help…so we get the synergies"* (Associate Director, Permitting). Second, KFC3 enables consultants to help solve client problems together (OCC40). *"We are not curtailed in who we can get up and talk to. I can work with anyone to troubleshoot a problem. We bounce off each other with problems* [client related]*"* (Associate Director, Mining Technology). Third, KFC3 enables Case C to prevent gossip and negative stories from spreading (OCC41, OCC42). Talking about how open communication can play a role in building good internal relationships and thereby preventing negative stories from spreading, one participant said, *"I mean we could be more open on certain things…the XYZ was a touchy subject and nobody stopped the gossip after"* (Associate Director, Mining Technology). Fourth, KFC3 enables Case C to improve consultant-director relationships (OCC43, OCC44). Talking about how good internal communication can enable better junior staff and leader relationships, one participant said, *"Our internal communications are good. But things like bonuses, the communication could be better, if not it is bad for morale. They* [referring to the leaders at all levels] *should manage the expectations"* (Technical Director, Coal Exploration). Thus, KFC3 creates an internal culture for better internal interactions, a challenge for PSFs as discussed in Chapter 1 (Section 1.5.4).

'NKFA14–External communication to the market'. This refers to regular and continual communication with the market in terms of innovative activities within the organization. Four key reasons (from codes OCC45 to OCC50) emerged as to why NKFA14 is important for managers. First, NKFA14 enables Case C to understand where the markets are going (OCC46). One participant said, *"We do external communication because that then tells us what the innovations are* [required]. *It is a guide as to where the market's going"* (Technical Director, Coal Exploration). Second, NKFA14 enables

Case C to generate business leads (OCC47). *"Now oil and gas is something that we don't do...but because I had built a relationship with this chap through a different avenue…we talked a little bit more around the environmental side of oil and gas"* (Technical Director, Coal Exploration). Third, NKFA14 enables Case C to gain clients' mindshare (OCC45, OCC48, and OCC50). *"Because of a little article* [about Case C's new expertise] *I was all over the world in 10 or 15 magazines and I have been interviewed here, there and everywhere and I seem to have become a global expert in XYZ…tribal graves"* (Associate Director, Mining Technology). Fourth, NKFA14 enables Case C to communicate to the market how unique their business is (OCC49). One participant said, *"We try and put an article in the Mining Press and that then gets what we do* [in terms of business]...*what we do is innovative in that we put different bits together and use that as a solution to a problem"* (Technical Director, Coal Exploration). And another said, *"For us it is about identifying more of those symposiums where we can maximise what we put across"* (Environmental Scientist, Waste Resource Management).

Thus, the discussion presented above provides the response to RQ2 for Case C in light of some of the challenges that the PSF industry faces (as described in Chapter 1, Section 1.5.4). The next section provides key insights obtained from research work undertaken at Case C.

7.5 KEY INSIGHTS FROM CASE C

Based on the findings from this study, four conclusions can be drawn with regard to key factors that relate to an innovative organization culture in the following areas: (a) people practices within the organization that support innovative behaviours; (b) organizational leadership that creates an environment of support for innovation; (c) externally focused initiatives that impact on internal orientation towards innovation; (d) support mechanisms through processes and structures within the organization that are supportive of innovation; and (e) how the key factors address some of the challenges in PSFs that can inhibit innovation.

First, there are three people practices (30%) of the key factors ('NKFA6–Empowerment', 'KFA2–Rewarding innovation', and 'KFC3–Effective internal relationships') that emerged as important in Case C. Empowerment (NKFA6) creates an environment where consultants have the freedom to be able to think outside the box and flexibly manage their workload that can enable them to provide innovative solutions to clients. Rewarding innovation (KFA2) in the form of non-financial rewards of working closely with senior staff/leaders provides motivation to junior staff as they can learn, grow their professional skills in general, and also grow their careers in the organization. Effective internal relationships (KFC3) creates an environment where consultants working across functional disciplines are able to gain synergies from working together to solve client problems, supports in avoiding negative stories from spreading within the organization, and enables the forging of better working relationships between consultants and management. These people practices create an environment of support for innovation.

Second, in the context of Case C evolving into a global organization, leadership at all levels can influence the organization in a significant way. Two key factors ('NKFA1–Leadership focused on innovation' and 'KFC1–Flexible to change') that relate to the role of leadership emerged as important. NKFA1 (referring to the role of immediate supervisors) supports consultants in prioritising their work – work that focuses them on innovation as opposed to the work that relates to billing hours and chargeable time. Also, KFC1 (flexible to change) is another area where leadership's role can be very important especially as Case C is entering into new markets (internationally). Leaders can create an environment and provide the flexibility that enables consultants to respond to the unique needs of clients and make decisions to build the necessary capabilities, and adapt to new market trends.

Third, there are three key factors ('NKFA8–Actively tracking market trends and aligning', 'NKFA5–Reinventing the business', and 'NKFA14–External communication to the market') that relate to the external focus of an organization. Actively tracking markets creates an environment internally where managers are continually anticipating changes, identifying new areas of business opportunity to focus on leading to internal discussions on future investments to make in innovation. An organization refreshing their

focus in the marketplace and how they deliver work to clients creates an internal environment where they are looking to continually build new capabilities into their business to meet the expectations of the new focus in the marketplace. Also, the culture of external communications with the market encourages consultants to continually discuss with potential clients the uniqueness of their business and new business opportunities/solutions, gain clients' mindshare, and have discussions with them around the progress of the markets in the future. All of these externally based activities create an internal environment of innovative behaviours.

Fourth, there are two key factors ('KFA12–Supporting technology for innovation', 'KFC2–Supportive organization structure') that relate to either processes or mechanisms that will need to be set up within an organization for individuals and teams to support their innovation initiatives. The supporting technology and tools (KFA12) relate to enabling consultants with the necessary new software technology licenses, infrastructure/equipment to be able to deliver innovative solutions to clients. Further, the new technologies/tools enable firms to provide solutions to clients with technology as a key differentiator, and thus guard them against competition. Also, for Case C as they plan to grow internationally, a supportive organizational structure (KFC2) (where there are fewer levels of approval) in place would not only enable quicker decision-making, but also ensure that investment decisions in innovation are tempered with caution and pragmatism (through thorough evaluations).

Finally, some of the challenges that inhibit innovation in PSFs as discussed in Chapter 1 (Section 1.5.4) can be addressed through the key factors. For example, 'NKFA5–Reinventing the business' creates an internal environment where consultants are prompted to come up with innovative ways of responding and building internal capabilities to address unique client requests. This builds the capacity to address similar requests from other clients (building the capacity to innovate is a challenge for PSFs that NKFA5 can address). Another example is 'NKFA6–Empowerment'. Empowerment creates an environment where consultants are provided a free hand to think innovatively and out of the box in order to come up with innovative solutions to clients (a challenge

for PSFs that NKFA6 can address). Thus, some of the factors identified in this case study address the challenges that can inhibit innovation in PSFs.

7.6 CHAPTER SUMMARY

This chapter provided answers to RQ1 and RQ2 for Case C. First, the four data sources used for the analyses were presented. Second, the constructs (factors of innovation culture) elicited during the rep grid interviews were analyzed and presented, and of the 29 factors of innovation culture (#30 was 'Miscellaneous' and excluded), ten key factors of innovation culture were identified for Case C. These were supported through evidence from documents and observations. This provided the response to RQ1. Third, FG data were analyzed and results and findings presented, identifying 29 reasons (specific to Case C) as to why the ten key factors are important for managers in Case C. This provided the response to RQ2.

Finally, the chapter concluded with five key areas that organizations similar to Case C can consider from a culture perspective: (1) people practices within the organization, (2) organizational leadership (and more specifically at supervisory level), (3) external areas of focus, and (4) organizational support mechanisms and (5) how some challenges in PSFs that are inherently not supportive of innovation can be addressed through the key factors. The overall implications of the findings of this chapter will be discussed in conjunction with Cases A and B as part of the cross-case analysis (Chapter 8) and findings and conclusions (Chapter 9).

8.0 CROSS-CASE ANALYSIS & FINDINGS

8.1 INTRODUCTION

This chapter provides details of the cross-case analysis across the three cases, A, B and C, conducted in three firms in the Professional Services Firms (PSF) sector. The focus of the analysis is based on answering RQ1 and RQ2 considering the findings from all three case studies. This chapter, therefore, focuses on patterns across cases, presents an overview of the results, summarizes the findings and provides a discussion.

Specifically, this chapter covers the following:

- Background information, data sources used for cross-case analysis (Section 8.2);
- Overview of results (Section 8.3);
- The key factors of innovation culture from cross-cases analysis (Section 8.4), a discussion on other relevant factors of innovation culture (Section 8.5); and
- The chapter summary (Section 8.6).

8.2 BACKGROUND INFORMATION, DATA SOURCES AND ANALYSIS

This research study was undertaken at three companies: IT Consulting Co. (Case A), Management Consulting Co. (Case B) and Engineering Consulting Co. (Case C). All three companies operate in the professional services sector. Cases A and B are large organizations with over 2,000 employees and several consulting LoBs (Lines of Business) operating across various industry domains, such as banking and insurance, manufacturing, utilities, consumer goods, and media and entertainment. In contrast, Case C is a smaller specialist consulting firm operating in mining, environmental engineering, and water and gas utilities, with niche consulting skills. These firms have been selected as they are part of the PSF sector and have a significant focus on innovation (as discussed in Chapter 4, Section 4.3.5). This was evident from their vision and mission statements,

from the various other statements made on their websites, and the innovation initiatives they have been undertaking. All three case companies operate in a very hostile environment[72]: Case A's and Case B's clients demand innovative solutions as the market is fragmented and more competition fuels such demands, but Case C's clients demand more tried and tested, standard quality and affordable solutions, although Case C uses innovation in parts of their processes and technology.

A total of 22 visits were made to the three companies at different locations (some of the interviewees were based at client locations across London, and offices in London, Birmingham and Stoke-on-Trent) for data collection. Thirty-six interviews were conducted (40hrs/505pp. of transcript), and three focus groups, involving 12 people, were convened (6hrs/73pp. of transcript). In addition, documents and artefacts were gathered from the public domain (approximately 841 pages of documents) and from the companies (some of the interviewees provided relevant documents – 339 pages). Observations were also made and captured as field notes during the visits for all three case studies. In this chapter, the final results from all three case studies (for both RQ1 and RQ2) have been used to undertake a cross-case analysis. As discussed in Chapter 4 (Section 4.3.4), the purpose of the multiple case study approach was to understand the 'quintain', i.e., the phenomenon of interest, which is innovation culture, beyond the individual cases (Stake, 2006) in the context of PSFs (discussed in Chapter 1, Section 1.5.4). Following Ayres et al. (2003), although losing some contextual detail of individual cases, the focus here was to identify key factors across cases. According to Tesch (1990), a cross-case comparison is essentially a 'decontextualization and recontextualization' of cases. The evidence from the three individual cases (i.e., for responses to both RQs 1 and 2) was reviewed and the significant statements from findings across the three individual cases and the differences between them were noted (decontextualization). Further, moving between findings from individual cases, using the differences noted across cases facilitated through the process of intuiting[73] and comparing empirical findings with the literature (recontextualization),

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[72] *All three businesses have international presence, but the study was undertaken in their UK organizations. While Cases A and B have grown between c. 4 and 8% in the last five years, Case C has not had any growth for the last three years. For Cases A and B their consulting business has been growing, but for Case C the industry is still recovering from the recession – per current growth rates (of 4-6%) in 2016 in the engineering consultancy industry, UK (www.ibisworld.co.uk).*

[73] *A critical reflection on/identification of insights as found from individual and across cases) (Ayres et al., 2003)*

the cross-case analysis findings were recast in new light with respect to the phenomenon of innovation culture and its significance for PSFs. The basic principle here is the importance of comparison across cases but referring to individual cases as necessary (Khan & VanWynsberghe, 2008). Ayres et al. (2003: p. 875) refer to this as *"moving between across- and within-case comparisons."* Therefore, the aim has been to undertake a cross-case analysis without stripping out too much of the contextual meaning from individual cases, but rather to actually provide contextual details where necessary and possible. The results of the cross-case analysis are presented next.

8.3 OVERVIEW OF RESULTS

A total of 27 factors of innovation culture were identified as important across the three case studies. Please refer to Table 8.1.

Table 8.1: 27 Key factors of innovation culture across three cases

No.	Final Code	Key Factor of Innovation Culture	Case A	Case B	Case C	Literature
1	KF1	Rewarding innovation	√	(√)	√	Yes
2	KF2	Explore externally for innovation opportunities	√	√	(√)	Yes
3	KF3	Diversity	√	√	(√)	Yes
4	KF4	Leadership commitment to innovation	(√)	√	√	Yes
5	KF5	Empowerment	(√)	√	√	Yes
6	KF6	Reinventing the business	(√)	√	√	No
7	KF7	Dedicated time for innovation	√	(√)	(√)	Yes
8	KF8	Physical environment	√	(√)	(√)	Yes
9	KF9	Innovation execution capability	√	(√)	(√)	No
10	KF10	Enabling people to build knowledge to innovate	(√)	√	(√)	Yes
11	KF11	Actively tracking market trends and aligning	(√)	(√)	√	Yes
12	KF12	Supporting technology for innovation	√	(√)	√	Yes
13	ORF1	Client at the centre of innovation	√	(√)		Yes
14	ORF2	Driven to innovate due to external factors	√	(√)		No
15	ORF3	Strong growth focus	(√)	√		No
16	ORF4	Risk-taking		√	(√)	Yes
17	ORF5	External communication to the market	(√)		√	No
18	ORF6	Focus on identifying value of innovations	√	√		Yes
19	ORF7	Dedicated innovation office	√			No
20	ORF8	Internal communication	√			No
21	ORF9	Innovation is company's ethos	√			No
22	ORF10	Balanced teams		√		Yes
23	ORF11	Coaching and mentoring		√		No
24	ORF12	Access to top management		√		No
25	ORF13	Flexible to change			√	No
26	ORF14	Supportive organization structure			√	Yes
27	ORF15	Effective internal relationships			√	No

Legend: √ – Case where the factor was identified as a key factor; (√) – Cases where the factor was mentioned, but not identified as a key factor. Please note that the shaded ones are mentioned across all three cases while they emerged as important in one or two cases. KF – Key Factor; ORF – Other Relevant Factor

From Table 8.1 it can be noted that there are factors that emerged as key factors across one case (e.g. KF8–Physical environment in Case A) or two cases (e.g. KF1–Rewarding innovation in Cases A and C) and have also been mentioned as relevant (but have not emerged as key) by participants in other cases. Altogether, there are 12 such factors across all three cases. These are designated by the codes KF1 to KF12 (i.e., KF meaning 'Key Factor'). These 12 key factors were mentioned by interviewees across all three cases, so the collective wisdom of interviewees across cases is being taken as a surrogate for the importance of these key factors in terms of their relevance to the quintain of innovation culture. These are discussed in Section 8.4. The remaining 15 factors, although they emerged as key factors in one or two individual cases (within case), they were not mentioned across the other cases (e.g. ORF10–Balanced teams was a key factor in Case B and not in Cases A and C). However, they provide some insights into both cases' specific needs and also some unique industry conditions/challenges the cases face. These are designated by the codes ORF1 to ORF15 (i.e., ORF meaning Other Relevant Factor). These are briefly discussed in Section 8.5. All of the 27 factors (both key and other relevant factors) have been mapped against the key factors from the literature on a Venn-diagram in Figure 8.1. The diagram also shows the factors that did not emerge as important, designated by NKF1 to NKF7 (Non-Key Factors), and those that were not mentioned by any of the participants (e.g. KFL22–Stories and myths). These are discussed in Appendix 8-1; it is argued that the participants have not highlighted the NKFs (1-7) as important because they are less relevant to PSFs. The discussion presented next is of findings across cases.

8.4 THE KEY FACTORS (KFs) OF INNOVATION CULTURE

This section combines both RQ1 (a description of the 12 key factors) and RQ2 (reasons for their importance) and discusses how each factor relates to the literature (discussed in Chapters 1 and 3), and whether it confirms, clarifies or adds as a unique contribution to knowledge/literature. Additionally, it also briefly discusses how the key factors address the challenges that inhibit innovation in PSFs[74].

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[74] *Chapter 1 (Section 1.5.4) discussed 6 challenges: (a) Balance between billing and innovation; (b) Internal growth path for consultants; (c) Innovative solutions for clients; (d) Build capacity to innovate; (e) Identifying new areas of opportunity and innovation investment; and (f) Improving internal interactions and behaviours*

Extant Literature

Current Research
Non-Key Factors (Section 8.6)

Other Relevant Factors
(Mentioned in <=2 cases – Section 8.5)

Key Factors
(Mentioned across 3 cases
– Section 8.4)

KFL22–Stories and Myths

NKF1–Organization promoting entrepreneurship
KFL19–Safe spaces

NKF3–Cross-functional exposure
KFL9–Job rotation

ORF1–Client at the centre of innovation
KFL1–Client Focus

ORF7–Dedicated Innovation Office

KFL8–Innovation Vision Mission and Strategy

NKF2–Focus on generating innovation based revenues
KFL3–Company's focus on innovation portfolio

ORF10–Balanced teams
KFL25–Team composition

KF1–Rewarding innovation
KFL17–Rewards and Recognition

KF2–Explore external partnerships
KFL12–Networking and boundary spanning

ORF2–Driven to innovate due to external factors

KF3–Diversity
KFL4–Diversity

ORF3–Strong growth focus

NKF4–Teams and community
KFL2–Collaboration

ORF6–Focus on identifying value of innovation
KFL7–Innovation process

KF4–Leadership focused on innovation
KFL10–Leadership support and commitment

KFL13–Open communication

NKF5–Innovation targets in appraisals
KFL24–Task orientation

KF5–Empowerment
KFL5–Empowerment & Autonomy

KF7–Dedicated time for innovation
KFL21–Slack resources

KF6–Reinventing the business

ORF8–Internal communication

All new factors identified as part of the current study were mentioned in individual cases (Chapters 5, 6 and 7) are beyond the scope of this chapter

ORF9–Innovation is company's ethos

ORF11–Coaching and encouraging

ORF14–Supportive org structure
KFL6–Flexible organization Structure

KF8–Physical environment
KFL15–Physical Symbols

KF9–Innovation execution capability

NKF6–Safe environment
KFL14–Participative Safety

KFL27–Work group support

KF10–Enabling people to build knowledge to innovate
KFL11–Learning and Development

ORF5–External communication to market

NKF7–Best Talent
KFL23–Talent and Creativity

ORF4–Risk-taking
KFL18–Risk-taking and experimentation

KF12–Supporting technology for innovation
KFL26–Technology tools to support innovation

ORF15–Effective internal relationships

KF11–Actively tracking market and aligning
KFL20–Scanning and tracking market

ORF12–Access to top management

KFL16–Quick decision making

ORF13–Flexible to change

Note: KFL – Key Factors from Literature are summarised in Appendix 3-3

Figure 8.1: Comparison between Key Factors from the literature and this research study (Cases A, B and C)

8.4.1   KF1–Rewarding innovation

The relevant literature

The literature review discussed the following three key points:

(1) Rewards for innovation are important – employees expect them, and rewards motivate people to be more innovative (e.g. Judge et al., 1997)

(2) Non-monetary rewards are perceived as more important than monetary rewards (e.g. Tushman & O'Reilly, 1997; Dombrowski et al., 2007; Patterson et al., 2009)

(3) There is a view that there needs to be a balance (Martins & Terblanche, 2003) between the two types of reward but there is no empirical evidence for this

Key findings and the contribution of this research study

Compared to the literature, this study of innovation culture in PSFs:

- Confirms that rewards for innovation are definitely a motivating factor (pt. 1 above)

- Clarifies that both monetary and non-monetary rewards are important for innovation culture (pts. 2 & 3 above)

- Adds an important aspect of monetary rewards i.e., rewards proportionate to gains

- Adds an important aspect of non-monetary rewards i.e., an opportunity to work with senior management

Each of these points is explained below with examples (see Table 8.2 for evidence related to KF1 from the cases). Highlighting the importance of rewards, one interviewee said, *"If people are rewarded, they are inspired* [motivated] *to do more"* (Senior Ground Engineer, Case C). Thus, KF1 motivates consultants to spend additional hours over and above their billable time with clients (a challenge identified in Chapter 1, Section 1.5.4). Also, clarifying that both forms of reward are important, one interviewee said, *"You are given a bonus* [monetary]*, taken out for dinner for achievements* [non-monetary]*…if you want to be innovative"* (Senior Ground Engineer, Case C).

The study adds an important aspect of monetary rewards and thus provides more clarity to the construct of innovation culture. Cases A and C suggest that monetary rewards need to be a certain proportion of the value of innovation generated (not merely some arbitrary, insignificant monetary value as a reward, as explained in the literature).

One participant said, *"If the payoff …is £10,000* [referring to a direct proportion of the value of innovation], *I will prioritise* [my work]*"* (Senior Consulting Director, Case A)

Table 8.2: Evidence on KF1 from the Case Studies

Type of Reward	Case A	Case B	Case C
Monetary Rewards (MR)	Rep grid: Financial reward value is linked to the value of innovation generated Focus Group: MRs serve as a guiding framework to prioritise work Documents: Rewards offered are linked to the value of innovation generated	Rep grid: Financial rewards are important for innovation	Rep Grid: Financial rewards are commensurate with innovation generated Focus group: Year end bonuses are a form of rewarding innovation Documents: Rewards are based on financial results and growing the business
Non-monetary rewards (NMR)	Observations: Awarding people for their innovation is a form of non-monetary reward (pictures of people receiving innovation awards displayed on walls)	Rep grid: Appreciation (celebrate someone achieving a successful project), faster career progression are forms of non-monetary reward Documents: Learning and career progression are forms of reward	Rep Grid: Job title, status or recognition of good ideas Focus Group: Working with seniors is a form of non-monetary reward as it contributes to career growth of consultants

This study also adds an important aspect of non-monetary rewards and provides clarity to the construct of innovation culture. Non-monetary rewards can take the form of learning and career progression. One participant, said, *"A lot of people look at this* [working with directors] *as rewards… also another opportunity you get with management* [to learn]*"* (Associate Director, Case C). Thus, KF1 creates a path for internal growth (career advancement) of consultants (a challenge for PSFs as discussed in Chapter 1, Section 1.5.4).

> Based on the three cases, 'KF1–Rewarding innovation' can be defined as:
> *Rewards for innovation need to be both monetary and non-monetary; monetary rewards should be commensurate with the value of innovation generated; and a key non-monetary reward allows consultants to gain experience through working closely with senior members of staff.*

8.4.2   KF2–Explore externally for innovation

The relevant literature

The literature review discussed the following three key points:

(1) A high level of information exchange with customers, other firms, universities can be sources of new ideas (Jamrog et al., 2006; McLaughlin et al. 2008)

(2) Formal partnerships/networking/acquisitions can be external sources used to build the ability to innovate (e.g. Kivimäki et al., 2000; Kenny & Reedy, 2006)

(3) There are no studies that have investigated ways in which partnering with external sources is exploited in PSFs

Key findings and the contribution of this research study

Compared to the literature, this study of innovation culture in PSFs:

- Confirms that, for PSFs, information exchange with partnership networks, can be a source of new ideas (pt. 1 above)

- Confirms partnerships/networking and capabilities built through acquisitions are important for innovation (pt. 2 above)

- Adds that through engaging with partners (pt. 3 above), PSFs are able:

o To broaden their market awareness levels to be able to identify new opportunities

o To identify gaps in current solutions to provide holistic solution offerings to clients

o To jointly bid for more consulting work

Each of these points is explained below with examples (see Table 8.3 for evidence related to KF2 for the cases). This study confirms that partnering/networking with clients, niche consultancies, etc. can be a source of new ideas. One FG participant said, *"We ourselves have a limited view of…the world* [of opportunities]*"* (Senior Consulting Manager, Case A). This study also confirms the importance of partnership/networking and acquiring firms for innovation. One FG participant said, *"I need that capability, it doesn't exist…at the moment, so we do need to partner with…*[other firms who have those capabilities]*"* (Consulting Director, Case B). Also, findings from documentary evidence (e.g. Annual Reports 2014/15) in Cases A and B suggest that both firms acquire other firms to build the necessary capabilities to innovate, which in turn builds the

necessary capacity to innovate (Smets et al., 2011) (a challenge for PSFs as discussed in Chapter 1, Section 1.5.4).

Table 8.3: Evidence on KF2 from the Case Studies

Type of Approach	Case A	Case B	Case C
Explore externally for innovation (merging with/acquiring other companies or fostering relationships with clients or 3rd parties)	Rep grid: KF2 serves as a means of obtaining ideas from outside	Rep grid: KF2 supports collaboration and provides full suite of solutions to clients through a network of partners (partner eco-system)	Rep Grid: KF2 enables organizations to seek out best ideas from outside
	Focus group: KF2 broadens the company's awareness of the market, takes innovation to the market quickly, and enables development of more holistic solution offerings	Focus group: KF2 complements and strengthens internal capabilities, takes innovation to the market quickly	
	Documents: Acquisitions are used to build specific capabilities to innovate	Documents: Acquisitions are used to build specific capabilities to innovate	

Further, this study identifies and adds to the literature that KF2 broadens market awareness levels in PSFs. One interviewee said, *"Whether it's from customers, consultants, or the industry,* [these contacts] *breed a whole second level of innovation that gets people thinking even more"* (Consulting Director, Case A). Increasing market awareness helps identify new business growth opportunities (Maister, 2003) (a key challenge for PFSs as discussed in Chapter 1, Section 1.5.4). This study also adds that KF2 enables the development of more holistic solutions addressing gaps in current service offerings. One FG participant said, *"We don't offer specific software and tools, but we can partner…to offer holistic solutions* [to clients]*"* (Consulting Director, Case A). Providing innovative solutions to clients is a key challenge for PSFs (see Chapter 1, Section 1.5.4). Finally, this study also adds that partnership can be an important means for PSFs to jointly bid[75] for more consulting work. One FG participant said*, "We have partnership arrangements with…technology providers…*[we] *go into bid with them"* (Consulting Director, Case B).

Based on findings from all three cases, KF2 can be defined as:
Engagement (e.g. partnering/networking or even acquisitions) with external organizations enables PSFs to broaden their market awareness levels, create new and innovative service offerings and also be able to jointly bid for consulting work.

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[75] *Clients sometimes encourage companies to jointly bid for work (Halinen & Jaakkola, 2012) to maximize engagement value (e.g. Kothandaraman & Wilson, 2001). This highlights the importance of joint bidding for work.*

8.4.3   KF3–Diversity

The relevant literature

The literature review highlighted the following three key points:

(1) There is limited empirical evidence (see SLR Appendix 1-1) for diversity as a factor of innovation culture (e.g. Jamrog et al., 2006; Patterson et al., 2009)

(2) There is conflicting evidence concerning the specific type of diversity relevant for innovation – Østergaard et al. (2010) reported a positive link between gender, education and innovation, a negative link between age and innovation, and no link between ethnicity and innovation. Mahnke et al.'s (2012) study (in PSFs) reported a link between education and innovation and no link between experience and innovation

(3) There is limited evidence (see Chapter 3, Section 3.3.4) of an understanding of ways in which diversity creates a culture of innovation

Key findings and the contribution of this research study

Compared to the literature this study demonstrates that it:

- Confirms that diversity is a key factor of innovation culture (pt. 1 above)
- Confirms that some forms of diversity[76] are more important for innovation (pt. 3)
- Adds by highlighting ways in which diversity creates a culture of innovation in that: (a) it enables deliberation of potential solution options, and (b) it creates disruption of thought that can produce new and innovative ideas (pt. 2)

Each of these points is explained below with examples (see Table 8.4 for evidence related to KF3 for the cases). The literature provides very little empirical evidence for diversity as a key factor, but this study in PSFs highlighted (42% of participants) the critical role of diversity for PSFs as *"entrepreneurial knowledge…embodied in its human resources"* when recombined across members of the staff produces service innovation and greater firm performance (Mahnke et al., 2012: p. 148). One interviewee said, *"People from diverse cultures, backgrounds, experience…you name it, you end up with…far more insight…into problems"* (Senior Manager, Case B).

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[76] *Investigation of the specific type of diversity is outside the scope of this research study. Therefore, only findings pertaining to evidence available to the researcher have been presented.*

Table 8.4: Evidence on KF3 from the Case Studies

Type/forms of Diversity	Case A	Case B	Case C
Diverse group of people (all types of diversity included – gender, age, ethnicity, religion, experience, education, geography)	Rep grid: All types/forms of diversity are relevant for innovation Focus group: KF3 enables deliberation of potential solution options leading to innovative solutions to clients Documents: A number of gender diversity programmes were noted, also gender and ethnic diversity were noted in their recruitment strategy	Rep grid: All types/forms of diversity are relevant for innovation Focus group: KF3 creates disruption of thought leading to new ideas that can create new market opportunities Documents: A number of women and ethnicity diversity related programmes are run within the organization including having diversity targets in talent and recruitment processes	Rep Grid: All types/forms of diversity are relevant for innovation

Next, in line with the literature, while this study broadly (rep grids) confirms the role of diversity in general, documentary evidence (e.g. Annual reports 2013, 2014/15) from Cases A and B confirms they have more visible diversity programmes specific to gender and ethnicity (and are therefore more important). This is an indicator highlighting that some forms of diversity can be more important than others. However, this research highlights the need to investigate more the specific types of diversity and how they impact on innovation. Finally, this study adds to the literature by providing insights into how diversity creates a culture of innovation in PSFs: (i) diversity produces a variety of creative thought when discussing potential solution options, leading to a good quality output to clients. One FG participant said, *"I think it* [diversity] *will provide more rich thought leadership, problem solving/bouncing different ideas…to get to a very nice solution* [for clients]*"* (Consulting Director, Case A); and (ii) diversity produces disruption of thought, through sharing/learning from each other when people are moved across consulting practice areas, leading to new ideas even to create new markets/businesses. One FG participant said, *"You deliberately disrupt yourself* [with new ideas]*"* and *"If you want to disrupt a market…you might want to bring a retail person in* [into the insurance practice]*…and say, how would you do this* [differently, with ideas from the retail practice]*?* (Senior Consulting Manager, Case B).

> Based on findings from all three cases, KF3 can be defined as:
> *Teams with people from diverse backgrounds (e.g. education, experience, ethnicity, gender, etc.) are to be encouraged to focus on deliberating solution options and sharing ideas to disrupt current thought processes through rotating team members across consulting practices to ultimately provide the best solution to clients.*

8.4.4   KF4–Leadership focused on innovation

The relevant literature

The literature review highlighted the following two points:

- At an organizational level, leadership provides access to the right resources to support innovation initiatives (including innovation investments) (e.g. Chandler et al., 2000; Jamrog et al., 2006)

- At a supervisory level (manager/coach), leadership is demonstrated through:

o Encouragement through appreciation of innovative ideas, continual feedback to motivate teams to be innovative (Malaviya & Wadhwa, 2005; Hartmann, 2006)

o Exchange of ideas/information with team members (Scott & Bruce, 1994) leading to better working relationship with teams (Malaviya & Wadhwa, 2005)

Key findings and the contribution of this research study

Compared to the literature, this study of innovation culture in PSFs:

- Confirms and adds one aspect to organizational level leadership: demonstrates commitment by legitimizing senior managers' time for innovation (pt. 1 above)

- Confirms and adds two aspects to the role of supervisory leadership (pt. 2 above):

o Create a structure that provides direction for consultants to manage their time spent on billing hours versus that on innovation

o Work closely with consultants to ensure their consulting work adds value to clients

Each of these points is explained below with examples (see Table 8.5 for evidence related to KF4 for the cases). This study confirms the key role of KF4 and adds that it is a means to demonstrate a company's commitment through legitimizing senior managers' time allocated to innovation and their active participation in making decisions on investment in innovation. One FG participant in Case C said, *"I think leadership is supportive of innovation…we have to prove the business case* [in discussions with senior managers] *if we have to invest a lot on innovation"* (Associate Director, Mining Technology). Allocating more of the senior resources to support junior members of the staff actually creates the necessary capacity to innovate (Smets et al., 2011) (a challenge for PSFs as discussed in Chapter 1, Section 1.5.4).

Table 8.5: Evidence on KF4 from the Case Studies

Level of Leadership	Case A	Case B	Case C
Leadership (Organizational/ Supervisory) focused on innovation	Rep grid: Leadership sees the future changes and trends and supports teams on the ground in terms of direction related to ideas for innovation	Rep grid: Leadership focuses on supporting teams to change and do things in different ways Focus group: KF4 provides the necessary structure for consultants to prioritize their time on innovation; KF4 also ensures teams provide value to clients Documents: Leadership invests in personal relationships by working closely with juniors, encouraging them to discuss diverse viewpoints, new ideas, practices and technologies, and to have a thirst for learning	Rep Grid: Leadership shows their visible support by allocating the right set of resources Focus group: Leadership enables consultants to prioritize their time on innovation and demonstrates support through allocating seniors' time to support on innovation initiatives Documents: Working closely with teams on client engagements and thus supporting their innovation initiatives

In PSFs, while Maister (2003: p. 207) suggests that *"Professionals…when left to their own devices, don't accomplish as much as they do when…supported by a good coach"* and so they need guidance on a daily basis. This study confirms that KF4 at a supervisory level is important and adds that KF4 provides the required structure (and autonomy within it) for consultants to prioritize their time for innovation. One FG participant in Case B said, *"The firm just cannot have its totality of their staff just doing random things…. it needs some of that structure* [which is provided by supervisory leadership]*"* (Senior Consulting Manager, Government and Health Services). Thus, leadership sets priorities enabling consultants to strike a balance between time allocated to consulting work and innovation (a challenge for PSFs as discussed in Chapter 1, Section 1.5.4). Further, supervisors work closely with consultants evaluating their work to ensure it adds value to clients. One FG participant in Case B said, *"It is about taking an idea* [with the support of supervisors] *in a way that it is delivering value* [innovative solutions]*…for our clients"* (Consulting Manager, Government and Health Services,). The support through working closely enables PSFs to generate innovative solutions for clients (a challenge for PSFs as discussed in Chapter 1, Section 1.5.4).

> Based on findings from all three cases, KF4 can be defined as:
> *Organizational leadership demonstrates commitment by legitimizing senior managers' time for innovation and supervisory leadership provides guidance to teams on the ground by helping consultants to prioritise their time on innovation and enabling them to deliver value to clients.*

8.4.5   KF5–Empowerment

The relevant literature

The literature review highlighted two key points:

- Individuals are more innovative when they perceive themselves as having the empowerment to perform and achieve their day-to-day tasks (e.g. Amabile et al., 1996; Tushman & O'Reilly, 1997; Dombrowksi et al., 2007; Tellis et al., 2009)

- In PSFs, empowerment poses a challenge of dissemination of innovations; it creates a culture of *"the sovereignty of the individual expert"* (Reihlen &Werr, 2012: p. 8)

Key findings and the contribution of this research study

Compared to the literature, this study of innovation culture in PSFs:

- Confirms that empowerment supports innovation (pt. 1 above)

- Clarifies that empowerment, instead of creating a culture of sovereignty of the individual expert, actually enables consultants and supervisors/managers to build good relationships (pt. 2 above)

- Adds that empowerment enables individuals to focus on innovation in two ways:

o To balance their investment of time between billing hours and innovation, and

o To think outside the box to deliver innovative solutions to clients

Each of these points is explained below with examples (see Table 8.6 for evidence related to KF5 for the cases). This study confirms the role of KF5 as a key factor – repertory grids across all three cases indicated that empowerment enables consultants to adopt new ways of working. Also, highlighting how empowerment can create a positive and different way of working, one FG participant said, *"If you have a leader who says 'that's the outcome I am after… off you go', then it creates a very different way of working"* (Consulting Manager, Case B). Also, while literature highlights that empowerment creates a culture of sovereignty of the individual expert, leading to a challenge of dissemination of innovations, this study clarifies that empowerment, instead, actually enables consultants and senior managers to build a good working relationship. One FG participant said, *"I particularly gravitate towards one particular senior manager who says, 'this is what we need to work to' and to me that is the only kind of parameter* [to support innovation]*"* (Consulting Manager, Case B). A good relationship between

management and consultants can help them with the challenge of channelling control and organizational exploitation of entrepreneurial opportunities (e.g. Sundbo, 1997), which in turn leads to building the needed capacity to innovate (Smets et al., 2011) (a challenge for PSFs as discussed in Chapter 1, Section 1.5.4).

Table 8.6: Evidence on KF5 from the Case Studies

Key Factor	Case A	Case B	Case C
Empowerment – with no interference from the management	Rep grid: Empowered individuals are able to do things (e.g. make decisions) and have flexibility to think for themselves	Rep grid: Empowered individuals are able to do things (e.g. change the environment and ways of working) Focus group: KF5 enables consultants (a) to produce a good quality and innovative outcomes from people and (b) to build an innovation-supporting relationship between management and consultants Documents: Empowered people take personal responsibility to do the right thing (e.g. using their talents) concerning their focus on innovation	Rep Grid: Empowered individuals can change ways of working (e.g. have a free hand to solve problems, and be able to suggest/discuss ideas) Focus group: Empowerment enables consultants to think outside the box, be able to manage their work load flexibly, and be able to establish a relationships of trust between management and consultants

Further, this study adds to the literature in that KF5 enables consultants to manage their work load better and also be able to think innovatively. Concerning the former, one FG participant said, *"We all to a certain extent have the ability to control the work we do…we are all empowered"* (Associate Director, Mining Technology). This is critical for PSFs, given the need to balance billing hours and time taken out to build knowledge and work on innovations (a challenge identified in Chapter 1, Section 1.5.4). Concerning the latter, this study highlighted that KF5 enables consultants to think outside the box. Talking about empowerment producing innovative solutions to clients, one FG participant in Case B said, *"When we give people the space, you might be in a situation where 'Oh I wasn't expecting that', 'that is fantastic'* [referring to innovative ideas]*"* (Senior Consulting Manager, Case B). Delivering innovative solutions to clients was identified as a challenge for PSFs (see Chapter 1, Section 1.5.4).

Based on findings from all three cases, KF5 can be defined as:
The space and autonomy available in the work environment without interference (from management or supervisors) enables consultants to build good working relationships with management/supervisors, manage their work load better (to enable more time to focus on innovation), and produce good quality outputs for clients.

8.4.6   KF6–Reinventing the business

The relevant literature

The literature review highlighted one key point:

▪ The factor KF6 (changing, renewing, refreshing or reinventing the focus areas of the businesses in the marketplace) has not been discussed in the literature on innovation culture. KF6 is only discussed in the strategic management literature (e.g. Lindgardt et al., 2009) as business model innovation (i.e., innovation in the areas of target customer segments, product/service offerings, value chain operations, etc.)

Key findings and the contribution of this research study

Compared to the literature, this study of innovation culture in PSFs:

▪ Adds KF6 to the list of key factors of innovation culture, more specifically in relation to PSFs in terms of how such an orientation to renew their business creates a culture of innovation

See Table 8.7 for evidence related to KF6 for the cases. Rep grids highlighted the importance of changing, renewing/refreshing or reinventing PSFs' businesses; this is significant because such an external orientation of changing business focus areas challenges teams internally to change/adapt to meet new market challenges.

Table 8.7: Evidence on KF6 from the Case Studies

Key Factor	Case A	Case B	Case C
Reinventing the business	Rep grid: An organization can refresh its business by identifying new niches to position itself and continually change and evolve to stay relevant in the marketplace	Rep grid: An organization can refresh its business in terms of what it does and also how it continually adds value in the existing marketplace Focus group: Businesses need to reinvent themselves in order to stay current and relevant as a business Documents: To renew their service offerings, Case B focuses on new digital technology consulting, and incubates small new businesses, acquires or takes a stake in businesses to build necessary capabilities required	Rep Grid: An organization can refresh itself through changing areas of business focus, including moving into new geographical regions with new offerings Focus group: KF6 enables Case C to build capabilities to respond to markets/business needs and to expand into global markets Documents: Diversifying and expanding in global markets are means of renewing the business services offered in the marketplace. To renew their service offerings, Case C is redeploying their internal capabilities across business disciplines, and working closely with universities abroad to work in international markets

This study adds to the literature by identifying three ways in which KF6 can be relevant to the culture of innovation. First, the desire to focus on KF6 keeps the organization relevant as a business. Case B envisages a future where core technology firms may be able to provide management consulting services alongside technology solutions. So, homing in on the point that they need to continually refresh themselves in order to survive, one participant said, *"So, yes, it* [KF6] *is massively relevant to us in terms of how current are we, how immediate are we today/tomorrow…so being able to reinvent your business for a… firm like us is incredibly important"* (Consulting Manager, Case B). Case B's recent focus on digital technology and initiatives to incubate new technologies can be seen as a means of identifying opportunities to refresh their existing service offerings. Thus, KF6 enables Case B to identify new areas of business opportunity (a challenge discussed in Chapter 1, Section 1.5.4) and stay relevant in the marketplace. Second, the desire to reinvent themselves has prompted Case C to expand into new (global/international) markets and rise to the challenge of changing ways of working internally. One FG participant said, *"We changed the model with Moscow* [referring to how they were keen on conducting business internationally]*…so we started actually employing, Kazak engineers, Moscow engineers... it has changed the dynamics* [Case C changed themselves internally to deliver solutions internationally]*"* (Technical Director, Case C). Third, the drive to reinvent themselves (KF6), prompted Case C to accept consulting work in areas on which they have never consulted. One FG participant said, *"We did a job* [referring to a client requirement they did not have any capabilities to deliver] *at 'chemicals' and in actual fact the client really liked the report"* (Associate Director, Case C). Thus, KF6 creates an environment where consultants are prompted to come up with innovative ways of providing new services to existing markets and/or new (e.g. international) markets. The capabilities built to address these new market needs can in turn enable organizations to build the capacity to innovate (Smets et al., 2011) (a challenge for PSFs identified in Chapter 1, Section 1.5.4).

Based on findings from all three cases, KF6 can be defined as:
The PSFs' desire to continually refresh themselves in terms of areas of focus in the marketplace enables them to stay relevant as a business and change internal ways of working to rise to new challenges both locally and internationally.

8.4.7   KF7–Dedicated time for innovation

The relevant literature

The literature review highlighted the following two key points:

▪ Projects with adequate people resources had an increase in the levels of idea generation (Amabile et al., 1996; Hartmann, 2006) and innovation performance (e.g. Gudmundson et al., 2003; Hartmann, 2006). On the other hand, the lack of adequate people resources created more work pressure and was identified as the biggest barrier to innovation (Amabile et al., 1996; Rasulzada & Dackert, 2009)

▪ There is a positive link between perceptions of the management support to innovate and innovative behaviours (Ruiz-Moreno et al., 2008; Rasulzada & Dackert, 2009)

Key findings and the contribution of this research study

Compared to the literature, this study of innovation culture in PSFs:

▪ Confirms the importance of availability of resources for innovation (pt. 1 above)

▪ Confirms the importance of management being seen as supportive of innovation; and adds that KF7 motivates consultants to innovate (pt. 2 above)

▪ Adds to the literature highlighting that allocation of dedicated time for innovation provides an opportunity for consultants to innovate by reflecting on client problems

Each of these points is explained below with examples (see Table 8.8 for evidence related to KF7 for the cases). This study confirms the importance of dedicated time for innovation. Highlighting the difficulty to innovate within their current work structure, one interviewee said, *"We work in an organization working 8 to 10 hours a day....we normally work extended hours....I don't have the bandwidth"* (Senior Consulting Director, Case A). Also, while this study confirms that dedicated time offered to consultants creates a perception of management support, it adds that such a support in turn motivates them to focus on innovation. One FG participant said, *"*[If the management said] *here's three months, and here's some resources, go and drive that* [with specific targets to achieve]*; I think people would gravitate towards that, instead of 'do this in your day job'"* (Senior Consulting Manager, Case A). Especially, in the context of PSFs, where revenue from billing is an organizational priority, allocation of dedicated time can be a perceived as a legitimate form of support pointing towards giving priority to innovation. Therefore, KF7

provides consultants with the confidence to prioritize time for innovation over billable hours (a challenge for PSFs as discussed in Chapter 1, Section 1.5.4).

Table 8.8: Evidence on KF7 from the Case Studies

Key Factor	Case A	Case B	Case C
Dedicated time for innovation	Rep grid: A consultant's focus is naturally on 'billing hours' and because of that they do not have sufficient bandwidth to work on innovation Focus group: KF7 is an indication of the company's support of innovation and it provides more time for people in client-facing roles to be able to effectively solve client problems, which is a form of innovation	Rep grid: Time needs to be given to consultants to think about innovation or a solution to a problem (before it is rolled out)	Rep Grid: Time needs to be available for consultants to develop themselves and have time to generate innovative ideas

Additionally, this study adds to the literature by highlighting that dedicated time is quintessential for solving client problems, which is a form of innovation[77] in PSFs (O'Mahoney, 2011). One FG participant said, *"Where is the ability for those…closest to the customer to have a moment to breathe…and create, or input to somebody, to create what's* [innovative solution] *needed for the customer"* (Consulting Director, Case A). Another FG participant said *"Enough time for someone to think about client's problem…*[is] *incredibly important to innovation"* (Consulting Manager, Case B) Focusing on allowing more time to reflect on client problems enables PSFs to provide innovative solutions to clients (a challenge for PSFs identified in Chapter 1, Section 1.5.4).

> Based on findings from all three cases, KF7 can be defined as:
> *Time allowed outside of billing commitments gives consultants (who work closely with clients) the confidence that management supports the focus on innovation and also enables them to reflect on client problems and be able to provide innovative solutions to clients.*

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[77] *Dedicated time spent on such areas as development of knowledge assets, thought leadership, service/solution offerings, etc. is quite critical for consultancies in order to innovate (O'Mahoney, 2011).*

8.4.8   KF8–Physical environment

The relevant literature

The literature review highlighted the following two key points:

▪ Physical environment (layout, design of work environment) and symbols (displays of documentation, pictures of rewards, etc.) are indicative of an innovation-supportive culture (Jassawalla & Sashittal, 2002; Higgins & McAllaster, 2002)

▪ Physical environment plays an active role in influencing behaviours through enabling face to face communication/interactions among project team members to solve client problems (Hadley et al., 2012). There is, however, very limited empirical evidence for this

Key findings and the contribution of this research study

Compared to the literature, this study of innovation culture in PSFs:

▪ Confirms that KF8 is a key factor of innovation culture

▪ Confirms that KF8 plays a more active role in influencing behaviours as it provides an opportunity to have more innovation-related discussions

Each of these points is explained below with examples (see Table 8.9 for evidence related to KF8 for the cases). In the context of PSFs, the physical space creates an environment of sharing and learning as it *"can influence the richness of information shared, the possibility of developing personal ties, and shared identities"* (Hadley et al., 2012: p. 69). Repertory grid interviews indicated that physical space enables discussions on innovation. The frequency of discussions is quite important for innovation (e.g. McLean, 2005), and KF8 can be a means of achieving that. One interviewee said, *"It* [physical space] *nurtures a certain kind of behaviour… for innovation to take place...you let people out of the normal"* (Consulting Director, Case A). Another interviewee said, *"Having a place that you can go to be creative and to take yourself out of the routine"* (Consulting Manager, Case B). From the observations carried out in Case A, consultants appeared to struggle to find space, so they used kitchen/canteen areas for meetings. From the observations carried out in Case C, it was evident they were making major infrastructure changes to create better facilities for consultants, and four interviewees mentioned KF8's importance. In contrast, although Case B had the best facilities available

in both their London and Birmingham offices (from observations), KF8, however, was still highlighted as important in the interviews. Therefore, it can be argued that despite a threshold effect operating, i.e., the more resources available the less perceived benefit there is on innovative behaviours (Scott & Bruce, 1994), managers in Case B still cited KF8's importance for innovation. Thus, this study provides more empirical evidence for the importance of KF8 as a key factor of innovation culture.

Table 8.9: Evidence on KF8 from the Case Studies

Key Factor	Case A	Case B	Case C
Physical environment	Rep grid: A physical space creates positive thinking and takes people away from their routine thus being conducive for innovation	Rep grid: A physical space needs to be available so consultants can take themselves out of their routine and be creative	Rep Grid: Discussed that a physical space conducive for innovation enables consultants to socialize, talk about innovation and avoid any silo mentality
	Focus group: Physical space provides consultants an opportunity (i.e., through a good physical location) to be able to talk and have meetings on innovation	Observations: Building facilities are excellent - clients have a preferential treatment, but even consultants have dedicated facilities for meetings/discussions and more importantly, face to face communications	Observations: Building is being fully refurbished. Rooms are spacious with conference facilities
	Observations: There are pod areas for employees to attend to calls, relax etc. But in general there was difficulty in finding even basic facilities such as rooms (kitchen/ cafeteria areas being used for meetings/discussions).		

This study also confirms the direct role of KF8 in influencing innovative behaviours. One participant said, *"We do need a place where we can talk.....a place to sit, talk and whiteboard things"* (Consulting Director, Case A) and another said, *"absolutely agree...we should have more of these* [friendly locations] *providing an opportunity to talk* [have discussions on innovation]*"* (Consulting Manager, Case A). The findings of this study indicate that KF8 has an influence on internal project level interactions and behaviours (identified as a challenge for PSFs discussed in Chapter 1, Section 1.5.4).

> Based on the findings from all three case studies, KF8 can be defined as:
> *The right physical space (e.g. building/office, desk layout) and facilities such as meeting rooms, conference facilities etc., provide consultants with opportunities for face to face discussions, thus creating an environment conducive for innovation.*

8.4.9   KF9–Innovation Execution Capability

The relevant literature

The literature review highlighted the following two key points:

▪ The SLR (Appendix 1-1) has not identified any publications on KF9 (having the ability to execute/implement innovations) and its relevance to innovation culture

▪ However, a specific PSF-related publication (Chapter 1) by Ciumara (2011) provides some insight into this, but no empirical evidence:

o The implementation capability would provide an opportunity to test solutions before making any solution recommendations (Ciumara, 2011)

o Having the ability to implement solutions recommended (KF9) provides confidence to clients as they can see the evidence of the required capabilities (Ciumara, 2011)

Key findings and the contribution of this research study

Compared to the literature, this study of innovation culture in PSFs:

▪ Adds that KF9 is a key factor of innovation culture (pt. 1 above)

▪ Adds by providing empirical evidence for the following (pt. 2 above):

o KF9 enables consulting companies to test innovative ideas before developing and marketing innovative solutions

o KF9 enables consulting companies to give confidence to clients of the company's ability to innovate

Each of these points is explained below with examples (see Table 8.10 for evidence related to KF9 for the cases). This study adds KF9 to the literature as a key factor of innovation culture. One interviewee said, *"Ideas would be there, but implementing them would be a barrier"* (Associate Director, Case C). Another said, *"We need to be showing that we are innovating and that is one of the differentiators of a Tier 1 company"* (Consulting Director, Case A). KF9 refers to the capability to implement ideas, including the ability to process an idea through various stages of taking an idea through to implementation. Additionally, this study adds that KF9 enables consulting companies to test solutions before marketing them. One FG participant said, *"Yes, we have great ideas, how do you embed* [develop, test and implement]*…how do you market…tell it out* [market innovation outcomes]*?"* (Consulting Director, Case A). So,

Case A sets up labs to incubate ideas and also develop more capabilities based on client-learnt experiences. Such capabilities in turn enable Case A to build the capacity to innovate (a challenge for PSFs as discussed in Chapter 1, Section 1.5.4).

Table 8.10: Evidence on KF9 from the Case Studies

Key Factor	Case A	Case B	Case C
Innovation Execution Capability	Rep grid: An organization needs execution capabilities to convert an innovative idea into innovation (i.e., an idea needs to be implemented) Documents: Innovative ideas can be incubated and implemented in labs; organizations can make investments in concept labs where experiences with clients are captured and developed into competencies Focus group: With KF9, organizations can respond to any innovation requests from clients, and also be able to give confidence to clients of the company's ability to innovate	Rep grid: An organization needs to provide the necessary resource support, investment etc. to take an idea through the various stages of evaluation to implementation	Rep Grid: An organization needs to remove innovation implementation barriers and build the necessary capabilities to drive implementation of new ideas

Also, this study adds that KF9 enables consulting companies to provide confidence to clients of the company's ability to innovate. One FG participant said, *"The difficulty is, how many times clients say great, where you have done that before? So for us it* [KF9] *is really relevant in that we have to show traction, that we have done it...so when the requests* [from clients] *for innovation do come in, we are already prepared"* (Consulting Director, Case A) This research indicated the need for PSFs to have idea implementation capabilities, not just recommendations from consultancies: *"It's about walking...with the customer in their implementation journey...to achieve tangible business outcomes"* (Srinivasan, 2014: p. 259). Such implementation capabilities actually lead to building the required capacity to innovate (Ciumara, 2011). These demands from the clients, of implementing solutions, create an environment of urgency to demonstrate the necessary capabilities to actually innovate.

> Based on findings from all three cases, KF9 can be defined as:
> *Having the necessary knowledge, resources, innovation processes and facilities to test ideas and demonstrate to clients the company's ability to implement innovations.*

8.4.10 KF10–Enabling people to build knowledge to innovate

The relevant literature

The literature review highlighted the following two key points:

▪ Learning happens through sharing knowledge (Eckermann et al., 2003; Gudmundson et al., 2003), experience, and exploration (Dobni, 2008; McLaughlin et al., 2008). Also, in PSFs, individuals learn from *"knowledge and know-how* [obtained] *from their seniors"* (Smets et al., 2011: p. 5), through communities of practice (Anand et al., 2007), from experiences that occur *"when working together with…experienced consultants"* (Werr & Stjernberg, 2003: p. 894), etc. These informal channels contribute to 80% of learning (Berg & Chyung, 2008)

▪ Learning also happens through formal training (Caccia-Bava et al., 2006; Zdunczyk & Blenkinsopp, 2007; Dobni, 2008). More specifically, in PSFs, formal training programmes contribute to the remaining 20% of learning (Watkins & Marsick, 1992; Cross, 2007; Berg & Chyung, 2008). However, there is very limited empirical evidence for this

Key findings and the contribution of this research study

Compared to the literature, this study on innovation culture in PSFs:

▪ Confirms the importance of learning through formal training (pts. 1 & 2 above)

▪ Adds to the PSF literature by highlighting ways in which formal training is relevant:

o Consultants' natural inclination to learn can be exploited by training them in areas relevant to achieve organizational goals

o Formal training creates an environment of healthy competition as more consultants learn and build new capabilities

Each of these points is explained below with examples (see Table 8.11 for evidence related to KF10 for the cases). This study confirms the importance of formal learning in PSFs. It is not surprising that informal learning has not emerged as important because it happens (a) as part of the consulting work consultants undertake even as they work closely with senior members of the staff (Werr & Stjernberg, 2003) and (b) through other avenues such as communities of practice (Anand et al., 2007).

Table 8.11: Evidence on KF10 from the Case Studies

Key Factor	Case A	Case B	Case C
Enabling people to build knowledge to innovate	Rep grid: Encouraging personal development through formal training enables consultants to think in different ways	Rep grid: Encouraging personal development through formal training opens up consultants' minds to various new ideas and knowledge areas to start thinking about innovation Focus group: KF10 enables consultancies to harness the capability of consultants who are already curious and keen on learning and to support them to develop themselves by creating a very competitive internal environment	Rep grid: Formal training in relevant areas enables consultants to learn new skills and deploy them within the organization

This study adds to the literature by identifying ways in which learning from formal training is relevant to PSFs: (i) KF10 enables consultancies to harness the combined capability of consultants who learn from formal training because they are already curious and keen on learning. One FG participant said, *"One of our core competencies is being curious* [to learn new things]*…we always have people scanning around…so we can try different types of things* (Senior Consulting Manager, Case B)*"* and another added that *"it is about harnessing it* [people's combined capability and the learning from formal training] *effectively"* (Consulting Director, Case B). In PSFs, the combined skills of team members can be used for learning within the teams (Werr & Stjernberg, 2003) and that can in turn contributes to building the capacity to innovate (Smets et al., 2011) (a challenge for PSFs, see discussion in Chapter 1, Section 1.5.4); and (ii) also, KF10 creates a competitive environment for individuals to learn and grow. One FG participant said, *"The calibre of people that we bring in, itself is in the DNA of people, they are not going to be successful here if they can't sort of do this* [stay abreast through formal learning/training]*"* (Consulting Director, Case B). Thus, with high calibre people learning formally and building skills, an internally competitive environment is created. This in turn creates an environment for consultants to compete and stay on an internal growth path (a challenge for PSFs that was discussed in Chapter 1, Section 1.5.4).

Based on findings from all three cases, KF10 can be defined as:
The formal learning through training enables organizations to exploit such acquired knowledge to achieve organizational goals, and also creates a healthy competitive learning environment, which in turn enables consultants to grow as professionals.

8.4.11 KF11–Actively tracking market trends and aligning

The relevant literature

The literature review highlighted the following three key points:

- Market information translated into intelligence can enable organizations to respond to any new market changes (Kohli & Jaworski, 1990; Day, 1994; Hoffman, 1999)
- Specifically in PSFs, tracking markets[78]/'market sensing' ultimately leads to producing a new concept/new consulting service offering (Heusinkveld et al., 2009)
- There is limited understanding of how KF11 is a factor of innovation culture

Key findings and the contribution of this research study

Compared to the literature, this study of innovation culture in PSFs:

- Confirms that KF11 enables PSFs to anticipate and respond to changes that can threaten their survival
- Confirms that KF11 enables identification of future opportunities; and adds that, in PSFs, clients are a key source of information on such market trends
- Adds that KF11 creates a culture of innovation by being a trigger for internal conversations on innovation

Each of these points is explained below with examples (see Table 8.12 for evidence related to KF11 for all the cases).

Table 8.12: Evidence on KF11 from the Case Studies

Key Factor	Case A	Case B	Case C
Actively tracking market trends and aligning	Rep grid: To be successful, an organization needs to align to changing market/technology trends	Rep grid: By identifying gaps in the marketplace and new ways of delivering services, an organization can move with the changing markets	Rep Grid: An organization is able to respond to the market by knowing the market and adapting to the market needs Focus group: KF11 creates a sense of urgency to innovate as market changes can threaten survival, informs future opportunities of growth, and creates an environment of innovation by triggering conversations around future investments to make in innovation Observations: Details of commodity prices and how the markets are moving available on the displays in the company enable consultants to be on top of movements in the market

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[78] *Tracking markets refers to the "acquisition of information by managers on external trends and events in the firm environment" (Hoffman, 1999: p. 42)*

This study confirms that KF11 enables PSFs to anticipate market changes to be best placed to respond to those changes as a means of mitigating the risk of survival. One FG participant said, *"You know on an ongoing basis to use* [time set aside to understand trends] *for business development, reflecting on market trends and sort of anticipate potential changes that can come and bite you* [creating a sense of urgency to innovate]*"* (Associate Director, Case C). This research thus provides evidence that KF11 creates a sense of urgency to innovate. Also, tracking market trends in PSFs has long been established as a means of developing new business (Benders et al., 1998; Kipping, 1999), and this study confirms that: as one FG participant said, *"*[KF11 enables them to] *expand our knowledge and develop into areas we have not been in before"* (Technical Director, Case C). Further, this research adds that new areas of opportunity can be identified *"by keeping up with…the clients"* (Technical Director, Coal Exploration), as clients can be a key source of innovative ideas (Nikolova, 2012). So, consultants (working closely with clients) can actively track markets and identify new opportunities (a challenge for PSFs identified in Chapter 1, Section 1.5.4).

While the literature identifies that KF11 leads to increased levels of innovation (Hegarty & Hoffman, 1990), this study adds to it by providing empirical evidence that KF11 creates a culture of innovation. This is by way of being a trigger to internal conversations around innovative, new service offerings and innovation-related investments. One FG participant said, *"As the mining industry has gone down* [referring to the trends]*, what it has made us do is consider areas* [triggered internal conversations to consider Iran] *we perhaps wouldn't have considered before"* (Associate Director, Case C). Thus, such discussions lead to the identification of new areas of business opportunity (a challenge for PSFs identified in Chapter 1, Section 1.5.4).

> Based on findings from all three cases, KF11 can be defined as:
> *An activity undertaken at all levels within an organization of acquiring information relating to market requirements/needs leading to identification of ideas to create new service offerings.*

8.4.12 KF12–Supporting Technology for Innovation

The relevant literature

The literature review highlighted the following three key points:

- Technology creates an environment supportive of behaviours for collaboration and implementation of innovation: ICT (Information Communication Technology) can facilitate/support better communication (First Research, 2011) and collaboration (Dombrowski et al., 2007) through providing consultants with access to information/knowledge already in existing systems (e.g. O'Farrell et al., 1993). Further, a proven/tested technology is important for implementation of innovations, but that could vary from industry to industry (e.g. *"technology used in food processing…*[is] *less complex than the one used in oil and gas refining"*) (Mohamed, 1995: p. 381)

- Technology also creates a supportive environment for innovation with external firms/customers: ICT can facilitate/support collaboration with external firms and customers using shared systems platforms for innovation (Dombrowski et al., 2007)

Key findings and the contribution of this research study

Compared to the literature, this study of innovation culture in PSFs:

- Confirms that technology creates an environment supportive of innovative behaviours through internal collaboration

- Confirms that technology creates an environment for innovation with external (client) firms; and adds that, in PSFs, it drives a superior approach to delivering solutions (innovative) to clients

- Adds to the literature that technology is quite critical for some PSFs (e.g. engineering consultancies) as it differentiates them from the competition

Each of these points is explained below with examples (see Table 8.13 for evidence related to KF12 for the cases). First, KF12 enables consultants to work collaboratively. One FG participant said, *"So, no matter where I am I should be able to use my devices…web chats, conference lines…we want us all to be connected* [to collaborate]*"* (Senior Consulting Manager, Case A). Another FG participant said, *"Technology…is a tool for using the knowledge and leveraging the experience we have*

in a more efficient way" (Technical Director, Case C). Thus, KF12 enables better internal interactions and drives innovative behaviours (a challenge for PSFs discussed in Chapter 1, Section 1.5.4).

Table 8.13: Evidence on KF12 from the Case Studies

Key Factor	Case A	Case B	Case C
Supporting Technology for Innovation	Rep grid: An organization needs to equip their consultants (on engagements) with the right tools including having policies that allow consultants to use their own devices Focus group: KF12 enables employees to use appropriate technology in their approach with clients and be able to work collaboratively	Rep grid: An organization can use technology to support their new ways of working (e.g. measuring performance of innovation, portfolio of innovation etc.)	Rep Grid: An organization can leverage technology to provide better solutions and solve client problems Documents: New technology tools support analysis work, test solutions, and enable development of in-house technology Focus group: Technology provides operational efficiencies and effectiveness, helps explore ahead of competition any new, and avoid any missed, opportunities, and supports employees in meeting clients' expectation

Also, this study confirms that technology can be used to work innovatively with external (client) organizations. One FG participant said, *"We do leverage technology…that suits…clients' comfort factor* [meets client needs]*"* (Associate Director, Case C). More specifically in PSFs, this study adds that KF12 enables PSFs to deliver innovative solutions. One FG participant said, *"Working in digital transformation…take the latest digital tools* [refers to use of digital tools to innovate]*…how we approach our customers I think is pretty important"* (Consulting Director, Case A). Thus, technology supports delivery of innovative solutions (a challenge for PSFs as discussed in Chapter 1, Section 1.5.4). Finally, this study adds how technology can be a differentiator over competition. One FG participant said, *"If we look at competition, we have to keep up with technology, especially if that technology makes them* [the competition] *cheaper"* (Technical Director, Case C). Thus, while technology cannot replace people, having it could lead to being able to identify new areas of business opportunity ahead of the competition (a challenge for PSFs as discussed in Chapter 1, Section 1.5.4).

> Based on findings from all three cases, KF12 can be defined as:
> *Organizations can leverage technology to support their innovation initiatives both internally (through collaboration) as well as externally (through use of technology tools that can help clients) and be a key differentiator vis-à-vis competition.*

8.4.13 Summary

Interviewees across all three cases have identified the relevance of key factors of innovation culture as described in Section 8.4. Please refer to Table 8.14 for details of the summary[79] of the discussion presented in Sections 8.4.1 to 8.4.12. The table shows the linkages between the reasons (column 4), and the key areas of challenge for PSFs (column 5) that the key factors address. For example, No.1, 'KF1–Rewarding innovation' has been identified as a key factor for two reasons: (a) KF1 provides a guiding framework for consultants to prioritize work and (b) KF1 provides opportunities for junior staff to work closely with senior members of staff. In the context of PSFs, a key challenge for PSFs is to strike a balance between billable hours and innovation (column 5). Thus KF1, by way of linking the value of rewards directly to innovation generated provides consultants with the necessary motivation to prioritize their work more towards innovation (column 4). Thus, KF1 actually enables consulting companies to overcome a key challenge that then enables them to create a culture of innovation. Therefore, in PSFs, because the front-line consultants are the key source of innovative ideas, they need to balance carefully between billing and working on innovation; and KF1 provides them with the guiding framework to do just that. Likewise, all of the other key factors, their associated reasons and the core challenges in PSFs that the key factors help address, are summarized in Table 8.14.

The key point learned is that, in PSFs, an environment needs to be created that supports innovation, by enabling firms to overcome the challenges they face that can inhibit innovation. Thus, the 12 factors, as explained in each section above, support PSFs in navigating through the six areas of challenge discussed in Chapter 1 (Section 1.5).

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[79] *Please note that this summary view is further developed in Chapter 9 (Section 9.3.1) to pictorially show how two or more of the key factors in conjunction with each other address the six challenges in PSFs.*

Table 8.14: Summary of the 12 key factors, associated reasons, and the key areas of challenge for PSFs that the key factors address

No.	Final Code	Key Factor of Innovation Culture (RQ1)	Summary of Reasons (RQ2) for the importance of key factors (RQ1)	Areas of challenge for PSFs addressed by key factors
1	KF1	Rewarding innovation	Provides a guiding framework for consultants to prioritize work	(a) Balance between billing and innovation
			Provides opportunities to work closely with seniors	(b) Internal growth path for consultants
2	KF2	Explore externally for innovation opportunities	Increases the market awareness levels through partnerships	(e) Identifying new areas of business opportunity and investment in innovation
			Builds internal capabilities through acquiring companies or making partnership arrangements	(d) Build capacity to innovate
			Enables creation of holistic solution offerings in collaboration with partners	(c) Innovative solutions to clients
3	KF3	Diversity	Enables consultants to focus on diversity of thought through deliberation on potential solution options	(c) Innovative solutions to clients
			Creates a deliberate disruption of thought that can produce new and innovative ideas	(e) Identifying new areas of business opportunity and investment in innovation
4	KF4	Leadership focused on innovation	Sets priorities to manage consultants' time at an operational level	(a) Balance between billing and innovation
			Supports junior staff through working more closely with them on client projects	(c) Innovative solutions to clients
			Allocates necessary resources to support junior staff and through that helps consultants grow	(d) Build capacity to innovate
5	KF5	Empowerment	Provides consultants with the flexibility to manage their time	(a) Balance between billing and innovation
			Gives consultants the flexibility and autonomy to think outside the box	(c) Innovative solutions to clients
			Enables consultants and supervisors to build better relationships to have constructive discussions on innovation	(d) Build capacity to innovate
6	KF6	Reinvent your business model	Enables consulting companies to keep themselves relevant in the marketplace	(e) Identifying new areas of business opportunity and investment in innovation
			Provides direction in terms of what capabilities need to be developed in order to address new market/business needs	(d) Build capacity to innovate
			Enables companies to start thinking about expanding into new markets	(d) Build capacity to innovate

No.	Final Code	Key Factor of Innovation Culture (RQ1)	Summary of Reasons (RQ2) for the importance of key factors (RQ1)	Areas of challenge for PSFs addressed by key factors
7	KF7	Dedicated time for innovation	Provides consultants the motivation to take time off and focus on innovation	(a) Balance between billing and innovation
			Allows time for front-line consultants, who are close to clients, to be able to solve client problems	(c) Innovative solutions to clients
8	KF8	Physical environment	Enables team members to have better face-to-face interactions	(f) Improving internal interactions and behaviours
9	KF9	Innovation execution capability	Enables consulting companies to build the ability to develop and market innovative ideas	(d) Build capacity to innovate
			Enables consulting companies to provide clients with confidence of the company's ability to innovate	(d) Build capacity to innovate
10	KF10	Enabling people to build knowledge to innovate	Enables companies to harness the combined capabilities of consultants who have already been formally trained	(d) Build capacity to innovate
			Creates an internally competitive environment for individuals to grow	(b) Internal growth path for consultants
11	KF11	Actively tracking market trends and aligning	Enables consulting companies to proactively anticipate trends	(e) Identifying new areas of business opportunity and investment in innovation
			Informs new/future business opportunities	(e) Identifying new areas of business opportunity and investment in innovation
			Triggers internal conversations around investments that can be made on new service offerings and innovation	(e) Identifying new areas of business opportunity and investment in innovation
12	KF12	Supporting technology for innovation	Enables consultants to use appropriate technology in their approach with clients	(c) Innovative solutions to clients
			Enables consultants to work efficiently and collaboratively	(f) Improving internal interactions and behaviours
			Enables consulting companies to explore new markets and undertake innovative work	(e) Identifying new areas of business opportunity and investment in innovation

8.5 OTHER RELEVANT FACTORS OF INNOVATION CULTURE

This section discusses the 15 factors that were mentioned as relevant in one or two cases (but not in all three cases) (presented in Table 8.1): (a) nine factors (e.g. dedicated innovation office, coaching and mentoring, effective internal relationships), i.e., three factors unique to each case; (b) six factors (e.g. risk-taking, focus on identifying value of innovation, supportive organization structure), i.e., four are unique to Cases A and B, one to Cases A and C and one to Cases B and C. This section presents learnings from the unique contexts of the cases in which the factors were found.

8.5.1   Factors Unique to PSF Company Context

There are three unique factors, each of which was very specific to Cases A, B and C. Case A has adopted a centralized approach to managing innovation across the organization. For Case A, both 'ORF8–Internal communication' and 'ORF7–Dedicated innovation office' support their centralized approach to innovation. ORF7 supports the end-to-end process of guiding/coaching consultants on how innovative ideas are generated and taken to implementation, and also how solutions are provided to clients. ORF8 ensures that consistent messages on innovation reach everyone, so the consultants could use/leverage innovations already undertaken across the organization. As discussed in Chapter 1 (Section 1.5), utilization rates of consultants are high and there is very little time to focus on innovation. These two factors, ORF7 and ORF8, then become the means by which Case A supports their consultants without causing disruption to their utilization targets. Additionally, Case A takes pride in having a 'DNA of innovation' through 'ORF9–Innovation is company's ethos'. This refers to having innovation in every aspect of organizational life so there are consistent messages to the consultants/employees as to what the company stands for. This internal consistency, they believe, can be their strength as clients are looking for new insights and they need organizations to be innovative in every aspect of their organizational life (e.g. recruitment, appraisals, communication, etc.).

As revealed by the interviewees, in contrast to Case A, Case B has adopted a devolved approach to managing innovation internally, i.e., there is no central group that

supports and tracks innovation performance. All three factors ORF10 to ORF12, as discussed in Chapter 6 (Section 6.4.2), support the devolved model of innovation management. 'ORF10–Balanced teams' serves the purpose of creating an environment where ideas are brainstormed/generated and presented to the clients. 'ORF11–Coaching and mentoring' creates an environment where new ideas can be easily aired, and ideas can be generated and shared with senior members of the staff. 'ORF12–Access to top management' provides an environment where there are networks of relationships and that breaks down the hierarchical barriers which would help in progressing ideas through to implementation. These three factors help Case B in the absence of a centralized innovation group.

The three unique factors in Case C relate to their most recent strategic move to enter international markets with new innovative solutions (a wider application is for any consulting company moving into newer markets) and the challenging context in which they operate. There is an inherent need for them to be flexible to adapt to international market requirements and regulations, be agile in their responses, and also mobilize resources across the organization to meet their business objectives. For Case C, 'ORF13–Flexible to change' refers to flexibility that ranges from flexing/altering contracts (to quickly adapt to the changing regulatory context of their clients), to having enough room to try something different, to being nimble and quick to change. 'ORF14–Supporting organization structure' enables Case C to make quicker decisions, respond innovatively to clients' requests and take a cautious approach to making investments. Further, 'ORF14–Effective internal relationships' enables consultants in Case C to work with each other better in order to solve client problems and to build good internal relationships between consultants and the management, so they are able to quickly mobilize the resources needed to bid for new work in new markets.

All of the above-mentioned nine factors are being uniquely used by each case within their context of immediate need, and could become potential barriers to innovation if not addressed.

8.5.2 Factors Unique to PSF Industry/Segment Context

This section deals with the factors that are specific to two cases (A&B, A&C and B&C): four factors are common to Cases A and B, one is common to Cases A and C, and one to Cases B and C. There are a number of reasons why these factors were found specifically in these cases. When examined closely through the within case analyses available in Chapters 5, 6 and 7, it was observed that they related broadly to the industry- or segment-specific context in which the PSF case companies operated.

The four factors common to Cases A and B. As discussed in Chapter 1 (Section 1.5), the work undertaken by consultancies involves the co-creation of knowledge with clients and clients can be a key source of innovative ideas, and sometimes even key drivers for innovation. Innovation is often a requirement in RFPs[80] (Request for Proposals) from clients, as highlighted by interviewees in both Cases A and B (Chapters 5 and 6), and as discussed in Section 8.2. On the other hand, in Case C, the FG discussed and one participant also pointed out that *"clients are looking for more reliable and quality solutions"* (Associate Director, Case C), indicative of a different type of clients' demands. Therefore, it was not surprising in Cases A and B to find 'ORF2–Driven to innovate due to external factors' as relevant for them, i.e., to be responsive to external drivers (clients' needs) for innovation. In this context, companies use innovation as a key differentiator. In like manner, it was also not surprising to find the factors 'ORF1–Client at the centre of innovation' and 'ORF6–Focus on identifying value of innovations' as natural responses to what clients need and define as 'innovation' (ORF1) and focused on creating, measuring and treating 'value' as the client sees it (ORF6). This study in PSFs highlights the importance of context and provides support to this dichotomy of views, i.e., there is a body of knowledge that reports clients as key triggers to professional knowledge (Bettencourt et al., 2002; Engwall & Kipping, 2002) where innovation could potentially be triggered by clients (as in Cases A and B) and another that suggests that *"reliability of the solution consistent with the knowledge constituting the professional field"* is what

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[80] This was evident from factor 'KFA11- Driven to innovate due to external factors', which was mentioned by interviewees in both Cases A and B

clients look for and that is what they value (Nikolova, 2012) (as it is in Case C). Also, both Cases A and B operate in high growth sectors (discussed in Section 8.2). Therefore, 'ORF3–Strong growth focus', in the form of setting aggressive growth targets (as a trigger), can drive consulting managers to look for innovation as a means of achieving such high growth.

The one factor common to Cases A and C. 'ORF5–External communication to the market' is again not a surprise because both Cases A and C do not enjoy the same brand value, reputation and top position in their individual league of firms as Case B does. Therefore, the need for communicating to the external market is perceived by both Cases A and C; they believe this would drive an internal need to live up to the expectations set within the external environment, which in turn creates a culture that supports innovation in order that they meet market needs.

The one factor common to Cases B and C. 'ORF4–Risk-taking' has been mentioned as relevant in both Cases B and C. This finding seemed to be more from the lack of having an appetite, especially when it is most needed, to taking risks in PSFs in general. Case B is known in the industry for its reputation and clients go to them for the high quality of consultancy advice they stand for. The focus group participants in Case B discussed how PSFs should be more open to having conversations with clients to jointly innovate, accepting the risks and rewards associated with such an endeavour. One participant in Case B said, *"We can come in, we can innovate with you* [client] *and we can fail fast and that will burn that cycle* [of decision making] *much quicker and that's the value we bring in our conversation."* For Case C, the interviewees talked about taking risks by way of entering international markets through acquisitions, joint ventures, and the recruitment of talent locally. Extending this to the wider context of PSFs, a key learning is that ORF4 can create more opportunities and also a culture of working on joint innovation projects with clients (although perceived risky initially) or other partners, of course within the context of the right set of rules (or contractual arrangements) in such engagements.

8.6 CHAPTER SUMMARY

This chapter has provided details of the cross-case analysis of the three Cases A, B and C. Twelve factors were identified as key factors across the three cases. All of the 12 key factors were discussed in detail in terms of the evidence available across the three cases, comparison of each of the factors to relevant literature (both the SLR in Chapter 3 and PSF literature review in Chapter 1), and how each of the factors addresses challenges in PSFs that could be inhibiting to developing or creating a culture of innovation.

Further, this chapter also discussed 15 factors that are relevant but have not emerged as key factors. Nine of the 15 factors were discussed in the context of the circumstances specific to the companies themselves. The remaining six factors were discussed in the context of specific dynamics of the industry segments in which the case companies (Case A in the IT consulting industry, Case B in Management consulting, and Case C in Engineering consulting) operate. The learnings from these factors were also discussed in detail.

Finally, six key conclusions were drawn from the cross-case review undertaken across Cases A, B and C. All of the conclusions discussed how the findings from the cross-case review contribute to both academic and practitioner work on innovation culture.

9.0 RESULTS AND CONCLUSIONS

9.1 INTRODUCTION

This final chapter builds on the cross-case analysis presented in Chapter 8 and provides overall conclusions from this research study. It takes the discussion of the results further, and considers its wider implications for practice and for future research in the field of innovation culture. Finally, it provides a summary of this thesis.

Specifically, this chapter covers the following:

- Summary of the main results of this research (Section 9.2);
- Contribution of this research study (Section 9.3);
- Limitations of this research study (Section 9.4);
- Suggestions for future research (Section 9.5); and
- The summary of this thesis

9.2 SUMMARY OF THE MAIN RESULTS OF THE RESEARCH

9.2.1 Background

This research was an exploratory study on innovation culture. The systematic review of the literature identified 27 key factors of innovation culture evident in multiple studies. The literature review highlighted a lack of clarity and sparse empirical evidence around what factors may constitute an innovative organizational culture (e.g. Wang & Ahmed, 2004; Dombrowski et al., 2007; Dobni, 2008; Buschgens, 2013). There is also little understanding of how the factors actually contribute to innovation (Jassawalla and Sashittal, 2002), i.e. what are the reasons why culture is important for innovation as understood by managers? So, in Chapter 4 (Section 4.3.1), it was argued that there are two inherent challenges for managers: to understand which cultural factors are most

important for managers to target in order to create a 'culture of innovation'; and to understand the rationale for such a targeted focus on the important factors. The two gaps in the literature, and their associated challenges, led to the two research questions this research aimed to answer:

Research Question 1 (RQ1): *What are the most important factors of innovation culture as perceived by managers?*

Research Question 2 (RQ2): *Why are the factors (from RQ1) of culture considered to be important?*

To answer these research questions, a multiple case study design was selected that used four sources of data: rep grids (primary source used to answer RQ1), focus group (primary source used to answer RQ2), documents (supporting evidence to answer RQ1), and observations (supporting evidence to answer RQ1). The multiple case studies were undertaken in the PSF sector, as it is known that innovation is particularly important for such companies. Three consulting organizations were selected (Cases A, B and C) in which to investigate the phenomenon (or concept) of innovation culture. Twelve repertory grid interviews and one focus group were undertaken at each of the three companies. The unit of analysis was the consulting line of business (LoB) at an organizational level[81] for cases A, B and C.

9.2.2 Research Context: Professional Services Firms

As discussed in Chapter 1 (Section 1.5.4) and Chapter 4 (Section 4.3.5), PSFs provide a unique context to study the phenomenon (or concept) of innovation culture. First, the work undertaken by PSFs is primarily innovative. There are always new aspects in the services rendered by PSFs to specific clients; every engagement or project is unique and therefore the outcomes required, and actually delivered, are also unique (O'Mahoney, 2011). Second, the researcher has not found any studies on innovation culture in the PSF

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[81] *Please refer to Chapter 4, Section 4.3.5 for more specific details.*

industry in the set of 74 papers shortlisted as part of the SLR. Therefore, this provides a unique opportunity.

While PSFs are inherently innovative in terms of what they deliver, they face key challenges. For example, their focus on billable hours can restrict the time available for innovation. Also, in PSFs, the pyramid structure where the billing of junior staff provides cost leverage (discussed in Chapter 1, Section 1.5.4) can make it difficult for innovation to occur naturally. Such challenges make the context even more interesting to study from an innovation culture perspective.

9.2.3   Key findings: RQ1 and RQ2

RQ1 asked: *What are the most important factors of innovation culture as perceived by managers?* The factors of innovation culture were identified from repertory grid interviews, and across the cases, 12 key factors were empirically determined. The identification of key factors was based on their frequency of occurrence (at least 25% of the interviewees mentioned them in each case) and variability (how much the interviewees were able to differentiate each factor against the six companies they selected for the purpose of the interviews) as discussed in Chapter 4 (Section 4.4.2, Appendix 4-3).

Table 9.1 summarises the 12 key factors of innovation culture in PSFs that can be seen as essential to innovation culture. Following Gerring (2012: p. 135), these 12 key factors can be viewed as the *"bare essentials"* of the phenomenon of innovation culture. As discussed in Chapter 8, these key factors actually address the challenges that are inherent in PSFs and support the view that they are essential to innovation culture. They can be used to describe the basis of innovation culture in firms similar to the three cases; however, more empirical evidence will be needed to confirm this view.

In contrast, an inclusive approach to defining the phenomenon (or concept) of innovation culture would include all of the 27 identified in this research and the literature, of course avoiding *"blatantly contradictory elements* [factors]*"* (Gerring, 2012: p. 136).

However, the more factors that are added to a phenomenon[82], the less clear it becomes (Gerring, 2012). This reinforces the idea of RQ1 focusing on the key factors of innovation culture.

RQ2 asked: *Why are the factors (from RQ1) of culture considered to be important?* This question was relevant because there is very little understanding in the literature of how the factors of culture actually contribute to innovation (Jassawalla and Sashittal, 2002). The cross-case review presented in Chapter 8 provided a detailed account of how the key factors of culture actually support innovation in the context of PSFs by way of addressing the inherent challenges they face that can inhibit innovation. While this provides empirical evidence for the importance of the 12 key factors, these reasons, at a practical level, would provide managers with a few areas on which to focus in creating a culture of innovation.

This study identified 29 reasons why the 12 key factors of innovation culture were perceived as important; the results show that the 12 key factors enable PSFs to address the challenges they face in focusing on innovation. These are summarised in Table 8.14 (re-presented here in Table 9.1 for ease of reference) summarizes how the 12 key factors help to address the challenges.

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[82] *This research study identified 12 new factors across, (see Figure 8.1) derived from Cases A, B and C, and that do not overlap with the literature. And when these 12 new factors (e.g. 'ORF3–Strong growth focus', 'ORF7–Dedicated innovation office') are added to the list of 27 from the literature, it would lead to a total of 39 factors of innovation culture. This definitely does not make the concept clearer. Therefore, this reinforces the importance of RQ1.*

Table 9.1: The 12 key factors (RQ1), the reasons for their importance (RQ2) and the areas of challenge for PSFs they address

No.	Final Code	Key Factor of Innovation Culture (RQ1)	Summary of Reasons (RQ2) for the importance of key factors (RQ1)	Areas of challenge for PSFs addressed by key factors
1	KF1	Rewarding innovation	Provides a guiding framework for consultants to prioritize work	(a) Balance between billing and innovation
			Provides opportunities to work closely with seniors	(b) Internal growth path for consultants
2	KF2	Explore externally for innovation opportunities	Increases the market awareness levels through partnerships	(e) Identifying new areas of business opportunity and investment in innovation
			Builds internal capabilities through acquiring companies or making partnership arrangements	(d) Build capacity to innovate
			Enables creation of holistic solution offerings in collaboration with partners	(c) Innovative solutions to clients
3	KF3	Diversity	Enables consultants to focus on diversity of thought through deliberation on potential solution options	(c) Innovative solutions to clients
			Creates a deliberate disruption of thought that can produce new and innovative ideas	(e) Identifying new areas of business opportunity and investment in innovation
4	KF4	Leadership focused on innovation	Sets priorities to manage consultants' time at an operational level	(a) Balance between billing and innovation
			Supports junior staff through working more closely with them on client projects	(c) Innovative solutions to clients
			Allocates necessary resources to support junior staff and through that helps consultants grow	(d) Build capacity to innovate
5	KF5	Empowerment	Provides consultants with the flexibility to manage their time	(a) Balance between billing and innovation
			Gives consultants the flexibility and autonomy to think outside the box	(c) Innovative solutions to clients
			Enables consultants and supervisors to build better relationships to have constructive discussions on innovation	(d) Build capacity to innovate
6	KF6	Reinvent your business model	Enables consulting companies to keep themselves relevant in the marketplace	(e) Identifying new areas of business opportunity and investment in innovation
			Provides direction in terms of what capabilities need to be developed in order to address new market/business needs	(d) Build capacity to innovate
			Enables companies to start thinking about expanding into new markets	(d) Build capacity to innovate

No.	Final Code	Key Factor of Innovation Culture (RQ1)	Summary of Reasons (RQ2) for the importance of key factors (RQ1)	Areas of challenge for PSFs addressed by key factors
7	KF7	Dedicated time for innovation	Provides consultants the motivation to take time off and focus on innovation	(a) Balance between billing and innovation
			Allows time for front-line consultants, who are close to clients, to be able to solve client problems	(c) Innovative solutions to clients
8	KF8	Physical environment	Enables team members to have better face-to-face interactions	(f) Improving internal interactions and behaviours
9	KF9	Innovation execution capability	Enables consulting companies to build the ability to develop and market innovative ideas	(d) Build capacity to innovate
			Enables consulting companies to provide clients with confidence of the company's ability to innovate	(d) Build capacity to innovate
10	KF10	Enabling people to build knowledge to innovate	Enables companies to harness the combined capabilities of consultants who have already been formally trained	(d) Build capacity to innovate
			Creates an internally competitive environment for individuals to grow	(b) Internal growth path for consultants
11	KF11	Actively tracking market trends and aligning	Enables consulting companies to proactively anticipate trends	(e) Identifying new areas of business opportunity and investment in innovation
			Informs new/future business opportunities	(e) Identifying new areas of business opportunity and investment in innovation
			Triggers internal conversations around investments that can be made on new service offerings and innovation	(e) Identifying new areas of business opportunity and investment in innovation
12	KF12	Supporting technology for innovation	Enables consultants to use appropriate technology in their approach with clients	(c) Innovative solutions to clients
			Enables consultants to work efficiently and collaboratively	(f) Improving internal interactions and behaviours
			Enables consulting companies to explore new markets and undertake innovative work	(e) Identifying new areas of business opportunity and investment in innovation

As discussed in Chapter 1 (Section 1.5.4), the challenges arise because of the inherent key characteristics of PSFs. For example, PSFs are organized in a pyramid structure and rely on the principle of leverage (PSF firms leverage their high cost seniors with the low cost junior staff). The success of this model is entirely dependent on the rate of billability of junior staff (Maister, 2003; Ross, 2015). Therefore, one of the challenges PSFs face is that they will need to create additional non-billable time (other than that allocated to billability of consultants). Row 1 (in Table 9.1) shows that 'KF1–Rewarding innovation' provides motivation in the form of a guiding framework for consultants to prioritize innovation over billing activity. This can effectively create time that consultants are willing to spend on innovation, rather than core, business-as-usual work. Similarly, Row 4 (in Table 9.1) shows that 'KF4–Leadership focused on innovation' enables consultants to manage their time at an operational level by having necessary discussions with leaders and that helps consultants to prioritise work i.e., prioritise work on innovation over business-as-usual billing activity. Both KF1 and KF4 thus support PSFs in addressing the challenge of prioritising innovation over billing.

Another example is that PSFs work closely with clients who continually expect PSFs to provide innovative solutions. One of the key reasons why clients engage PSFs is because they are able to provide deeper insights from a broad base of experience with a diverse pool of clients (Maister, 2003). This poses a challenge for PSFs to be continually innovating with respect to the solutions they offer. Row 2 (in Table 9.1) shows the reason why 'KF2–Explore externally for innovation' was important was because it enables PSFs to provide innovative solutions to clients. So, in collaboration with external firms (e.g. universities, other firms offering complementary capabilities), PSFs are in a position to continually create holistic solution offerings for clients. Similarly, Row 5 (in Table 9.1) shows that 'KF5–Empowerment' gives consultants the flexibility and autonomy to think outside the box, which in turn enables them to provide innovative solutions to clients.

As such, Table 9.1 is a key contribution to the understanding of culture and innovation in PSFs; so, overall, it provides a comprehensive set of answers to RQ2. In addition, it links the reasons why certain factors of culture of innovation are perceived as a key to the challenges they address in the PSF context.

9.3 CONTRIBUTION OF THE RESEARCH

There are three areas in which this study makes a contribution: academic theory, methodology and practice. These are discussed in this section.

9.3.1   Contribution to Academic Theory

This research makes three main contributions to academic theory. First, the main contribution is to bring the first insights into innovation culture in PSFs, where no systematic research has been undertaken previously. As PSFs are a significant part of the economy (globally, up to $280 billion according to Consultancy.uk, see Appendix 1-3 for more details), more research in this area was (and still is) necessary. This study has identified 12 key factors of innovation culture (confirming ten out of the 27 published in the literature and adding two new key factors). This contributes to the development of the concept (or understanding of the phenomenon) of innovation culture in two ways: (a) a few of the ten key factors such as 'KF3–Diversity', 'KF8–Physical environment', 'KF12–Supporting technology for innovation', etc., are now understood in more detail in terms of how they create a culture of innovation and can therefore be added to the assessment of innovation culture in the future; and (b) two new key factors 'KF6–Reinventing the business' and 'KF9–Innovation execution capability' were not found in the literature, but were shown to be important for PSFs. This research provides 12 key factors – derived using strict criteria from the cross-case analysis – that can be identified as the *"bare essentials of a concept"* (Gerring, 2012: p. 135). These can be used by researchers in the future as they have *"narrow* [ed] *the empirical boundaries of the concept"* [of innovation culture] (Gerring, 2012: p. 122). The 12 key factors provide conceptual clarity to the phenomenon (6 & Bellamy, 2012; Gerring, 2012) but in which contexts they apply needs further investigation. Please refer to Appendix 9-1, which provides details of the uniqueness of the culture of innovation in PSFs vis-à-vis that of innovation culture in general[83], which was discussed in Chapter 3.

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[83] *This was an attempt to reflect on the practical differences and the importance of the key factors of innovation culture in PSFs.*

Second, this research demonstrated that context plays an extremely critical role in understanding the application of the factors of innovation culture. From the learning acquired from this study of innovation culture in the PSF industry (see Chapter 8, Section 8.5), context could be organizational, industry-specific or sub-segment-specific within an industry as well. This is an indication that 'one size does not fit all' and that both firm and industry specificity cannot be ignored when it comes to creating a culture of innovation.

Third, this research has also identified key reasons why managers perceived the 12 key factors as important, responding to the call of Jassawalla and Sashittal (2002) and Judge et al. (1997) who raised concerns about the lack of understanding of how the factors of culture are relevant to the outcome of innovation[84]. As highlighted in Chapter 4 (Section 4.3.1), the literature confirms that there are links between the different factors, but does not provide specific details of the relationship between them. This empirical research provides a deeper theoretical understanding of the relevance of the key factors of innovation culture to innovation outcome in the form of reasons why the key factors are important. The 12 key factors and their impacts on the challenges faced by PSFs are evident from the reasons for their importance (see Table 9.2, which has been drawn up based on the summary of findings from Chapter 8, Section 8.4, Table 8.14/Table 9.1). Table 9.2 shows the six challenges PSFs face (across the top) and how the 12 key factors of culture of innovation impact on them. This is presented here in order that a few theoretical insights can be derived from the relationships between the key factors and the challenges in PSFs.

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[84] *Please note that the 12 key factors address the key challenges in PSFs and that produces an environment or culture of innovation, which could potentially, in turn, generate innovation (referred to as 'outcome of innovation' here).*

Table 9.2: Key factors and the impact they have on the six areas of challenge in PSFs

Final Code	Key Factor of Innovation Culture (RQ1)	Challenges in PSFs and how one or more of the 12 key factors address them					
		(a) Balance between billing and innovation	(b) Internal growth path for consultants	(c) Innovative solutions to clients	(d) Build capacity to innovate	(e) Identifying new areas of business opportunity and investment in innovation	(f) Improving internal interactions and behaviours
KF1	Rewarding innovation	- Provides a guiding framework for consultants to prioritize work	- Provides opportunities to work closely with seniors				
KF2	Explore externally for innovation opportunities			- Enables creation of holistic solution offerings in collaboration with partners	- Builds internal capabilities through acquiring companies or making partnership arrangements	- Increases the market awareness levels through partnerships	
KF3	Diversity			- Enables consultants to focus on diversity of thought through deliberation on potential solution options		- Creates a deliberate disruption of thought that can produce new and innovative ideas	
KF4	Leadership focused on innovation	- Sets priorities to manage consultants' time at an operational level		- Supports junior staff through working more closely with them on client projects	- Allocates necessary resources to support junior staff and through that helps consultants grow		
KF5	Empowerment	- Provides consultants with the flexibility to manage their time		- Gives consultants the flexibility and autonomy to think outside the box	- Enables consultants and supervisors to build better relationships to have constructive discussions on innovation		
KF6	Reinvent your business model				- Provides direction in terms of what capabilities need to be developed in order to address new market/business needs - Enables companies to start thinking about expanding into new markets	- Enables consulting companies to keep themselves relevant in the marketplace	

Final Code	Key Factor of Innovation Culture (RQ1)	Challenges in PSFs and how one or more of the 12 key factors address them					
		(a) Balance between billing and innovation	(b) Internal growth path for consultants	(c) Innovative solutions to clients	(d) Build capacity to innovate	(e) Identifying new areas of business opportunity and investment in innovation	(f) Improving internal interactions and behaviours
KF7	Dedicated time for innovation	- Provides consultants with the motivation to take time off and focus on innovation		- Allows time for front-line consultants, who are close to clients, to be able to solve client problems			
KF8	Physical environment						- Enables team members to have better face-to-face interactions
KF9	Innovation execution capability				- Enables consulting companies to build the ability to develop and market innovative ideas - Enables consulting companies to give confidence to clients of the company's ability to innovate		
KF10	Enabling people to build knowledge to innovate		- Creates an internally competitive environment for individuals to grow		- Enables companies to harness the combined capabilities of consultants who have already been formally trained		
KF11	Actively tracking market trends and aligning					- Enables consulting companies to proactively anticipate trends - Informs new/future business opportunities - Triggers internal conversations around investments that can be made on new service offerings and innovation	
KF12	Supporting technology for innovation			- Enables consultants to use appropriate technology in their approach with clients		- Enables consulting companies to explore new markets and undertake innovative work	- Enables consultants to work efficiently and collaboratively

For example, it can be seen in Table 9.2 that one of the key challenges PSFs face is to strike a balance between billing hours (this is a key survival activity as it is the key source of revenue) and innovation. Since PSFs need to remain profitable, their focus and emphasis is on billing. Billing therefore is an ongoing activity and the primary focus of PSFs (although it indicates a myopic view of the world) in contrast to innovation, which can actually, potentially be a means to an end of realizing more billing in the long term (Ross, 2015). Because of the nature of internal management reporting in PSFs to track business growth through billing, more emphasis is placed on billing and it takes priority. In Table 9.2, the challenge of billing is the third column labelled 'Balance between billing and innovation'; as can be seen in that column, there are four factors of innovation culture that impact on the balance between billing and innovation. These are: 'KF1–Rewarding innovation', 'KF4–Leadership commitment to innovation', 'KF5–Empowerment', and 'KF7–Dedicated time for innovation'. While the literature suggests that KF1 increases motivation, this research has identified the particular aspects of motivation (e.g. monetary rewards commensurate with the value of innovation generated) that provide a guiding framework for consultants to prioritize time (see reason mentioned in the area shaded in grey) to focus on innovation. More theoretical insight can be derived when this influence of KF1 is viewed in conjunction with the influences the three other factors have on the area of challenge related to billing. KF4 sets priorities to manage consultants' time at an operational level and that provides operational flexibility to balance time between billing and innovation. Although KF1 provides the guiding framework, without supervisory leadership (KF4) allowing a flexible workload, it would be extremely difficult to realize the benefits of just KF1. Likewise, KF5 provides the flexibility that consultants would need to manage their own workload and KF7 (in the form of dedicated time set aside by the management for innovation) motivates consultants to take time off from business-as-usual work and focus on innovation. Therefore, all four factors highlighted here need to act in tandem to support the consultants to overcome the challenge of focusing more on billing hours than innovation.

Similarly, in Table 9.2 the challenge of internal growth of consultants (column 4) is impacted on by two key factors: 'KF1–Rewarding innovation' and 'KF10–Enabling people

to build knowledge to innovate'. KF1 provides opportunities to work closely with seniors, which creates a quick way of learning and growing with the organization. KF10 creates an internally competitive environment (as more individuals train themselves, they are more knowledgeable in the areas of organizational focus and therefore there is more competition) that in turn pushes more individuals to train themselves through formal learning/training, thus enabling them to grow. This means that both KF1 and KF10 create an environment that can help PSFs to overcome the challenge of creating opportunities for consultants to be on an internal growth path.

9.3.2   Contribution to Methodology

This study provides three areas of contribution to methodology. First, it has demonstrated the viability of a new approach (repertory grid interviews) for investigating the concept of innovation culture. As already seen from the literature review, different terms (e.g. risk-taking, explore network relationships, communication) mean different things to different people and defining these terms was difficult but an important task undertaken as part of the systematic review of the literature. In the interviews, direct questioning would not have uncovered interviewees' perceptions of innovation culture to the level achieved by repertory grids.

Second, this research developed a research design, using multiple data sources (mainly qualitative data), which enabled triangulation of the results and could be applied to future research in innovation culture. Particularly, the sequence in which the different sources were used to answer RQ1 and RQ2 can be replicated. For instance, the results from repertory grids were readily used as an input into focus groups to gather data on the reasons why managers considered the factors to be important. This was followed by analysis of supporting evidence from documents and observations (although they could be made better, see some reflections on research design documented in Appendix 9-2).

Third, this study successfully applied and demonstrated the approach of *"moving between across- and within-case comparisons"* (Ayres et al., 2003: p. 875) (i.e., dipping in and out of individual cases across cases) – a particular way of undertaking cross-case analysis – while still maintaining the focus on the phenomenon, and not sacrificing too much of detail from within-case analyses. For example, the final findings related to 'KF1–Rewarding innovation' as a key factor (RQ1) from the three cases were analysed for similarities and differences between them without going into case-specific details pertaining to KF1. But when analysing the reasons (RQ2) for the importance of KF1 across the three cases, specific within-case analyses were considered. Therefore, some moving between across-case and within-case was undertaken in order to complete the multiple case analysis while keeping the focus on the phenomenon of the culture of innovation.

9.3.3 Contribution to Practice

In the PSF context, companies face an inherent tension between professionalism and entrepreneurship (Reihlen & Werr, 2012); therefore, culture can be a key differentiating factor. In a high knowledge intensity context (where capital intensity is low), and where people are a key asset to the organization, culture plays a critical role. PSFs are set up in such a way that it becomes unhelpful sometimes to focus on time spent on innovation because of the characteristics that typically drive their operations, i.e., billing is equal to revenue generation.

A clear contribution to practice is the list of empirically derived 12 key factors identified across all three cases and the reasons for their importance in terms of how they support addressing the six key areas of challenge for PSFs. To test the utility of these factors, two of the 12 interviewees from Case A were contacted and additional interviews conducted. During the interviews, Table 9.2 (sent in advance by email) was explained and they were asked to comment on how the factors could potentially help them in how they would do things differently with the findings of this research study. This provided not only a check on the face validity of the key factors but also insights into how the key factors can be practically

implemented within the organization. The first interviewee said, *"Anybody looks at anything like this* [referring to Table 9.2]*, you start looking for evidence to support your own views of the world, so for me, I do see some of those that always jump out"* (Senior Client Director, Manufacturing and Logistics). He commented on the importance of dedicated time for innovation (KF7) and what that could potentially mean for PSFs, *"I would look at ways of having 70% of my organization billable and the remaining 30% totally used by thinkers…of the team of 10 people, 7 would be fully billable and 3 are doing nothing but coming up with ideas and then you rotate"* and acknowledged that it is a risk for organizations and went on to say that *"I do know it would be a challenge to put 300 of the 1000 consultants on blue sky thinking…maybe a step too far, but how about putting 50 consultants on that...have a dedicated plan, week by week we track progress, come up with something tangible."* He also highlighted the importance of the physical environment and how important it is to bring people together, *"there's lots of things you can do to bring people together to solve problems"*, and gave an example of a project where a friendly physical environment helped them: *"we had a huge open plan office where we, client's business team, IS* [Information Services] *teams, all mixed together worked fantastically...but within the building we took another room/safe space for our own company consultants, we'd brainstorm and come up with ideas and go back into the office* [where clients were collocated]*...these are small things we can do to encourage new ideas."*

The second interviewee, linking the idea of tracking markets (KF11) with exploring externally for innovation (KF2) through partnering, said, *"As a consulting organization, we need to deliberately plan to partner. So for us…we keep looking out for what the OEMs* [Original Equipment Manufacturers – who sell products to manufacturing companies] *offer, understand what industry problems they are trying to solve, see how we can bring in our domain capabilities and then work out a partnership model that can provide a full suite of solutions that adds value to our clients. In a way, we are trying to do this, but there has to be a deliberate effort to partner and our culture needs to allow that to happen"* (Consulting Senior Manager, Manufacturing and Logistics). Talking about the importance of innovation execution capability for PSFs and how it enables them to test ideas, he continued, *"I see a*

lot of consulting organizations are struggling with this one; only a very few…are able to do that [taking an idea through planning, evaluation and execution]…*through the funnel to see it* [an idea] *is generating revenue. You can come up with an innovative idea…but you can't simply say the idea is brilliant and it is going to be successful. If consulting companies are able to come up with an execution model* [capability to test and demonstrate solutions work]*, they can again sell that as a service to manufacturing companies."* Thus, both interviewees highlighted the importance and relevance of the factors of innovation culture to PSFs.

In addition to identifying the 12 key factors of innovation culture (core factors), 15 other relevant factors have been identified (as presented in Chapter 8, Section 8.5). This research provides insights into the relevance of these 15 factors to PSF firm-specific contexts and also the PSF industry sub-segment context. This description (presented in Chapter 8, Section 8.5) can be useful for similar organizations to Cases A, B and C to consider, while they continue to stay focused on the 12 key factors of innovation culture. For example, the importance of certain factors for Case B in supporting them with the model of devolved innovation as opposed to that (centralized model) in Case A.

Further, this research has identified that some of the very commonly used terms, such as 'rewarding innovation', 'risk-taking', etc., can mean different things in different contexts. For example, 'rewarding innovation' can refer to linking monetary rewards to the actual value of innovation generated (as identified in Cases A and C), and 'risk-taking' to joint undertaking with clients that can involve specific contractually agreed models to try and test new ideas (as identified in Case B). This demonstrates that the application of key factors to individual organizations, and also potentially in the broader context of the PSFs, can be very different. Therefore, the key learning from a managerial practice perspective is that, while factors can be generalized at the PSF level in terms of what they are, their application needs to be clearly thought out at each individual organizational level.

9.4 LIMITATIONS OF THIS RESEARCH STUDY

This research study is exploratory so there are a number of limitations that are important to acknowledge.

First, the sample of cases used (three) is small because of the challenges of access and a general reluctance on the part of PSFs to allow access to confidential information. Therefore, this study could not use large numbers within the available time and therefore cannot claim to have used a representative sample of cases. Consequently, the results here are tentative and will need further verification using a wider range/larger number of cases.

Second, although four data sources were employed – designed to increase internal validity through triangulation – the results of the individual case findings were limited by: (a) manager reported data (although gathered through structured repertory grid interviews); (b) the amount of data gathered and analysed from documents (the only exception is Case A where more documentation was available) due to confidentiality reasons; (c) the amount of observations (because of confidentiality), as observations made were limited only to that of the building, work area layout, general mood, walls and internal displays, kitchen areas, bulletin board areas, general facilities, and aspects that were readily available for observation.

Third, this being a multiple case study design, a trade-off has been made between the case-specific level of analysis and what was taken into the cross-case analysis as learning, i.e., complexity of meaning of key factors in each case was simplified while undertaking comparisons across cases (e.g. Silverstein, 1988; Tesch, 1990). This is quite a well-known trade-off when it comes to multiple case analyses (Ayres et al., 2003; Stake, 2006). But careful attention was paid to the key factors, as coding was sequentially built, one case upon another, i.e., coding in Case A was used as a base and coding for Case B was built on top of it incrementally, and likewise with Case C. Also, when the cross-case analysis was undertaken, attention to case-specific details was given by going back and forth between individual case findings and cross-case findings.

Fourth, from an empirical investigation perspective, although the utmost care was taken with the coding and categorization of the constructs elicited (into meta-constructs or categories), there is still a degree of ambiguity in the terms. This study has had the support of another researcher to undertake internal reliability checks for all three cases and this has produced a final IRR of c. 95%. Further, this process also included producing definitions of the key factors from this study (without referring to the literature). Additionally, the individual case studies were reviewed by respective representatives for face validity, and input was provided on the terms used and the relevance of those terms to the participants of this study.

Finally, the comparison of empirically derived factors and those identified in the literature was an extremely difficult process, even though there were definitions available from the SLR. Therefore, multiple rounds of review were undertaken in multiple iterations to avoid any overlaps and inconsistencies. Further, since the researcher also works in a PSF context, and has experienced its challenges, there is the possibility of bias in the sense of how the world was viewed, i.e. the lenses through which reality, in the context of the case companies, was viewed. This was addressed by recruiting a second researcher who undertook a parallel coding exercise to validate and compare the results undertaken by the main researcher (the author of this thesis). Further, the individual case reports were validated by reviews undertaken by the participants/sponsors of the case studies.

9.5 SUGGESTIONS FOR FUTURE RESEARCH

The analysis and findings presented in this thesis provide a number of areas that can be considered for directions for future research.

1. As highlighted earlier, there have been very few studies on innovation in the PSF and even fewer on innovation culture in PSFs. More focus needs to be directed towards studies on factors of innovation culture in PSFs.

2. To further validate the results obtained from this study of identifying 12 key factors of innovation culture, a survey of a larger sample can be conducted for confirmatory results.

3. More targeted, outcome-based studies in the PSF sector need to be identified. For example, the tentative view of the clusters of key factors and their influence on the areas of challenge for PSFs (discussed in Section 9.3.1) could be an important place on which to focus in terms of future research. More research needs to focus on these key areas of challenge and how the key factors of innovation culture actually address them in order to enable consultancies to overcome the challenges of business-as-usual and be able to innovate. Therefore, configurations of key factors and how they influence innovation outcomes for PSFs would be of immense value as no studies have been undertaken in this area yet.

4. Further research is needed in terms of understanding the relevance of factors labelled 'Other Relevant Factors' (ORF1 to ORF15 in Chapter 8, Table 8.1) to innovation culture, especially those not identified in the literature (e.g. 'ORF3–Strong growth focus', 'ORF5–External communication to market') and those that emerged as important factors from the within-case analysis in at least two individual cases (e.g. 'ORF6–Focus on identifying value of innovations' identified in Cases A and B).

5. As demonstrated throughout this study, context is an important factor for innovation culture. More systematic context-based studies need to be undertaken. As discussed in Section 9.2.2, more research into the area of fine-tuning the concept of innovation culture can be undertaken by taking an approach of identifying a parsimonious or minimal set of key factors that are necessary for innovation culture. This approach can be taken in tightly defined, context-based studies so that companies can benefit from such focused work. Further, extending this, more studies can focus on cross context comparisons and the core of a minimal set of key factors required in each context. Such studies can be undertaken to develop a broader set of theories on innovation culture.

6. This research produced a number of new factors – factors not discussed in the literature – from repertory grids (though they did not emerge as important). There is a wealth of data available from this study that can be used to further the understanding of how the non-key factors from each case (definitions are already available in individual cases in

Chapters 5, 6 and 7) can be potentially grouped along with existing key factors into higher-order dimensions (an aggregate level of a group of factors that logically cohere). If the approach is to develop the concept of innovation culture accommodating broader contexts through maximally defining innovation culture (i.e., to include not only necessary key factors but also those that are sufficient), more factors can be considered to be added. However, questionnaires with the right set of psychometric properties will need to be designed to undertake factor analysis in order to group them. For example, under the broad sections within the construct of innovation culture, if 'Communication' is an aggregate dimension or a higher-order factor, the non-key factors from cases (for example 'Internal communication' from Case A or 'Communicating success stories' from Case B) can potentially be grouped under 'Communication'.

7. A key observation in the field of innovation culture research has been that there is no systematic development of this research area in terms of developing the understanding of the phenomenon. Researchers could approach this by focusing on developing the construct of innovation culture first (as it can influence other future research) and then test the linkages of specific factors on specific types of innovation outcomes. More fundamental research to develop the construct needs to happen. In all of this, context will play a key role, so studies should be bounded in a context setting in order to develop more theory on the construct of innovation culture within that context. This can then be followed by cross context comparisons to develop theory at a broader level in this field.

9.6 SUMMARY OF THIS THESIS

The research described in this thesis consisted of:

A. An SLR on the phenomenon of innovation culture. This found that there are 27 key factors of innovation culture in the literature. The SLR concluded that there was conflicting evidence concerning the most important factors (so, RQ1 was asked: What are the most important factors of innovation culture as perceived by managers?) and also very little understanding of why the factors are important (so, RQ2 was asked: Why are the factors of culture considered to be important?). The PSF industry was identified as the most suitable to undertake this study.

B. Three in-depth case studies in the PSF industry using multiple data sources.

C. A systematic within- and cross-case analysis. Both RQ1 and RQ2 were answered for all three individual cases (within case analysis). The key factors of innovation culture specific to each case were identified; they broadly fall into the following categories: people practices (e.g. rewarding innovation, diversity, empowerment, dedicated time for innovation), the role of leadership (e.g. leadership focused on innovation), the external focus of an organization (e.g. explore externally for innovation through partnerships, reinventing the business through renewing service/market offerings), and support mechanisms to innovate (e.g. innovation execution capability, physical environment, supporting technology for innovation). Further, a cross-case analysis of findings was also undertaken which identified 12 key factors (relevant across all three cases).

D. The implications for managers and the body of knowledge of innovation culture. From a practitioner's standpoint, this thesis raised a practical question around the lack of clarity with respect to the factors on which managers can focus. Among the myriad of factors of innovation culture (from the literature and the large number of factors identified from individual case studies), this thesis established that there are 12 key factors critical for PSFs and provided evidence as to how these factors address the six challenges that inhibit them from innovating. From an academic standpoint, the identification of the 12 key factors provides greater clarity to the construct of innovation culture.

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APPENDICES

APPENDICES FOR CHAPTER 1

APPENDIX 1-1: SYSTEMATIC REVIEW OF LITERATURE

Introduction to Systematic Review of Literature

This appendix section provides a report on how the emerging research on innovation culture was subjected to a systematic literature review methodology (e.g., Tranfield et al., 2003; Pittaway et al., 2004; Rousseau et al., 2008; Macpherson and Jones, 2010). This research has embraced the high quality literature review approach recommended by Tranfield et al. (2003). This was to ensure 1) that a stepwise approach clearly articulates the review questions and their relevance; 2) the analytical methods and quality criteria for the inclusion or exclusion of articles in the final sample are clearly justifiable; and 3) the refinement of both review questions and protocol with a panel of both academic and practitioner experts to gain the best of both academic and practitioner worlds.

Stepwise Systematic Review Approach and Protocol

Table 1 (A 1-1) provides details of the various steps involved in the process of the systematic review of the literature undertaken as part of this study. There are five stages in all and each one has been detailed in Sections A.1 to A.5.

Table 1 (A 1-1.1): Stepwise Systematic Review Approach

Stage	Steps Involved	Actions performed
A.1 Stage 1: Planning the review	Step 1 – Forming a review panel	A review panel was formed during the scoping study which provided advice during the review process
	Step 2 – Mapping the field of study	A detailed mapping of the field of study was undertaken as part of a Scoping Study (details have already been discussed in Chapter 1, Section 1.3)
	Step 3 – Producing a review protocol	A detailed review protocol was produced, which was reviewed by a consultation panel and was approved in May 2009
A.2 Stage 2: Identifying and evaluating studies	Step 4 – Conducting a systematic search	A search algorithm was developed and documented
	Step 5 – Shortlisting & evaluating studies	Inclusion and exclusion criteria, and also a quality appraisal tool to evaluate shortlisted papers, were developed and documented
A.3 Stage 3: Extracting and synthesizing data	Step 6 – Conducting data extraction	The details of the descriptive analysis of data have been documented
	Step 7 – Conducting data synthesis	An approach to data synthesis has been presented here; the actual synthesis of the literature review is presented in Chapter 3
A.4 Stage 4: Reporting	Step 8 – Reporting the findings	This section provides details of both the descriptive analysis of the papers and the summary of the data extracted to report the findings against the systematic review questions
A.5 Stage 5: Utilizing the findings	Step 9 – Informing research	This section documents the findings that inform research
	Step 10 – Informing practice	This section documents the findings that inform practice

A.1 Stage 1: Planning the review

First, a consultation panel was set up for providing guidance and expert advice during the systematic review process. Meetings with the supervisors had already taken place and guidance from other practitioner sources had been sought on a needs basis. The details of the panel are available in Table 2 (A 1-1.2).

Table 2 (A 1-1.2): Systematic Review Consultation Panel

Name	Title / Organization	Role
Prof. Keith Goffin	Chair, Innovation and New Product Development Cranfield School of Management	Supervisor
Prof. Marek Szwejczewski	Professor, Operations Management Cranfield School of Management	Supervisor
Prof. David Denyer	Senior Lecturer Cranfield School of Management	Systematic Review Expert
Prof. C Brooke Dobni	Dean and Professor Edwards School of Business University of Saskatchewan Canada	Academic (External Advisor) (Was involved in initial email consultations only)
Mr. Kevin Green & Ms. Janet Mather	Senior Managers, Innovation & Change Management, National Grid Plc. Solihull, UK	Practitioner (External Advisors)
Ms. Heather Woodfield	Social Sciences Information Specialist, Cranfield University	Literature Search Advisor

Second, a scoping study was undertaken as part of an initial broad level review of the literature. As described in Chapter 1 (Section 1.3), based on the key findings from the scoping study (again discussed in Chapter 1, Section 1.3), in order to understand which factors of culture contribute to innovation, the following systematic literature review questions were raised:

Systematic Review Question 1 (SRQ1): *What are the factors of innovation culture?*

Systematic Review Question 2 (SRQ2): *What tools or instruments are available to measure innovation culture?*

Third, the systematic review protocol was then developed and agreed with the consultation panel in order to address SRQ1 and SRQ2. The purpose of a review protocol was to guide the process of identifying, appraising and summarizing the results of otherwise unmanageable quantities of research (Mulrow, 1994). It promotes transparency, transferability and replicability (Boaz et al., 2002). The description provided below for Stages 2 to 5 provides the details of the protocol, including that of its development, use and application to this study.

A.2 Stage 2: Identifying and evaluating studies

This stage was undertaken in two steps: conducting a systematic search, then shortlisting and evaluating studies. The former included the development of an algorithm for article selection and the latter included a set of inclusion and exclusion criteria to shortlist and evaluate studies.

A.2.1 – Step 1: Conducting the Systematic Search

The keywords used for this study are based on the scoping study findings (as documented in Chapter 1, Section 1.3) and the systematic review questions presented above: organizational culture, organizational climate, innovation, innovation culture, innovation climate, measurement and factors. Please refer to Table 3 (A 1-1.3) for details. Wildcards such as "*" were used to capture different forms of a keyword.

Table 3 (A 1-1.3): Search Keywords

Area	Keywords
Organizational Culture	"Organi* Culture"
Organizational Climate	"Organi* Climate"
Innovation	Innovat*; "Organ* Innovat*"; "Manag* of Innovat*"; Creativ*; Inventi*
Innovation Culture/Climate	"Innovat* Culture"; "Culture of innovat*"; "Innovat* Climate"; "Climate of Innovat*"
Measurement	Measur*; Diagnos*; Tool*; Instrument*
Factors or Elements	Determinant*; Factor*; Element*

These were further developed into search strings across six themes [see Table 4 (A 1-1.4)] using various combinations of the keywords based on pilot test searches. For example, 'Organizational culture and factors related to innovation' (No. 1, Table 4), has been used to capture studies in the field of organizational culture that discuss factors of culture which relate to innovation and the search included all possible word phrases in the search string that might truly reflect the theme. This was done because the field of enquiry is not defined and there are limited publications; careful gleaning of articles across related areas of research was required. Therefore, even articles that are remotely linked needed to be searched and perused.

Table 4 (A 1-1.4): Search themes and search strings

No.	Search Theme	Rationale	Search Strings
1	Organizational Culture and factors related to innovation	To identify studies in the field of organizational culture and their link to innovation	(Organi* Culture) AND (Innovat*)
2	Organizational Climate and factors related to innovation	To identify studies in the field of organizational culture and their link to innovation	(Organi* Climate) AND (Innovat*)
3	Innovation Culture	To identify studies exclusively done on innovation culture	(Innovat* Organi* Culture) AND ((Determinant*) OR (Factor*) OR (Element*))
4	Innovation Climate	To identify studies exclusively done on innovation climate that have references to factors of innovation culture	(Innovat* Organi* Climate) AND ((Determinant*) OR (Factor*) OR (Element*))
5	Measurement of Innovation Culture	To identify studies that discuss factors of innovation culture as part of the measurement/assessment of innovation culture	(Innovat* Organi* Culture) AND ((Measur*) OR (Diagnos*) OR (Tool*) OR (Instrument*))
6	Measurement of Innovation Climate	To identify studies that discuss factors of innovation culture as part of the measurement/assessment of innovation climate	(Innovat* Organi* Climate) AND ((Measur*) OR (Diagnos*) OR (Tool*) OR (Instrument*))

Note: *This is the search string developed for use with ABI/ProQuest. To improve the effectiveness of the search, various combinations of keywords were used for different databases but sticking to the search theme. Please refer to Table 11 (A 1-1.11) for details of how the search strings were adapted to the specific database searches.*

The initial pilot test searches, using the same search strings across all six databases, yielded 25,906 articles in total. The search strings were further refined based on nuances of searches across databases and a final set of search strings for six themes was finalised. Although there was repetition across the results for different search strings for the various combinations of

terms and various search databases[85] because of the way the search strings were developed, there was a reasonable degree of confidence that all possible combinations were addressed to make the search algorithm comprehensive. Using the refined search strings, 3,044 journal articles were found across the databases, 39% of which were eliminated because of repetition within databases and 23% because of repetition across databases, resulting in 1,436 articles for the next step of shortlisting and evaluating of the studies.

A.2.2 Step 2: Shortlisting and Evaluation of Studies

This was the second step of stage 2 and had a two-level filtering process after the use of the search terms developed above (see A.2.1 Step 1).

The first level filtering was a detailed review of Title and Abstract of the 1,436 articles derived above (in A.2.1) based on certain inclusion and exclusion criteria, such as type of industry, research domain, geographical region, etc. As advised by Petticrew and Roberts (2006), the inclusion and exclusion criteria were identified from a choice of studies guided by the review questions, the key theoretical considerations, the researcher's experience from searching the relevant journal articles as part of the scoping study, and carefully selected guidelines from other published systematic reviews (Kitchenham et al., 2008; Alves et.al., 2010; Okoli and Schabram, 2010). Please refer to Table 5 (A 1-1.5) and Table 6 (A 1-1.6) for details of inclusion and exclusion criteria respectively.

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[85] *The following search databases were used (numbers quoted here are those identified in March 2010): **ABI/Inform** – included 1,320 business and management publications; **EBSCO** – included 8,500 scholarly business journals which included 1,100 peer-reviewed publications; **Emerald** – is a world leading publisher of business and management journals; **Science Direct** – included 1,700 journals from Elsevier Science and 60 million abstracts in Social Sciences; **Social Sciences Citation Index** – served as a single route to Thompson Reuters' products; and **Wiley Inter-Science** – included 3 million articles across 1,400 journals.*

Table 5 (A 1-1.5): Criteria for inclusion of studies

No.	Criteria	Included Components	Reason for Inclusion
1	**Topic**	(1) Organizational culture/climate and innovation (2) Innovation culture, Innovation climate (3) Measurement of Innovation culture/climate	Published studies from organization culture/climate literature discussing links to innovation All published studies exclusively on innovation culture and climate Published studies on measurement of innovation culture and climate as they discuss factors of innovation culture/climate
2	**Field of Research**	Management, Psychology, Technology	Based on scoping study review, it was observed that the field of innovation culture falls under Management literature. However, Psychology and Technology also cover the topic of innovation culture and hence all three were included
3	**Time period**	Between 1965 and 2011	Based on the scoping study review and preliminary search carried out, the terms 'innovation culture' and 'innovation climate' as understood now are best represented in articles published after 1965
4	**Geographical region**	UK, Europe, US and other developing economies (India, Japan, China, Malaysia, Singapore, and Thailand)	Regions of the developed and developing world are included because globalization has led to the high adaptation of international management practices
5	**Industry**	Industries and sectors including Manufacturing, Insurance, Banking, Process Industry, Utilities, Software and IT Services, Retail and Consumer Goods, Telecom and Travel	Given that there are limited publications in this growing area of literature of innovation culture, it was deemed necessary to review as many contributions as possible
6	**Journal Type**	Academic journals	As with any research literature study, the primary source was academic peer-reviewed journals
7	**Journal Quality**	All peer-reviewed journals	All journals were included at this stage, given the volume of empirical studies in the area of innovation culture is low

Table 6 (A 1-1.6): Criteria for exclusion of studies

No.	Criteria	Excluded Components	Reason for Exclusion
1	**Topic**	Papers relating to general climate, weather, societal cultures, ecology, and environment and those that do not relate to the ones included in the inclusion criteria	Not related to the subject of research study, i.e., aspects such as only culture, climate and their measurement with no reference to innovation or innovation culture or creativity
2	**Field of Research**	Areas of enquiry other than Management, Psychology, Technology	Not related to the subject of the research study
3	**Time period**	Articles published before 1965	Relevant articles in innovation culture published before 1965 are limited and also have definitional incongruence with the current/contemporary research
4	**Geographical region**	Under-developed nations	Under-developed nations may have less mature management disciplines and may therefore not be consistent with management practices in either the developed nations or the developing nations
5	**Industry**	Educational institutions, Hotels and Police Departments	Educational institutions, hotels and police departments may not be very representative of corporate management practices
6	**Journal Type**	Sources other than academic peer-reviewed journals, such as working papers, PhD theses, conference proceedings	Level of rigour of methods and data analysis is generally considered to be lower than that of peer-reviewed journals
7	**Journal Quality**	No exclusions based on quality	A separate quality review would address this (Ref. Level 2 filtering)

This stage of filtering was undertaken in two iterations. First, an overall scan of the articles' titles and abstracts was undertaken. Of the 1,436 articles, 236 were not related to the topic of research (aspects such as environment, climate, people, societal culture, ecology, innovation in villages such as rural revolution, etc.), 312 were unrelated to the field/industry of research (education/schools, engineering, medical sciences including dentistry, nursing, hotels, police departments, religious institutions, etc.), 131 were editorial introductions, tutorials, working papers, etc., 92 were non-English language based, 52 were classified as related to the topic of research but *'Grey'* (non-peer-reviewed, to be explained later)[86], 314 were other non-

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[86] *These 52 Grey articles were separated out and have not been used at this stage under academic searches*

empirical sources such as essays, interviews, company cases, printed news, magazines, etc. All these were filtered out leaving 299, which were taken for very close examination of titles and abstracts using the inclusion criteria related to the core topic in focus (Okoli and Schabram, 2010), i.e., articles irrelevant to factors of innovation culture were filtered out using the following inclusion criteria:

- Published studies from organization culture/climate literature discussing links to innovation
- All published studies exclusively on innovation culture and climate
- Published studies on measurement of innovation culture and climate as they discuss factors of innovation culture/climate

At this stage, the 299 papers' titles and abstracts had the relevant keywords. Because of the lack of any current classification frame or keyword schema to discriminate papers specifically related to innovation culture, a close examination of the papers' abstract, introduction and conclusion was performed. A more tolerant view was taken here where the decision was made to include articles that were broadly related to the subject under study (e.g. Rouse, 2010), for example[87], articles that discussed determinants of innovation (e.g. Damanpour, 1991) also found their way into the next level of filtering process. This process resulted in 111 articles being selected for the next level of review; i.e., 188 articles, which initially appeared to be related but just had key terms, were filtered out through this process. The 111 thus shortlisted were called 'Group 1' articles.

The second level filtering was a 'Full Paper' review using a 'Quality Appraisal tool' in line with Tranfield et al.'s (2003) recommended process. A quality appraisal tool was created and employed to review the 111 articles based on the research guidelines from Petticrew and Roberts (2006) and Spencer et al. (2003). Please refer to Table 7 (A 1-1.7) for details. The relevant articles that scored at least 2 or more in all of the categories have been included in

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[87] *This included the following terms: leadership and innovation, perceptions of innovation support, determinants of innovation, organizational innovation, innovativeness of firms, innovation and creativity*

the final consideration set (Group 2). This was decided based on several rounds of application of the tool to samples of both theoretical and empirical papers: two theoretical papers (Ahmed, 1998; Martins and Terblanche, 2003) and two empirical papers (Judge et al., 1997; Jaskyte and Dressler, 2004) that consistently matched the citation search results. These four papers were widely cited, i.e., more than 20 citations. In the absence of any other source to confirm the use of the tool, this approach of depending on the broader knowledge of the scholars' acceptance of work has been used as a surrogate to validate the quality appraisal tool.

Table 7 (A 1-1.7): Quality Appraisal Tool

| No. | Quality Criteria | Quality Rating (adapted from Spencer et al. (2003) | | | |
		Low (1)	Medium (2)	High (3)	Others
1	**Literature Review and Theoretical Background**	Poorly covered literature landscape; limited theoretical insight	Basic coverage of literature landscape; Reasonably good theoretical background on which the arguments are based	Excellent coverage of literature landscape and theoretical background (including clear identification of a theoretical framework or one derived from the literature); demonstrates clear link between theory and research area	NA
2	**Methodological Rigour**	Poorly designed and executed with little explanation of methodology used Poor analysis and results are not explained clearly	Reasonably good link between theoretical argument and research design Acceptable data analysis and interpretation – discussion on empirical results are stand-alone, but have some references to existing literature, if not detailed	Clear link between theoretical foundation and the methodology used All data collection and analysis processes are well documented and there is auditability Excellent use of data in terms of in-depth discussion on empirical results that can confirm/reject existing evidence or have completely new findings	NA
3	**Consistency and Quality of Argument**	Flaws are clearly evident in the argument – may be oversimplified or over generalized	Reasonably convincing and is consistent – clear how theoretical basis is used	Very clear and compelling flow of arguments. Can see a link between findings and the original research purpose Discussion/evidence of the main assumptions/ hypotheses/theoretical ideas on which the evaluation was based and how these affected the form, coverage or output of the evaluation Conclusions are well supported with data and other empirical findings/arguments	NA
4	**Contribution to knowledge**	Does not make any important contribution, contribution not mentioned in the paper or the contribution is not clearly positioned and hence not convincing	Builds upon existing theory and the contribution is appropriately positioned in the existing body of literature	Contributes further to developing existing knowledge and clear areas of future research/ hypotheses/propositions are identified	NA

This process of shortlisting resulted in 59 articles, which were then subjected to *Cross Referencing* – a deliberate detour in the process – involving a review of the reference sections of the 59 'Group 2' articles to identify if there are any other important articles not uncovered, circumventing the limitation of electronic database searches (McManus et al., 1998). This process produced 19 articles. However, the 19 were subjected to the same Level 1 and 2 filtering resulting in 58. This resulted in shortlisting 9 articles of the 19, totalling a final 67 [58+9] 'Group 2' (academic) articles. For a summary of details of the shortlisting as presented above, please refer to Table 8 (A 1-1.8).

Table 8 (A 1-1.8): Initial search and the two-level filtering process for academic articles

Step	Action taken	Sample
Initial search (with the refined search algorithm	An initial search across databases was performed	3,044 articles found
	Repetition within databases was checked with the help of RefWorks	39% eliminated, leaving 1,857
	Repetition across databases was checked with the help of RefWorks	23% eliminated, leaving 1,436
Level 1 Filtering: The Title and Abstract Search	Reviewed titles and abstracts against the inclusion and exclusion criteria	1,085 were not relevant to the topic (iteration 1) 188 were identified as having the keywords but the papers themselves were not relevant to the topic (iteration 2) 52 were categorized as 'Grey' literature (to be discussed later; this was because some databases did not have the option of selecting peer-reviewed journals) 1,325 articles were eliminated at this stage resulting in 111 articles. These 111 were called 'Group 1' articles
Level 2 Filtering: Full Paper Quality Review	A full paper quality review of 111 'Group 1' articles was undertaken

This was followed by cross-referencing checks of the reference sections of the 59 'Group 2' articles to capture any further relevant journal articles | 58 articles were shortlisted and were called 'Group 2' articles (i.e., 53 were eliminated at this stage)

19 articles were identified as part of the cross-referencing process. These were put through the level 1 & 2 filtering processes. 9 articles were finally selected to be then added to produce a final set of 67 (58+9) 'Group 2' articles |

Further, since innovation culture is an emerging area of enquiry and has been observed from a broad level review of the developments in the industry, the academic literature is not fully

reflective of the developments in the area of innovation culture in practice. For example, some insights into the relevance and importance of diversity for innovation were published by Ernst & Young (2010); other aspects such as empowerment, freedom and flexibility, and experimentation were presented as part of a case study at MIT 2008 (Kelly, 2008). Therefore, this research work has given consideration to the various possible sources of information on innovation culture in the industry. In discussions with the researcher's supervisors, a decision was made to include some of the very relevant *Grey Literature*. Pettigrew and Roberts (2006) define non-peer-reviewed journals/material as *'Grey'* literature, which is not obtainable through normal publishing channels, but includes reports published independently by academic and non-academic organizations – such as working papers, occasional papers, reports on websites, and informal publications in short print runs, which are not necessarily widely distributed. Other researchers (Simkhada et al., 2004) have clearly distinguished *'Grey'* literature as any literature that is not published in academic peer-reviewed journals and available through indexed databases for review. In any case, for this research it has been maintained that academic literature was considered to be only peer-reviewed journal articles.

Although it would be a big challenge to narrow down the search, Grey literature was still included in the scope of the systematic review. Therefore, in line with the basic premise of systematic reviews of an audit trail in the review process to ensure clarity and replicability (Tranfield et al., 2003), attempts were made to document the process followed here too, to ensure the replicability of the process to a reasonable degree. Because the Internet is a vast source of information, specific areas have been targeted such as Amazon.com and Google Books for books on innovation, Market Research websites for free published research reports, and B-school journals, etc. See Table 9 (A 1-1.9) for specific details of the primary source, search strings used, and the rationale for selection of the source.

Table 9 (A 1-1.9): Practitioner Literature – Areas of Search

No.	Key Areas of Search	Primary Source and Search String Used	Rationale
1	Databases (incl. Practitioner Journals, Working papers, conference proceedings, PhD theses)	Indexed database search (This includes the 52 articles identified as Grey, but relevant)	These are practitioner journal articles (non-peer-reviewed journals) that are current and also describe aspects concerning innovation culture
2	Books	Amazon.com, Barnes and Noble.com and Google Books *Website search string:* "Innovation Culture", "Culture of Innovation"	Books provide a comprehensive level of information on this subject drawing on both practice and theory
4	Market Research/ Analyst Firms	Datamonitor IDC- International Data Corporation Forrester Research Frost & Sullivan Gartner Group Gopi IBIS World Euromonitor *Website search using*: "Innovation Culture", "Culture of Innovation"	Market Research Groups provide a consolidation of views of existing trends and practices. This includes independent surveys and analyses carried out by them (research from firms that are widely reputed for industry research)
5	B-School Journals	London Business School INSEAD IMD MIT Sloan Wharton Harvard Business Review *Individual website search* using "Innovation Culture", "Culture of Innovation"	B-School journals capture the recent trends and practices based both on empirical work and conceptual theorising (top 10 B-School journals - Financial Times/Business Week and Wall Street Journal B-School Rankings)
6	Management and/or Innovation Consultancies	Top 10 Management Consultancies – these include McKinsey, BCG, Deloitte, IBM, Accenture, Arthur D Little and Ernest Young (EY), Capgemini *Individual website search:* "Innovation Culture", "Culture of Innovation" with the names of the identified companies	Research from top management consulting firms is generally undertaken with rigour and can potentially highlight key insights on innovation culture
7	Government Research	Governments of various countries in the US, UK and Europe Internet search using terms such as "UK Government Research", "US Government Research", and "European International Research"	Governments of developed nations are actively involved in various innovation initiatives (published by very large sized government research funded groups)

The initial search resulted in hundreds of articles/books because of the way the search engines are built, given their amenability to the broad search terms used. At this stage a broad level title search was undertaken to eliminate large numbers. There were 112 books, 347 articles from B-school website searches, 12 articles from industry research searches, and 4 from government research searches. So a title search was undertaken and the titles' relevance was assessed based on the content of their abstracts[88]. A total of 527 articles were obtained at this stage (this number includes the 52 articles from the Grey literature).

The shortlisting and review of Grey literature was carried out as a two-level process, similar to that used for the academic literature shortlisting. Please refer to details given in Table 10 (A 1-1.10). A level 1 filtering process, using the same criteria as listed in Tables 5 (inclusion criteria) and 6 (exclusion criteria) with a slight modification to items numbered 3 (i.e., published material after 1995 was considered assuming that the material prior to 1995 would have been factored into academic publishing) and 6 (i.e., the search includes practitioner journals, working papers, conference proceedings, books, market research, innovation consultancy, B-school journals and government sponsored research). 39 'Grey Group 1' articles/books were shortlisted.

Table 10 (A 1-1.10): A two level filtering process for Grey literature

Step	Action taken	Sample
Initial search	No search performed on indexed databases exclusively for this purpose (the list of 52 Grey articles was identified from academic searches performed above)	52 Grey literature articles found from indexed database search (from previous academic search) 31 book titles were identified across Amazon, Barnes and Noble and Google books 17 articles from top B-School journals 3 articles from industry research, which required payment 2 government research articles were found (a total of 105 articles)
Level 1 Filtering: The Abstract Search using inclusion and exclusion criteria presented in Tables 5 and 6 with	Reviewed titles and abstracts against the inclusion and exclusion criteria	22 articles were shortlisted from indexed database search 9 books were shortlisted 7 research articles from B-school journals were shortlisted

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[88] *This was undertaken very carefully based on the systematic review questions in mind, specifically looking for any outliers i.e., areas that have not been discussed in the academic research*

necessary modifications for grey literature		0 articles from industry research were shortlisted 1 UK government research article was shortlisted Altogether 39 "Grey Group 1" articles/ books, etc. were identified at this stage
Level 2 Filtering: Full Paper Quality Review	A full quality review of 39 'Grey Group 1' articles/books was undertaken This was followed by cross-referencing checks of the reference sections of the 4 articles	3 articles from the indexed database search were finally shortlisted; no further articles identified through cross-referencing 2 books, 1 research from EY, and 1 UK government research were finally shortlisted as 'Grey Group 2' articles/books

These 39 were then passed through the next level of shortlisting (level 2) using the same set of quality appraisal criteria (see Table 7, A 1-1.7) as that used for academic literature, but with slight modifications. To be included in the final consideration set, the Grey literature articles needed to score at least 2 on items numbered 3 (consistency and quality of argument) and 4 (future research/contribution to knowledge), but needed a score of only 1 for items numbered 1 (literature review) and 2 (methodological rigour). This has been done because from the review of the Grey literature articles, items 1 and 2 of Table 7 are not generally documented well, given that they are non-academic. However, because the results are important to this research this change has been affected. A total of 7 (i.e., 3 practitioner articles, 2 books, 1 management consultancy research and 1 government research) were shortlisted from the 39.

A detailed summary of the shortlisting undertaken across databases is presented in Figure 1 (A 1-1.1) and Table 11 (A 1-1.11). Further, details specific to the searches and the changes made to the strings to suit the behaviour of the specific databases are documented in Table 12 (A 1-1.12).

| ABI/ Inform | EBSCO | Emerald | Science Direct | Social Science Citation Index | Wiley Inter-science | | Indexed Databases (Limited) | Books | Innovation/ Management Consultancies | Government/ Industry Research |

3,044

Refinement (elimination of repetitions)
Eliminated 39% internal repetitions (1,857)*
Eliminated 23% across repetition (1,436)

527

Refinement (elimination using title search)
31 books, 17 B-school articles , 3 industry research, 2 government research (52 grey articles from index databases included)

1,436

Level 1 Filtering (using inclusion and exclusion criteria)

105

Filtering – Iteration 1 (299)
1137 or 79.2% eliminated from 1,436 (i.e., 312 – Unrelated to the field/industry, 236 – unrelated to the topic, 131 conference proceedings, working papers etc., 314 other non-empirical sources, 92 non-English language based and 52 identified as relevant but Grey)

Filtering – Iteration 2 (111)
188 or 62.9% eliminated from 299 (i.e., 188 – have keywords but not directly related to the topic)

Level 1 Filtering (using inclusion and exclusion criteria) (39)
66 or 62.9% eliminated from 105

39

111

Level 2 Filtering (Full paper using quality criteria) (58)
47.8% eliminated (i.e., 53 papers did not match the quality criteria)
Cross-referencing (9) (i.e., of the 19 papers that emerged and subjected to L1 and L2, 9 were shortlisted and added to 58)

Level 2 Filtering (Full paper using quality criteria) (7)
32 or 82% eliminated from 39

67 academic papers

7 Grey literature

The final Consideration Set is 74 papers

Numbers in yellow indicate totals after shortlisting

Figure 1 (A 1-1.1): Summary of Systematic Review filtering process

Table 10 (A 1-1.10): Shortlisting of journal articles

No.	Themes	ABI Global – Title Search Results	Elimination of Overlaps	Separated out as 'Grey'	Final L1 subjected to L2	Full Paper Review L2	Papers identified by Cross-Referencing After L2	Cross-Referenced Papers Post L1 & L2	Final Post L2	EBSCO – Title Search Results	Elim. of Overlaps	Sep. as 'Grey'	Final L1 → L2	Full Paper Review L2	Papers id. Cross-Ref After L2	Cross-Ref Papers Post L1 & L2	Final Post L2	Science Direct – Title Search Results	Elim. of Overlaps	Sep. as 'Grey'	Final L1 → L2	Full Paper Review L2	Papers id. Cross-Ref After L2	Cross-Ref Papers Post L1 & L2	Final Post L2	Wiley Inter-Science – Title Search Results	Elim. of Overlaps	Sep. as 'Grey'	Final L1 → L2	Full Paper Review L2	Papers id. Cross-Ref After L2	Cross-Ref Papers Post L1 & L2	Final Post L2	Emerald – Title Search Results	Elim. of Overlaps	Sep. as 'Grey'	Final L1 → L2	Full Paper Review L2	Papers id. Cross-Ref After L2	Cross-Ref Papers Post L1 & L2	Final Post L2	SSCI (Web of Science) – Title Search Results	Elim. of Overlaps	Sep. as 'Grey'	Final L1 → L2	Full Paper Review L2	Papers id. Cross-Ref After L2	Cross-Ref Papers Post L1 & L2	Final L2 subjected to L3	Total	% Overlap removed
1	Organizational Culture and factors related to innovation	43		1	19	14				45		2	12	4				145		0	2	1				216		3	6	3				91		4	10	4				76		11	5	1					
2	Organizational Climate and factors related to innovation	13		0	1	1				22		2	5	1				59		0	1	1				106		0	3	1				117		0	0	0				41		5	4	0					
3	Innovation Culture	187		14	7	2				191		0	1	1				41		0	0	0				59		0	1	1				192		0	1	1				81		2	0	0					
4	Innovation Climate	67		3	14	8				52		0	0	0				22		0	0	0				32		0	1	0				29		0	0	0				38		0	1	1					
5	Measurement of Innovation Culture	122		2	6	5				212		0	1	0				53		0	0	0				122		0	0	0				169		1	0	0				12		0	1	1					
6	Measurement of Innovation Climate	62		1	4	3				146		0	1	1				61		0	0	0				86		1	1	1				24		0	3	2				10		0	0	0					
		494	41% overlap within, 28% across databases	21	51	33	14	5	38	668	57% overlap within, 28% across databases	4	20	7	0	0	7	381	36% overlap within, 28% across databases	0	3	2	0	0	2	621	29% overlap within, 28% across databases	4	12	6	1	1	7	622	37% overlap within, 28% across databases	5	14	7	4	1	8	258	22% overlap within, 28% across databases	18	11	3	0	0	3		

Summary (Stages of shortlisting)

Stage	Description	ABI	EBSCO	Science Direct	Wiley	Emerald	SSCI	Total	% Overlap removed
Initial Search	Total from title search	494	668	381	621	622	258	3044	100%
Initial Search	Total after accounting for overlap within each database	291	287	244	441	392	201	1857	39%
Initial Search	Total after accounting for overlap across databases (A)	213	193	191	358	327	154	1436	23%
Level 1: Abstract and Title Search	Total number eliminated through relevance check using inclusion and exclusion criteria (Itertaion 1) (B) — *Of the 1,436 articles, 236 articles were not related to the topic of research (aspects such environment, climate, people societal culture, ecology, innovation in villages as rural revolution, etc.), 312 were from unrelated to the field/industry of research (education/schools, engineering, medical sciences including dentistry, nursing, hotels, police departments, religious institutions, etc.), 131 editorial introductions, tutorials, working papers, etc., 92 are non-English language based. 314 were other non-empirical sources such as essays, interviews, company cases, printed news, magazines, etc.*							1085	
Level 1: Abstract and Title Search	Total 'Grey' separated or eliminated (Itertaion 1) (C)	21	4	0	4	5	18	52	
Level 1: Abstract and Title Search	Total after accounting for non-relevant articles from L1 (Iteration 1) (A-B-C)							299	
Level 1: Abstract and Title Search	Total after accounting for articles with related key words but not directly related to topic L1 (Iteration 2) - Group 1	51	20	3	12	14	11	111	
Level 2: Quality Review	Total after putting L1 articles through L2 (Group 2)	33	7	2	6	7	3	58	
Level 2: Quality Review	Total artitcles from cross-referencing (post L1&L2)	5	0	2	1	1	0	9	
Level 2: Quality Review	Final total - Academic							67	
Level 2: Quality Review	Total after putting 52 Grey articles through L2							7	
Level 2: Quality Review	Total consideration set post L2							74	

The following key points are noteworthy with respect to searches:

1. There was a high level of overlap across the six themes within each database. It was deliberately decided to continue to have the six themes so as not to miss any critical articles. Elimination of the duplicates was easy and was done in RefWorks

2. Likewise, it was easy to eliminate all overlaps across databases in RefWorks

3. Some of the databases (e.g. EBSCO, ABI/ProQuest) did not have a search by subject area and hence there were quite a number of results that came back

4. In Table 10 (A 1-1.10), the numbers listed under "Selected from Titles & Abstracts L1" are those that were arrived at after accounting for both within and across database overlaps

5. Search strings were altered across databases but the link to the core themes was maintained. This alteration was required because of the way the search engines are built. Prudence was exercised in making this decision based on the type of results and the number of results were returned as part of the pilot searches

6. Search criteria for filters also slightly varied across databases. This again (as was the case with point 5 above) was to make sure the search results returned were close to the topic of the research study and there were not too many results to make sifting through them difficult

Table 11 (A 1-1.11): Adaptations of search strings to the behaviour of individual databases

Search Dates: 10/01/2011 to 21/01/2011	ABI/ ProQuest	EBSCO	Science Direct	Wiley Inter Science	Emerald (Abstract Search)	SSCI (Web of Science)
Protocol 1	(Organi* Culture) AND (Innovat*)	(Organi* Culture) AND ((Organi* Innovat*) OR (Manag* Innovat*) OR (Creativ*) OR (Invent*))	(Organi* Culture) AND (Innovat*)	(Organi* Culture) AND (Innovat*)	(Organi* Culture) AND ((Innovat*) OR OR (Creativ*) OR (Invent*))	((Organisation Culture) OR (Organization Culture)) AND (Innovation)
Protocol 2	(Organi* Climate) AND (Innovat*)	(Organi* Climate) AND ((Organi* Innovat*) OR (Manag* Innovat*) OR (Creativ*) OR (Invent*))	(Organi* Climate) AND (Innovat*)	(Organi* Climate) AND (Innovat*)	(Organi* Climate) AND ((Innovat*) OR OR (Creativ*) OR (Invent*))	((Organisation Climate) OR (Organization Climate)) AND (Innovation)
Protocol 3	(Innovat* Organi* Culture) AND ((Determinant*) OR (Factor*) OR (Element*))	(Innovat* Organi* Culture) OR (Culture of innovat*)	(Innovat* Organi* Culture) AND ((Determinant*) OR (Factor*) OR (Element*))	(Innovat* Organi* Culture) AND ((Determinant*) OR (Factor*) OR (Element*))	(Innovat* Organi* Culture) AND ((Determinant*) OR (Factor*) OR (Element*))	(Innovation Culture) AND ((Determinant) OR (Factor) OR (Element))
Protocol 4	(Innovat* Organi* Climate) AND ((Determinant*) OR (Factor*) OR (Element*))	(Innovat* Organi* Climate) OR (Climate of innovat*)	(Innovat* Organi* Climate) AND ((Determinant*) OR (Factor*) OR (Element*))	(Innovat* Organi* Climate) AND ((Determinant*) OR (Factor*) OR (Element*))	(Innovat* Organi* Climate) AND ((Determinant*) OR (Factor*) OR (Element*))	(Innovation Climate) AND ((Determinant) OR (Factor) OR (Element))
Protocol 5	(Innovat* Organi* Culture) AND ((Measur*) OR (Diagnos*) OR (Tool*) OR (Instrument*))	(Innovat* and Organi* and Culture) and ((Measur*) OR (Diagnos*) OR (Tool*) OR (Instrument*))	(Innovat* Culture) AND ((Measur*) OR (Diagnos*) OR (Tool*) OR (Instrument*))	(Innovat* Culture) AND ((Measur*) OR (Diagnos*) OR (Tool*) OR (Instrument*))	(Innovat* Organi* Culture) AND ((Measur*) OR (Diagnos*) OR (Tool*) OR (Instrument*))	(Innovation Culture) AND ((Measure*) OR (Diagnosis) OR (Tool) OR (Instrument))
Protocol 6	(Innovat* Organi* Climate) AND ((Measur*) OR (Diagnos*) OR (Tool*) OR (Instrument*))	(Innovat* and Organi* and Climate) and (Measur*) OR (Diagnos*) OR (Tool*) OR (Instrument*))	(Innovat* Climate) AND ((Measur*) OR (Diagnos*) OR (Tool*) OR (Instrument*))	(Innovat* Climate) AND ((Measur*) OR (Diagnos*) OR (Tool*) OR (Instrument*))	(Innovat* Organi* Climate) AND ((Measur*) OR (Diagnos*) OR (Tool*) OR (Instrument*))	(Innovation Climate) AND ((Measure*) OR (Diagnosis) OR (Tool) OR (Instrument))
Criteria applied	Scholarly journals, date range and language, (title and/ or abstract search to refine results), Searched for "full text" in case of Protocol 5 and 6	Only title search, selected "All Articles". There was no option to use AND operator. Included Abstracts for Protcols 5 and 6 to increase results	Journals, Business, Management, Accounting, Psychology, Social Sciences, date range and abstract search	Abstract search, Journals, and data range	Keyword search for protocol 1 Abstract search for Protocols 2,3,4, 5 and 6 and date range	Title search, Science Technology, Social Sciences Other Topics, Web of Science Core Collection, Business Economy, Psychology, Public Admin, Operations Research, Science Technology Other topics, Cultural studies For Protocol 3,4: Topic chosen was "Innovation Culture"
Link	https://extranet.cranfield.ac.uk:11000/abicomplete/advanced?accountid=10297	http://ejournals.ebsco.com/ArticleSearch-Criteria.asp	http://www.sciencedirect.com/science/search	http://onlinelibrary.wiley.com/advanced/search	http://www.emeraldinsight.com/search/advanced	http://apps.webofknowledge.com/UA_GeneralSearch_input.do?product=UA&search_mode=GeneralSearch&SID=W1LoyhqQOniFQY49K5z&preferencesSaved=

A.3 Stage 3: Extracting and Synthesizing Data

This stage involved two steps: conducting data extraction and conducting data synthesis.

The first step is the extraction of data from the 74 papers in the consideration set to identify the factors of innovation culture. To this end, a coding frame was developed. To test the form, an initial 15% of the articles were coded independently and coding results were compared by two researchers[89] (Kitchenham, 2007), leading to a few small changes to the coding form. This form (please refer to Table 12[90], A 1-1.12) codified the following four dimensions: (a) research topics, (b) research summary, (c) research findings, and (d) practical outcomes. In addition, general information such as article reference, year of publication, date of coding, geographical area, domain of research, type of research – theoretical/empirical) typically extracted in systematic literature reviews (Okoli & Schabram, 2010) was also extracted.

With regard to the first of the four dimensions, 'research topics', an initial review of the papers helped to identify research topic areas from which factors of culture for innovation were derived. The researcher identified four main areas: (i) factors that are specifically culture related and published as such (e.g. Feldman, 1988; Eckermann et al., 2003), (ii) factors that are relevant to both culture and climate and have links with innovation (e.g. Nanda & Singh, 2009), (iii) factors that are climate related but links are provided to culture and innovation (e.g. Saleh & Wang, 1993; Tesluk et al., 1997) (iv) factors from innovation culture instruments (e.g. Dobni, 2008) or from culture instruments that highlight areas that impact on innovation (e.g. Cameron & Quinn, 1999). This was done to understand generally what types of studies the factors of innovation culture come from. A provision was made in the coding form to capture other areas that could potentially relate to culture and innovation. The second dimension was around summarizing the research study, thus providing an overview of the study, its main purpose and the key aspects discussed. The third dimension

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[89] *The main researcher and a fellow research student at Cranfield School of Management (in year 2011) in the area of finance*
[90] *For want of space, only examples of three papers have been presented here. Full details are embedded in the document towards the end of Section A.3.*

was research findings and how knowledge could be gleaned from the research findings. For each article in the consideration set, the main findings were recorded in terms of their relevance to the factors of innovation culture. This was required in order to undertake synthesis of the data effectively. The fourth dimension was the practical outcomes the study generated in terms of the impact of the factors of culture on outcomes related to innovation (e.g. performance of innovation, technological innovation, company performance, product innovation, etc.). This was important in order to indicate the strength of empirical evidence of factors of innovation culture. The extraction of data relating to factors of innovation culture was centred on the key assumption that the main outcome of all the factors of culture is innovation. The data for practical outcomes were extracted directly from the recommendations/implications section often presented in research papers. Following Smith et al.'s (2008) technique, quotes were allocated to factors of innovation culture. These quotes were compared and analysed as part of the data synthesis activity.

Table 12 (A 1-1.12): Data extraction (Sample)

No	Code	Reference	Year	Geographical area	Domain of Research	Journal Name	Type of Innovation	Type of Research (Empirical/ Theoretical)	Predefined	Unit of Analysis	Type of organization	Validity	Research Summary
1	ABI 1	Ahmed, P. K. (1998), "Culture and climate for innovation", European Journal of Innovation Management, vol. 1, no. 1, pp. 30.	1998	UK	Not Applicable	European Journal of Innovation Management	Not specified	Theoretical		Not applicable	Not applicable		- Ahmed (1998) explains aspects associated with both culture and climate necessary for innovation within organizations. Ahmed (1998) explores the literature associated with organizational effectiveness and quotes a number of authors such as Denison and Mishra (1995), Deshpande et al. (1993), Ekvall (1993) (cited in Ahmed, 1998) who carried out extensive research to establish that cultural traits have an effect on organizational effectiveness.
- Elaborating conceptually how cultural norms affect innovation, Ahmed (1998) draws on the work carried out in this area by other researchers (Andrew, 1996;Filipczak, 1997; Judge et al., 1997; O'Reilly, 1989; Picken and Dess, 1997; Pinchot and Pinchot, 1996; Schneider et al., 1996; Warner et al., 1997 cited in Ahmed, 1998). He identifies the norms that promote innovation within organizations as discussed in the findings section.
- Talked about Deshpande et al.'s work on link between culture types and innovativeness. Culture types include: market culture, adhocracy culture, clan culture and hierarchical culture. A certain variety of cultures are more able to enhance innovativeness than other types. Market and adhocracy cultures score highly for high performance companies, exhibiting a statistically significant relationship.

No	Code	Reference	Main findings (according to the data in the topic columns)	Other findings	Independent Variable	Dependent Variable	Mediatory Variable	Outcome	Implications for culture of innovation	Innovation Culture Tool Used	Factors (quotes) Noted '+' for positive influence and '-' for negative one
1	ABI 1	Ahmed, P. K. (1998), "Culture and climate for innovation", European Journal of Innovation Management, vol. 1, no. 1, pp. 30.	- Challenge and belief in action, "Freedom and risk taking"; "Dynamism and future orientation"; "Customer orientation"; "Trust and openness"; "Open communication"; "Acceptance of critique"; "Cross-functional interaction and freedom"; "Myths and stories"; "Leadership's commitment"; Empowerment"; "Awards and rewards"; "Innovation time and training"; "organizational structure – autonomy and flexibility" "Corporate identification and unity"; "corporate vision and mission statements"
- The importance of "organic structures for innovation and the mechanistic structures hinder innovation"
- "Balanced Autonomy" - combining strategic (freedom to set one's own agenda) and operational autonomy (freedom to attack a problem once it has been set by the organization)
b) Personalised recognition - extrinsic and intrinsic (importance of intrinsic rewards over extrinsic rewards is stressed but extrinsic rewards to a bare minimum such as salary need to be in place)
c) Integrated socio-technical system (technical as well as social side of innovation) - how people of the right blend are recruited
d) "Continuity of Slack - time and space for innovative activties"					Climate for innovation	Ahmed stresses the importance of alignment between implicit (deeper structures) and explicit cultures (visible practices or climate) and the match between the two for sustained innovation.		+ Risk taking [T, Freedom and Risk-taking];
+ Participative safety [T, trust and openness];
+ Stories and myths [T, Myths and Stories]
+ Empowerment [T, Empowerment; Balanced autonomy; Freedom to solve problems]
+ Rewards and recognition [T, Awards & rewards]
+ Client focus [T, Client orientation]
+ Innovation vision, Mission and Strategy
+ Leadership support and commitment
+ Slack resources [T, Continuity of slack]
+ Openness to feedback and change [Acceptance of critique]
+ Open communication
+ Collaboration [T, Cross-functional interactions]
+ Employee fit [socio-technical systems]
+ Talent and Creativity [T, personality traits]

		Article Reference		General information						Research Topic & Design				
No	Code	Reference	Year	Geographical area	Domain of Research	Journal Name	Type of Innovation	Type of Research (Empirical/ Theoretical)		Predefined	Unit of Analysis	Type of organization	Validity	Research Summary
2	ABI 5	Claver, E., Llopis, J., Garcia, D. and Molina, H. (1998), "Organizational culture for innovation and new technological behavior", Journal of High Technology Management Research, vol. 9, no. 1, pp. 55.	1998	Spain (Europe)	Not Applicable	Journal of High Technology Management Research	Technological	Theoretical		Culture of innovation	Not applicable			- The authors highlight the importance of people. They mark the trend towards thinking about the people side of the equation of innovation. - They highlight the importance of technological innovation by enumerating their characteristics and the importance of corporate culture for shared behaviour to encourage innovation. Technological innovation, they explain, needs strong people side of things given the following: it requires setting ideas in motion, adaptation of technology requires familiarity with it, need for taking risks, and change needs focusing on continuous processes in which decisions have to be frequently made on new technology and how to apply it; all these highlight the strong element of people involvement for technology innovation. - They argue that technological innovation is based on the interaction of several factors (an innovative culture, a culture based on technology, and CEOs' acceptance, who can act as a stimulus and transmission of these beliefs) - But they argue that there are some general characteristics from a typical culture based on technological innovation as described in the section on findings

		Article Reference	Research Findings		Practical outcome					Data Synthesis	
No	Code	Reference	Main findings (according to the data in the topic columns)	Other findings	Influence relationships			Outcome	Implications for culture of innovation	Innovation Culture Tool Used	Factors (quotes) Noted '+' for positive influence and '-' for negative one
					Independent Variable	Dependent Variable	Mediatory Variable				
2	ABI 5	Claver, E., Llopis, J., Garcia, D. and Molina, H. (1998), "Organizational culture for innovation and new technological behavior", Journal of High Technology Management Research, vol. 9, no. 1, pp. 55.	- R&D Values: "experimentation", "creativity", and emphasis on quality of ideas, "creative people" "have support and stimulus of the corporation" - HRM: "constant learning", "team work", "autonomy and initiative" - "Process of decision making": speed, shared responsibility, important decisions are made gradually - "Market Orientation: satisfaction of customer needs" - "Organizational Structure: decentralized, change orientation, informal environment, and systematic thinking" - "Customer focus" in addition to technological innovation - Allow a considerable "degree of flexibility and autonomy" to the individuals of an organization - "Team work" through daily rules and customs - Importance of "process of generating ideas and managing associated change" as an essential element of innovative culture.					Technology Innovation			+ Risk taking [T, experimentation], + Talent & Creativity [T, emphasis on quality of ideas; creative people; + Leadership support and commitment [T, have support and stimulus of the corporation] + Learning and Development [T, constant learning] + Empowerment [T, autonomy and initiative; degree of flexibility and autonomy] + Quicker decision-making [T, Process of decision making] + Customer focus [T, Market Orientation: satisfaction of customer needs; customer focus] + Flexible Organizational Structure [T, decentralized] + Workgroup support [T, team work through daily rules and customs] + Innovation process [T, process of generating ideas and managing associated change]

		Article Reference		General information					Research Topic & Design				Research Summary
No	Code	Reference	Year	Geographical area	Domain of Research	Journal Name	Type of Innovation	Type of Research (Empirical/ Theoretical)	Predefined	Unit of Analysis	Type of organization	Validity	
3	ABI 7	Dombrowski, C., Kim, J. Y., Desouza, K. C. and Braganza, A. (2007), "Elements of innovative cultures", Knowledge and Process Management, vol. 14, no. 3, pp. 190.	2007	Global (USA, UK, Slovenia)	Mixed	Knowledge and Process Management	Not specific	Empirical	Culture of innovation	Organization	Large		- The authors have identified eight elements of innovation culture. They discuss these eight elements and conclude that all eight are important - The eight attributes are: innovative mission and vision statements, democratic lateral communication, safe spaces (skunk works or R&D groups), flexibility of moving across teams, collaboration, boundary spanning (spanning interdepartmental boundaries and leveraging external networks), incentives, and leadership - They concluded that none of the eight elements when practised in isolation is useful. They advocate that companies need to examine the various elements to the degree they are relevant and use them. - The authors suggest that industry domain, nature of competition, products and services portfolio etc. need to be factored in to understand the applicability of each of the eight elements.

		Article Reference	Research Findings		Practical outcome					Data Synthesis	
					Influence relationships						Factors (quotes)
No	Code	Reference	Main findings (according to the data in the topic columns)	Other findings	Independent Variable	Dependent Variable	Mediatory Variable	Outcome	Implications for culture of innovation	Innovation Culture Tool Used	Noted '+' for positive influence and '-' for negative one
3	ABI 7	Dombrowski, C., Kim, J. Y., Desouza, K. C. and Braganza, A. (2007), "Elements of innovative cultures", Knowledge and Process Management, vol. 14, no. 3, pp. 190.	- "Vision and Mission": are the directives that bring together employees, work practices, and the whole being of the organization - "Democratic, lateral communication": when employees are encouraged to participate in decision-making and problem resolution, they feel "empowered" to take on additional roles. Later communication, whether "ICTs" (Information Communication Technologies) or in person, squelches power blockages - "Safe Spaces": Organizations need to have well-funded areas such as skunk works, long-standing R&D groups, or fast venturing" - "Flexibility": primarily refers to job rotation (incremental innovation is encouraged) but also refers to encouraging strong social networking in and outside the organization, incrementally focused cultures to acquisition-based, Pac-Man type of cultures, and even include problem-centred networks. Allowing employees to advocate for their ideas is a kind of "flexibility" - "Boundary spanning" could be considered from both within the organization (sustainable structures at both firm and sub-unit level) and across organizations perspectives. The authors suggest that the greatest artefact of importance for this attribute is "language". Language is the lowest common denominator that enables people to pass messages across boundaries, communicate, etc. - Collaboration: "Sharing" and "teaching" among and across business units and alliances can be an effective way of promoting collaborative innovation, if business culture emphasizes "learning" already.								+Innovation vision, mission and strategy [Vision and Mission] + Empowerment [E, Empowered] + Open communication [E, "Democratic, lateral communication] + Tools for innovation [E, ICTs (Information Communication Technologies)] + Safe Spaces [E, Safe Spaces] + Job rotation [E, Flexibility] + Networking and boundary spanning [E, Boundary spanning] + Collaboration [E, Collaboration] + Learning & development [E, Sharing; teaching; learning] + Participative safety [E, trust]

The second step was synthesis of data extracted from the papers in the consideration set. All the data extracted from the coding form were reviewed several times to come up with a list of factors of innovation culture. All the factors extracted from the data (which were allocated as quotes) that meant similar things but were stated using different words in the actual research study (understood in the context in which they were mentioned) were coded into a single factor. For example, factors such as "empowerment", "balanced autonomy", "freedom to solve problems" (Ahmed, 1998) and "autonomy and initiative", "degree of flexibility and autonomy" (Claver et al., 1998) which reflected similar ideas of empowering people, were coded into one single factor called 'Empowerment and Autonomy'. These single factors were then summarized in another spreadsheet to assess and shortlist the most important factors of innovation culture. To evaluate the strength of evidence (in this case it is the number of authors, as the papers have already gone through a detailed process of shortlisting), the collective wisdom of authors has been taken as an important parameter to shortlist: in order to be a key factor, the factor needs to come from at least one empirical paper, which needs to be supported by a one theoretical or one empirical paper (i.e., factors coming from only theoretical papers have not been considered). Please refer to Table 13 (A 1-1.13) for the full list of 27 factors shortlisted from a total number of 38 factors identified from the systematic review of the literature (see the full list in the below attachment, Tab '2.0 Full list of Factors').

Full data extraction sheet:

📎

Table 13 (A 1-1.13): Summary of Factors of Innovation Culture and their Supporting (or non-supporting) References

No.	Code	Factors	Empirical Evidence (References)					Theoretical References	Strength of Evidence				Selection Yes/No	Comments
			Positive Impact			Negative Impact	No impact		Positive	Negative	No Impact	Theoretical		
			Very Strong Evidence	Strong Evidence	Weak Evidence									
1	KFL1	Client Focus		Jamrog et al. (2006)	Archer & Walczyk (2006)			Ahmed (1998)	2	0		1	Yes	
				Dobni (2008)										
2	KFL2	Collaboration		Dombrowski et al. (2007)		Jaskyte & Dressler (2005)		Martins and Terblanche (2003)	7	1	0	4	Yes	
				Lemon & Sahota (2004)				Bessant (2003)						
				McAdam et al. (2010)				Ahmed (1998)						
				Zdunczyk & Blenkinsopp (2007)				Hauser (1998)						
				Jamrog et al. (2006)										
				Mohamed (2002)										
				Saleh & Wang (1993)										
3	KFL3	Company's focus on innovation portfolio	Tellis et al. (2009)	Jamrog et al. (2006)					2	0	0	0	Yes	
4	KFL4	Diversity		Ernst & Young: Diversity Drives Innovation", (2010)		Østergaard et al. (2010) (Age diversity)	Østergaard et al. (2010) (Ethnic diversity)	McLean (2005)	5	1	1	2	Yes	
				Østergaard et al. (2010)				Amabile et al. (1996)						
				Jamrog et al. (2006)										
				Patterson et al. (2008)										
				Mohamed (2002)										
5	KFL5	Empowerment & Autonomy	Amabile et al. (1996)	Dombrowski et al. (2007)	Chang & Lee (2008)			Ahmed (1998)	19	0	0	6	Yes	
			Tellis et al. (2009)	Hartmann (2006)	Tan et al. (2008)			McLean (2005)						
			Judge et al. (1997)	Jaskyte & Dressler (2005)	Janiunaite (2010)			Nanda & Singh (2009)						
			Tushman & O'Reilly (1997)	Khazanchi et al. (2007)				Claver et al. (1998)						
				McLaughlin et al. (2008)				Andriopoulas (2001)						
				Gudmundson et al. (2003)				Martins and Terblanche (2003)						
				Lemon & Sahota (2004)										
				Jung et al. (1997)										
				McAdam et al. (2010)										
				Eckermann et al. (2003)										
				Zdunczyk & Blenkinsopp (2007)										
				Dobni (2008)										
				Çakar & Ertürk (2010)										
				Valencia et al. (2010)										
				Mohamed (2002)										

No.	Code	Factors	Empirical Evidence (References)					Theoretical References	Strength of Evidence				Selection Yes/ No	Comments
			Positive Impact			Negative Impact	No impact		Positive	Negative	No Impact	Theoretical		
			Very Strong Evidence	Strong Evidence	Weak Evidence									
6	KFL6	Flexible organization Structure	Chandler et al. (2000)	Caccia-Bava et al. (2006)	Archer & Walczyk (2006)	Valencia et al. (2011) (More controlled for learning)	Saleh & Wang (1993)	Claver et al. (1998)	7	1	1	5	Yes	
				Zdunczyk & Blenkinsopp (2007)	Terziovski (2010)			McLean (2005)						
				Patterson et al. (2008)	Janiunaite (2010)			Bessant (2003)						
				Jamrog et al. (2006)	Tan et al. (2008)			Nanda & Singh (2009)						
				Valencia et al. (2011)										
				Valencia et al. (2010)				Martins and Terblanche (2003)						
7	KFL7	Innovation Process		Gudmundson et al. (2003)				Claver et al. (1998)	5	0	0	2	Yes	
				Mohamed (1995)				McLean (2005)						
				Eckermann et al. (2003)										
				Jamrog et al. (2006)										
				Dobni (2008)										
8	KFL8	Innovation Vision, Mission and Strategy	Kenny & Reedy (2006)	Caccia-Bava et al. (2006)	Terziovski (2010)			Ahmed (1998)	10	0	0	2	Yes	
				McAdam et al. (2010)				Martins and Terblanche (2003)						
				Eckermann et al. (2003)										
				Zdunczyk & Blenkinsopp (2007)										
				Dombrowski et al. (2007)										
				Patterson et al. (2008)										
				Mohamed (1995)										
				Jamrog et al. (2006)										
				Dobni (2008)										
9	KFL9	Job Rotation	Tushman & O'Reilly (1997)	Dombrowski et al. (2007)					2	0	0	0	Yes	Two empirical sources
10	KFL10	Leadership support and commitment	Kenny & Reedy (2006)	Hartmann (2006)	Chang & Lee (2008)		Jaskyte (2004)	Ahmed (1998)	18	0	1	5	Yes	
			Scott & Bruce (1994)	Panuwatwanich et al. (2008)	Feldman (1988)			Claver et al. (1998)						
			Amabile et al. (1996)	Dackert et al. (2004)				McLean (2005)						
			Jassawala & Sashittal (2002)	Jung et al. (1997)				Higgins & McAllaster (2002)						
			Chandler et al. (2000)	Mohamed (2002)				Bessant (2003)						
			Judge et al. (1997)	Mohamed (1995)										
			Tushman & O'Reilly (1997)	Saleh & Wang (1993)										
				Patterson et al. (2008)										
				Malaviya & Wadhwa (2005)										
				Jamrog et al. (2006)										
				Wang & Ahmed (2004)										

No.	Code	Factors	Empirical Evidence (References)					Theoretical References	Strength of Evidence				Selection Yes/No	Comments
			Positive Impact			Negative Impact	No impact		Positive	Negative	No Impact	Theoretical		
			Very Strong Evidence	Strong Evidence	Weak Evidence									
11	KFL11	Learning and Development	Kenny & Reedy (2006)	Dombrowski et al. (2007) McLaughlin et al. (2008) Gudmundson et al. (2003) Caccia-Bava et al. (2006) Lemon & Sahota (2004) Zdunczyk & Blenkinsopp (2007) Eckermann et al. (2003) Dobni (2008)	Archer & Walczyk (2006) Janiunaite (2010) Malaviya & Wadhwa (2005)			Claver et al. (1998) Martins and Terblanche (2003) Murray & Blackman (2006) Bessant (2003)	9	0	0	4	Yes	
12	KFL12	Networking and boundary spanning - External		Kivimäki et al. (2000) Dombrowski et al. (2007) McLaughlin et al. (2008) Mohamed (1995) Zdunczyk & Blenkinsopp (2007) Jamrog et al. (2006) Laursen & Salter (2005) Dobni (2008)	Janiunaite (2010)			Murray & Blackman (2006) Martins and Terblanche (2003) Bessant (2003)	8	0	0	1	Yes	
13	KFL13	Open & transparent communication	Tushman & O'Reilly (1997) Amabile et al. (1996)	Dobni (2008) Jamrog et al. (2006) Eckermann et al. (2003) McAdam et al. (2010) Malaviya & Wadhwa (2005) Caccia-Bava et al. (2006) Mohamed (1995) Lemon & Sahota (2004) Hartmann (2006) Dombrowski et al. (2007)	Archer & Walczyk (2006)			Ahmed (1998) Hauser (1998) Andriopoulas (2001) McLean (2005) Martins and Terblanche (2003)	12	0	0	5	Yes	
14	KFL14	Participative safety	Amabile et al. (1996) Tushman & O'Reilly (1997)	Dombrowski et al. (2007) Lemon & Sahota (2004) Mohamed (1995) McAdam et al. (2010) Zdunczyk & Blenkinsopp (2007) Patterson et al. (2008) Valencia et al. (2011) Eckermann et al. (2003) Dobni (2008) Çakar & Ertürk (2010)	Archer & Walczyk (2006) Chang & Lee (2008) Janiunaite (2010) Jassawala & Sashittal (2002)			Dovey (2009) Hauser (1998) McLean (2005) Andriopoulas (2001) Martins and Terblanche (2003) Ahmed (1998)	12	0	0	6	Yes	

No.	Code	Factors	Empirical Evidence (References)					Theoretical References	Strength of Evidence				Selection Yes/No	Comments
			Positive Impact			Negative Impact	No impact		Positive	Negative	No Impact	Theoretical		
			Very Strong Evidence	Strong Evidence	Weak Evidence									
15	KFL15	Physical Symbols	Jassawala & Sashittal (2002)		Malaviya & Wadhwa (2005)			Higgins & McAllaster (2002)	1	0	0	1	Yes	At least one empirical and one theoretical source
16	KFL16	Quick decision-making	Tushman & O'Reilly (1997)					Claver et al. (1998)	1	0	0	1	Yes	One empirical and one theoretical sources
17	KFL17	Rewards and recognition	Judge et al. (1997); Tushman & O'Reilly (1997); Amabile et al. (1996); Tellis et al. (2009)	Saleh & Wang (1993); Caccia-Bava et al. (2006); Malaviya & Wadhwa (2005); Patterson et al. (2008)	Archer & Walczyk (2006)	Judge et al. (1997) (Extrinsic rewards); Tushman & O'Reilly (1997) (Monetary rewards); Patterson et al. (2008) (Financial rewards)		Ahmed (1998); Higgins & McAllaster (2002); Nanda & Singh (2009); Martins and Terblanche (2003)	7	2	0	4	Yes	
18	KFL18	Risk-taking and experimentation	Amabile et al. (1996); Tushman & O'Reilly (1997); Tellis et al. (2009)	Jamrog et al. (2006); Saleh & Wang (1993); McLaughlin et al. (2008); Jaskyte & Dressler (2005); Khazanchi et al. (2007); Caccia-Bava et al. (2006); Zdunczyk & Blenkinsopp (2007); Valencia et al. (2010); Valencia et al. (2011); Eckermann et al. (2003)	Janiunaite (2010); Chang & Lee (2008)			Ahmed (1998); Claver et al. (1998); McLean (2005); Nanda & Singh (2009); Andriopoulos (2001); Martins and Terblanche (2003)	13	0	0	6	Yes	
19	KFL19	Safe Spaces		Dombrowski et al. (2007); Lemon & Sahota (2004)	Tan et al. (2008)				2	0	0	0	Yes	
20	KFL20	Scanning and tracking market	Hoffman (1999)		Janiunaite (2010)			Murray & Blackman (2006)	1	0	0	1	Yes	
21	KF21	Slack resources	Judge et al. (1997); Amabile et al. (1996); Chandler et al. (2000); Kenny & Reedy (2006)	Rasulzada & Dackert (2009); Hartmann (2006); McLaughlin et al. (2008); Gudmundson et al. (2003); McAdam et al. (2010); Eckermann et al. (2003); Jamrog et al. (2006); Patterson et al. (2008); Dobni (2008); Ruiz-Moreno et al (2008)			Scott & Bruce (1994)	Ahmed (1998); Martins and Terblanche (2003); McLean (2005); Bessant (2003)	14	0	1	4	Yes	

No.	Code	Factors	Empirical Evidence (References)					Theoretical References	Strength of Evidence				Selection Yes/ No	Comments
			Positive Impact			Negative Impact	No impact		Positive	Negative	No Impact	Theoretical		
			Very Strong Evidence	Strong Evidence	Weak Evidence									
22	KFL22	Stories & Myths	Jassawala & Sashittal (2002)					Ahmed (1998) Higgins & McAllaster (2002) Nanda & Singh (2009)	1	0	0	3	Yes	One empirical and three theoretical sources
23	KFL23	Talent & Creativity	Kenny & Reedy (2006)	Khazanchi et al. (2007) Jamrog et al. (2006) Dobni (2008) Koc (2007) Valencia et al. (2011) Patterson et al. (2008) Valencia et al. (2010) Wang & Ahmed (2004)	Jassawala & Sashittal (2002)	Scott & Bruce (1994) Systematic problem solving	Scott & Bruce (1994) Intuitive problem solving	Martins and Terblanche (2003) Claver et al. (1998) Ahmed (1998)	9	0	0	3	Yes	
24	KFL24	Task Orientation		Hartmann (2006) Khazanchi et al. (2007) Caccia-Bava et al. (2006) McLaughlin et al. (2008)	Chang & Lee (2008)			Higgins & McAllaster (2002) Nanda & Singh (2009)	4	0	0	2	Yes	
25	KFL25	Team composition		McLaughlin et al. (2008) Saleh & Wang (1993) Mohamed (1995)					3	0	0	0	Yes	
26	KFL26	Technology tools to support innovation		Dombrowski et al. (2007) Mohamed (1995)	Tan et al. (2008)			Hauser (1998) Bessant (2003) Martins and Terblanche (2003)	2	0	0	3	Yes	
27	KFL27	Workgroup support	Amabile et al. (1996)	Saleh & Wang (1993) Wang & Ahmed (2004) Mohamed (2002) Malaviya & Wadhwa (2005)	Tan et al. (2008) Chang & Lee (2008)	Jankyte & Dressler (2005) Jaskyte (2004)	Scott & Bruce (1994)	Claver et al. (1998) McLean (2005) Bessant (2003)	5	2	1	3	Yes	

A.4 Stage 4: Reporting

This stage of the systematic review process involves reporting results from the systematic review of the literature. This section provides both (a) an overview of the pool of papers reviewed in terms of their source, chronology, geography etc. and (b) the outcome in terms of the response to review questions posed as part of the systematic review of the literature.

Stage 4-1: Descriptive overview of the literature

Broadly, the 74 papers include organizational culture and its close affiliate organizational climate in the context of innovation. Between 2000 and 2010 the number of papers published is more than three times as many published between 1988 and 1999. This includes papers that relate to the empirical assessment of the innovation culture of an organization. In terms of the distribution of the papers, there were more papers on climate of innovation in the 1990s and from 2000 to 2010 on culture. The distribution of papers over time (Figure 2) indicates that the interest in the area of innovation culture has increased significantly since the beginning of 2000. Also, the key papers central to this research study were published between 2000 and 2010 (e.g. Eckermann et al., 2003; Martins & Terblanche, 2003; Kenny & Reedy, 2006; Dombrowski et al., 2007; Dobni, 2008).
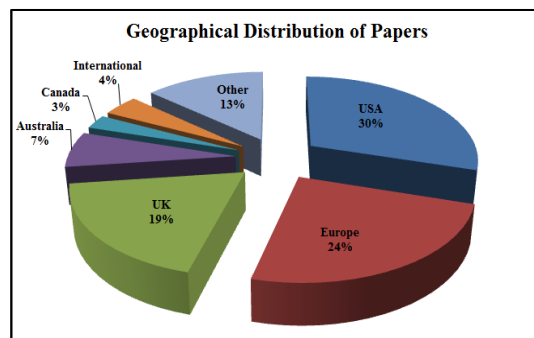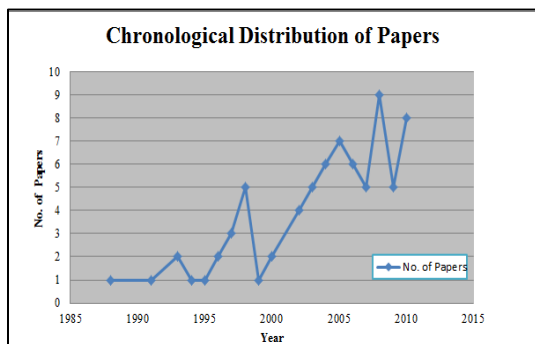
Figure 2: Chronological distribution of papers **Figure 3:** Geographical distribution of papers

Further, Figure 3 shows the enormous amount of work that has come out of the USA, Europe and the UK, which are at the forefront of research work[91]. This indicates that innovation culture is not only an area of academic interest, but also an area that can add value to businesses. Although there are only a few international (global) studies involving researchers from other geographies such as India, Malaysia, Taiwan, etc., the fact that the articles from these nations have been mostly in the years from 2000 to 2010 shows growing interest in this field of research work even in the developing nations.

The frequency of papers by academic journal has been an interesting area to look at. The 67 academic articles came from 50 different journals as shown in Table 14 (A 1-1.14). This indicates that the literature is not developing in a systematic way in the field of enquiry into innovation culture.

Table 14 (A 1-1.14): Academic journals in the consideration set

No.	Journal/Source Name	Frequency
1	Academy of Management Executive	1
2	Academy of Management Journal	3
3	Academy of Management Review	1
4	Administration in Social Work	1
5	Advances in Developing Human Resources	1
6	California Management Review	1
7	Computers and Industrial Engineering	1
8	Construction Innovation	1
9	Creativity and Innovation Management	1
10	Creativity Research Journal	2
11	Diagnostica	1
12	Economic and Industrial Democracy	1
13	Engineering, Construction and Architectural Management	1
14	Entrepreneurship Theory and Practice	1
15	European Journal of Innovation Management	6
16	Global Journal of Flexible Systems Management	1
17	Human Resource Planning	1
18	IEEE	1
19	International Journal of Business Performance Management	1

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[91] *The majority of the countries noted here are part of the OECD (Organisation for Economic Co-operation and Development), which focuses on national strategic roadmaps to foster innovation and enhance its economic impact.*

20	International Journal of Innovation and Learning	1
21	International Journal of Innovation Management	2
22	International Journal of Technology Management	2
23	International Journal of Technology, Policy and Management	1
24	International Small Business Journal	2
25	Irish Journal of Management	1
26	Journal of Creative Behavior	1
27	Journal of Developmental Entrepreneurship	1
28	Journal of Health Organization and Management	1
29	Journal of High Technology Management Research	1
30	Journal of Knowledge Management	1
31	Journal of Marketing	1
32	Journal of Operations Management	1
33	Journal of Organizational Behaviour	2
34	Journal of Small Business Management	1
35	Knowledge and Process Management	1
36	Leadership and Organization Development Journal	1
37	Management Decision	2
38	Multinational Business Review	1
39	Nonprofit Management and Leadership	1
40	Organizational Creativity in Creative Organizations	1
41	Organizational Dynamics	2
42	Personnel Review	2
43	R&D Management	2
44	Research Policy	1
45	Social Sciences	1
46	Strategic Management Journal	1
47	Technovation	2
48	The European Journal of Work and Organizational Psychology	1
49	The Leadership Quarterly	1
50	The Learning Organization	1
51	11th European Conference on Knowledge Management (Grey)	1
52	Books (Grey)	2
53	Design Management Review (Grey)	1
54	Government Research (Grey)	1
55	Presentation (Grey)	1
56	Research Report (Grey)	1
	Total	**74**

Also, these papers are spread across 11 different industries (see Table 15, A 1-1.15); the majority of them are in manufacturing and high technology R&D, while there is very little in the area of professional services. The spread can also be seen in the types of innovation investigated (see Table 16, A 1-1.16), i.e., process, technological, product, administrative, etc. On reviewing the papers closely, the idea of the distributed nature of the publishing across the number of journals, industries, and types of innovation, reinforces the fact that the research in the area of innovation culture has been very specific to varied research agendas and that the development of the literature has not been systematic. This also means that the literature has not been building on areas of enquiry to grow a particular research agenda. This is significant because it shows how difficult it would be to pool insights from papers that have varied research agendas into a single coherent picture to study innovation culture. Therefore, as described above, a very careful approach was taken to code insights from the various studies and pool the results together, where the meaning of the factors of culture were carefully read and reread many times.

Table 15 (A 1-1.15): Distribution of papers by Industry

No.	Industry	Products/Services	No. of Papers
1	Hospital Services	Services	3
2	Manufacturing	Products	13
3	Pharmaceutical Industry	Products	2
4	Professional Services	Services	1
5	Telecommunications	Products	2
6	High Technology R&D	Products/ Services	8
7	Human Services	Services	2
8	IT Software	Services	2
9	Financial Services	Services	2
10	Design	Services	3
11	Construction	Products	1
12	Mixed – across industries	Products/Services	18
13	Not Specific	Products/Services	17
	Total		74

Table 16 (A 1-1.16): Distribution by type of innovation

No.	Type of Innovation	No. of Papers
1	Administrative/Organizational and Technological Innovation	4
2	Product/Process/Technological/Administrative	12
3	Product and Process Innovation	13
4	Only Product Innovation	7
5	Only Process Innovation	5
6	Only Technological	4
7	Not Specific	29
	Total	74

Also, it must be noted that there are 57 empirical papers, 13 theoretical papers, and 4 literature reviews in the consideration set. Of the 57 empirical papers, 44 used quantitative methods, 5 used qualitative and 8 used mixed methods. This approach of using quantitative methods or even mixed methods can be seen as a trend in the most recent studies. This is interesting because culture researchers generally advocate a qualitative approach to understanding culture[92] (e.g. Schein, 1984). Further, while the research work was undertaken equally in both SMEs and large organizations, there were studies that mixed both of these. Two key observations are worth noting. First, the factors of innovation are studied at individual, group, and organizational levels and also specific initiatives e.g. a programme of work (see Table 17). Second, the majority of the studies looked at organizations as 'wholes' (i.e., an organization as an entity) in order to study innovation culture, and this is not surprising given that organizations create the necessary environment for innovation to thrive (e.g. Ahmed, 1998; Martins & Terblanche, 2003).

Table 17 (A 1-1.17): Units of Analysis used across the papers

Units of Analysis	Large	SME	Mixed	Non-Profit	Total
Individuals	4	1	2	0	7
Groups	3	1	3	0	7
Organization	12	19	8	1	40
Programme Components	1	0	0	0	1
Total	20	21	13	1	**55**

Stage 4-2: Factors of innovation culture: Outcome of the systematic review

Based on the detailed analysis and reflection of the meanings of the words used from data synthesis section of A.3 above, definitions for the 27 factors of innovation culture were derived. The definitions can be found in Table 18 (A 1-1.18). The detailed synthesis of the systematic review of literature providing a detailed account of the 27 factors is presented in Chapter 3.

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[92] *This is also indicative of the fact that culture has lately been seen from a etic perspective, as opposed to an emic perspective (as discussed in Chapter 3)*

Table 14 (A 1-1.14): Key Factors from the Literature and Definitions

No.	Code	Factors	Definitions
1	KFL1	Client Focus	This refers to keeping the customer/client at the centre of an organization's innovation focus i.e., in all its initiatives, an organization seeks to add value to the client/customer, to the extent of even co-defining value with them
2	KFL2	Collaboration	This refers to collaboration internally within an organization across boundaries of various departments or functional areas
3	KFL3	Company's focus on innovation portfolio	This refers to a clear organizational strategic direction in terms of their areas of business focus in the future with regard to innovation portfolio (current versus future/incremental versus radical etc.)
4	KFL4	Diversity	This refers to an organization/team having a diverse set of people in terms of age, gender, ethnicity, religion, experience, etc.
5	KFL5	Empowerment & Autonomy	This refers to providing employees the necessary freedom to operate flexibly, make decisions, and maintain accountability of work within the context of organizational goals
6	KFL6	Flexible organization Structure	This refers to organizations having less hierarchical structures - structures that enable communication between people, more as consultation than as vertical commands
7	KFL7	Innovation Process	This refers to having a structured process to ensure that ideas are taken from conception through a thorough evaluation to commercialization supported by a regime of measuring innovation's contribution to business value
8	KFL8	Innovation Vision, Mission and Strategy	This refers to an organization having an innovation vision, mission and strategy both documented and being enacted in the form of aligning all innovation initiatives to a common innovation goal, which is in turn aligned to organizational strategy/goals
9	KFL9	Job Rotation	This refers to moving people or giving an opportunity for people to move across functional disciplines and build cross-functional skills
10	KFL10	Leadership support and commitment	This refers to the visible support for innovation from supervisors, senior management, and leadership through recognition of ideas, allocation of resources, development of ideas etc.
11	KFL11	Learning and Development	This refers to employees continually learning, increase their breadth of knowledge and understanding in their domain of work and markets in order to develop skills, capabilities and knowledge that can help them to innovate
12	KFL12	Networking and boundary spanning – External	This refers to organizations identifying new sources of innovative ideas and innovation external to the organization
13	KFL13	Open communication	This refers to having an environment where individuals, teams and departments can have transparent, seamless communication which can involve sharing of ideas, exchange of information etc.
14	KFL14	Participative safety	This refers to having a non-threatening environment of openness, mutual respect and trust where individuals and also partnering organizations share their knowledge and ideas openly
15	KFL15	Physical Symbols	This refers to having a supportive physical layout with appropriate, creative work area design, surroundings, facilities, displayed documentation etc.

16	KFL16	Quick decision-making	This refers to an organization where there are no delays with regard to critical innovation related decisions to be made
17	KFL17	Rewards and recognition	This refers to an organization having both intrinsic (recognition related, holidays and other non-financials benefits) rewards and extrinsic (monetary/financial)
18	KFL18	Risk-taking and experimentation	This refers to an organization, characterized by tolerance of failures and learning from mistakes, identifying opportunities that are inherently risky – unknown or new to the organization – but have significant business value
19	KFL19	Safe Spaces	This refers to having entrepreneurial ventures, i.e., well-funded groups, free from routine activities, necessary for identifying and developing opportunities for innovation
20	KFL20	Scanning and tracking market	This refers to organizations actively scanning the market, competition and customers, identifying the trends that provide significant opportunities for the business
21	KFL21	Slack resources	This refers to having measurable resources (human, financial and informational) committed to supporting innovation initiatives within an organization
22	KFL22	Stories & Myths	This refers to employees within an organization actively discussing narratives and critical incidents that relate to innovation successes and lessons learnt
23	KFL23	Talent & Creativity	This refers to personality traits/attributes of employees in terms of quality, skill, creativity, personal initiative and motivation necessary for innovation
24	KFL24	Task Orientation	This refers to not only ensuring that individual goal-setting is done and there is clarity of work that needs to be done, but also how that work is aligned to innovation goals
25	KFL25	Team composition	This refers to the constitution of the team – having a knowledgeable, skilful and motivated team members
26	KFL26	Tools to support innovation	This refers to an organization providing employees with the necessary tools and equipment required for innovation including any ICT (Information Communication Technology)
27	KFL27	Work group support	The support from a proximal work group or team through quality of interaction between the individuals and the team, thus providing them with a sense of stability and security

A.5 Stage 5: Utilizing the findings

This section provides a summary of how the findings from the systematic review of literature can be used. Broadly, the findings can be seen from two perspectives:

Findings informing research

- Quite a lot of work has been done in the area of manufacturing. The latest trend has indicated some focus is now on services. However, little work has been done in the area of professional services and hence is an area to look at to make a contribution.

- The studies in the area of innovation culture had been done at individual, group and organizational levels. The factors of culture could be at all three levels.

- There has been more emphasis on organizations as 'wholes', given the unit of analysis used across studies was 'organization'. This indicates where the focus is in terms of innovation culture, and that it is important from a culture perspective that organizations provide the necessary environment for individuals to innovate.

Findings informing practice

- Factors of innovation culture are context specific. This is consistent with the findings of Dombrowski et al. (2007). Organizations need to understand the context of their business, interpret factors of culture in that context and draw lessons that can be applied for practical results.

Additionally, the key findings and implications for this research are documented in Chapter 3, Section 3.5.

APPENDIX 1-2: INNOVATION WITHIN PSFs

The nature of work undertaken by PSFs is inherently innovative (O'Mahoney, 2011; Reihlen & Werr, 2012; Ross, 2015). However, PSFs have largely remained unexplored (Anand et al., 2007; O'Mahoney, 2011) due to the intangible nature of services (Anand et al., 2007; Malhotra, 1999; Prajogo, 2006). O'Mahoney (2011) conducted a research study on management innovation practices in UK consultancies. This was in conjunction with the Advanced Institute of Management (AIM). His study comprised 70 interviews with senior representatives in a variety of consultancies, clients and professional bodies in UK consultancies. From his study four areas in which consultancies can innovate were identified:

- New solutions: products, processes and services which are new, either to the market or to the consultancy itself
- Adapting solutions: existing products, processes and services, which are not new but often adapted for entry into new clients or markets – most common form of innovation

- Thought leadership: white papers, new concepts and research that provides insights or advice. This may relate to new or improved solutions leading to creation of new demand

- Creative problem solving: Ad hoc solutions which do not lead to new products but which overcome an issue for clients or consultants, known to be provided by niche consultancies

While the first point (New solutions) was supported by 53% of respondents in his study, the second (Adapting solutions) was supported by 21%. Both are the most common forms of innovation in consultancies.

APPENDIX 1-3: PSFs – RANGE OF ACTIVITIES & SIZE OF PSF MARKET

PSFs cover a range of activities with individual companies offering specialized knowledge, skills and responsibilities. Consulting companies vary in size, specialism, and focus – for example, whether they offer a broad range of solutions or more niche and specialized skills based on specific industry knowledge. According to Inside Careers (2015/2016), some key forms of consultancy are strategy, Human Resources (HR), Information Technology (IT), financial and investment, and niche consultancies. Strategy consultancies focus on finding solutions to specific problems and they are innovators in that sense as they create custom strategies. HR consultancies focus on processes of managing an organization's workforce. IT consultancies focus on a broad range of services including providing businesses tools to identify, implement and embed IT systems in companies. Financial and investment consultancies focus on helping clients make intelligent and informed financial decisions, installation of budgetary control systems, revenue and budgetary planning, etc. In addition, there are niche consultancies that provide specialized expertise to improve their clients' businesses. Some of the industries where niche consultancies are found include: construction, engineering, environment and energy, hospitality and tourism, law, marketing, politics, public sector, retail and transport. Examples of major professional services firms in the USA, which is 50% of the global market, are Booz Allen Hamilton, Computer Sciences Corporation (CSC), Gensler, IBM, Jacobs (First Research, 2011; MCA, 2016). Examples of firms outside of the USA include Accenture (Ireland), WPP (Ireland), WorleyParsons (Australia), Capgemini Group (France), and Baker Tilly International (UK). For example, according to Consultancy.uk[93], this industry (with up to $280 billion global revenue) overall has been growing with a 5-year compound annual growth rate (CAGR) ranging from 6 to 12% between 2011 and 2016 depending on the type of consulting service (e.g. 10% technology consulting growth, 10% HR and change management, 20% financial and risk management in 2014/15).

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[93] *Although Consultancy.uk, a research firm in the UK, uses ALM Intelligence and applies a narrower market definition (i.e., inclusion or exclusion of types of firms into the definition of consulting market) of the consulting market and functions included (management, technology and accountancy), the 6-12% CAGR is a reasonably good feel for the growth of consultancies, broadly based on the growth figures in the past 10years.*

Consulting companies operate in a highly competitive marketplace where competitive action could render services less competitive leading to decline in revenue and profit margins (Maister, 2003). The current market is highly fragmented[94] and there are low barriers to entry. This is because while barriers to entry can come from firms' unique solution offerings, good reputation, and an existing client-base, the movement of consultants who have extensive experience and expertise out of large consultancies to start their own consulting practices (Maister, 2003) can render such barriers less effective. Factors that could favour new entrants include the lack of regulation and the ease with which suppliers can access clients and vice versa (The Consultancy Group, 2007). The market is typically B2B and medium and large corporations are more likely to be clients.

From the perspective of this study, three firms[95] are included: one each from the management, technology and engineering consulting sectors. According to Consultancy.uk, representative bodies (e.g. the MCA, Management Consultancy Association, in the UK) and analyst firms (e.g. ALM Intelligence, Gartner, etc.) have different market definitions of the consulting industry. As a result, globally, the estimates of the size of the consulting market differ; they can range from $100 billion up to $280 billion USD. Included in this are management and technology consulting firms. With respect to engineering consulting (firms that apply engineering principles to the design, development and use of machines, materials, instruments, structures, processes and systems), the market is fragmented but broadly, in the UK, firms have also seen growth rates of 4 to 6% 5-year CAGR between 2011 and 2016 according to IBIS World, UK (2016); details at a global level are not available. Based on one source available to the researcher, USA alone has c.770, 000 PSFs (First Research, 2011) of which there are potentially c.58, 000 engineering consultancies, as reported by Value Adder[96] (2008).

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[94] *http://www.theconsultancygroup.nl/nieuws/competitive-landscape-of-management-consulting*
[95] *More details are discussed in Chapter 4*
[96] *This includes accountancy firms as well, global numbers are not available*

APPENDICES FOR CHAPTER 3

APPENDIX 3-1: FULL LIST OF FACTORS OF INNOVATION CULTURE

No.	Code	Factors	Definitions
1	KFL1	Client Focus	This refers to keeping the customer/client at the centre of an organization's innovation focus i.e., in all its initiatives, an organization seeks to add value to the client/customer, to the extent of even co-defining value with them
2	KFL2	Collaboration	This refers to collaboration internally within an organization across boundaries of various departments or functional areas
3	KFL3	Company's focus on innovation portfolio	This refers to a clear organizational strategic direction in terms of their areas of business focus in the future with regard to innovation portfolio (current versus future/incremental versus radical etc.)
4	KFL4	Diversity	This refers to an organization/team having a diverse set of people in terms of age, gender, ethnicity, religion, experience, etc.
5	KFL5	Empowerment & Autonomy	This refers to providing employees the necessary freedom to operate flexibly, make decisions, and maintain accountability of work within the context of organizational goals
6	KFL6	Flexible organization Structure	This refers to organizations having less hierarchical structures - structures that enable communication between people, more as consultation than as vertical commands
7	KFL7	Innovation Process	This refers to having a structured process to ensure that ideas are taken from conception through a thorough evaluation to commercialization supported by a regime of measuring innovation's contribution to business value
8	KFL8	Innovation Vision, Mission and Strategy	This refers to an organization having an innovation vision, mission and strategy both documented and being enacted in the form of aligning all innovation initiatives to a common innovation goal, which is in turn aligned to organizational strategy/goals
9	KFL9	Job Rotation	This refers to moving people or giving an opportunity for people to move across functional disciplines and build cross-functional skills
10	KFL10	Leadership support and commitment	This refers to the visible support for innovation from supervisors, senior management, and leadership through recognition of ideas, allocation of resources, development of ideas etc.
11	KFL11	Learning and Development	This refers to employees continually learning, increase their breadth of knowledge and understanding in their domain of work and markets in order to develop skills, capabilities and knowledge that can help them to innovate
12	KFL12	Networking and boundary spanning – External	This refers to organizations identifying new sources of innovative ideas and innovation external to the organization
13	KFL13	Open communication	This refers to having an environment where individuals, teams and departments can have transparent, seamless communication which can involve sharing of ideas, exchange of information etc.
14	KFL14	Participative safety	This refers to having a non-threatening environment of openness, mutual respect and trust where individuals and also partnering organizations share their knowledge and ideas openly

15	KFL15	Physical Symbols	This refers to having a supportive physical layout with appropriate, creative work area design, surroundings, facilities, displayed documentation etc.
16	KFL16	Quick decision-making	This refers to an organization where there are no delays with regard to critical innovation related decisions to be made
17	KFL17	Rewards and recognition	This refers to an organization having both intrinsic (recognition related, holidays and other non-financials benefits) rewards and extrinsic (monetary/financial)
18	KFL18	Risk-taking and experimentation	This refers to an organization, characterized by tolerance of failures and learning from mistakes, identifying opportunities that are inherently risky – unknown or new to the organization – but have significant business value
19	KFL19	Safe Spaces	This refers to having entrepreneurial ventures, i.e., well-funded groups, free from routine activities, necessary for identifying and developing opportunities for innovation
20	KFL20	Scanning and tracking market	This refers to organizations actively scanning the market, competition and customers, identifying the trends that provide significant opportunities for the business
21	KFL21	Slack resources	This refers to having measurable resources (human, financial and informational) committed to supporting innovation initiatives within an organization
22	KFL22	Stories & Myths	This refers to employees within an organization actively discussing narratives and critical incidents that relate to innovation successes and lessons learnt
23	KFL23	Talent & Creativity	This refers to personality traits/attributes of employees in terms of quality, skill, creativity, personal initiative and motivation necessary for innovation
24	KFL24	Task Orientation	This refers to not only ensuring that individual goal-setting is done and there is clarity of work that needs to be done, but also how that work is aligned to innovation goals
25	KFL25	Team composition	This refers to the constitution of the team – having a knowledgeable, skilful and motivated team members
26	KFL26	Tools to support innovation	This refers to an organization providing employees with the necessary tools and equipment required for innovation including any ICT (Information Communication Technology)
27	KFL27	Work group support	The support from a proximal work group or team through quality of interaction between the individuals and the team, thus providing them with a sense of stability and security

APPENDIX 3-2: MAPPING OF FACTORS OF INNOVATION CULTURE TO MARTIN AND TERBLANCHE'S (2003) MODEL

This part of the appendices discusses the rationale used to map factors of innovation culture (column 3) to organizational culture (column 2) with a few examples.

No.	Determinants of Culture	Key Factors from the systematic literature review (bold and in italics)
1	Strategy	Strategy embodies *innovation vision/mission and strategy* and *scanning and tracking market*
2	Structure	*Flat organizational structures*, *networking and boundary spanning*
3	Support Mechanisms	Support mechanisms include *focus on innovation portfolio, diversity, innovation process, job rotation, leadership support and commitment, physical symbols, rewards and recognition, safe spaces, slack resources, talent and creativity*, *task orientation, team composition, technology tools to support innovation,* and *workgroup support*
4	Innovative Behaviours	Key behaviours include *client focus, collaboration (internal), empowerment & autonomy, learning and development, participative safety, quick decision making, risk-taking* and *experimentation*
5	Communication	*Open and transparent communication*, *stories and myths*

'Employee diversity'. Martins and Terblanche (2003) link the talent and creativity of employees to the recruitment processes in the organization. Using the same logic, *Employee Diversity* can also be related to recruitment process initiative and is therefore captured within 'Support Mechanisms' (No.3 of the above table).

'Safe Spaces' refers to having well-funded areas such as 'skunk-works', long-standing R&D or dedicated teams with a specific innovation agenda to encourage innovation. This again relates to organizational support for innovation. Therefore, this is categorized under 'Support Mechanisms' (No.3 of the above table).

'Client focus'. Strong identification with the customer and emphasis on customer experience is a common factor across most innovative companies as revealed in the practitioner survey by Booz and Co. (Jaruzelski et al., 2011) and supported by Jamrog et al.'s (2008) AMA/HRI survey and Tellis et al.'s (2009) study. Ahmed (1998) considers *Customer Orientation* (or Client focus) as a behavioural aspect, given that this relates to changing internal organizational behaviours to orient them to customers' needs in order to work with the customers better. Based on this logic, '*Client focus'* is categorized under 'Innovative Behaviours' (No.4 of the above table).

'Innovation process.' Innovation process is similar to rewards and recognition because both are control systems set up to enable support. Also, some authors (e.g., Eckermann et al., 2003; McLaughlin et al., 2008; Mohamed, 1995) have highlighted the importance of

an *innovation process*[97] for innovation implementation (Dobni, 2008). Therefore, innovation process is categorized as a 'Support Mechanism' (No.3 of the above table).

'Workgroup support'. Workgroup support contributes to group satisfaction (Anderson & West, 1998; Mohamed, 2002), which in turn contributes to a higher rate of group/team innovation (Mohamed, 2002). This is clearly a behavioural aspect and is therefore categorized as *'innovative behaviours',* given the nature of the interaction involved (Bessant, 2003) (No.4 of the above table).

'Task Orientation' is an area that Alvesson (1985) alluded to as being an important aspect of culture. By its very nature it relates to organizational design (work design) and operational processes. Therefore, this is included in the 'Support Mechanisms'. (No.3 of the above table).

A similar process was used to map all factors to the above-mentioned five areas of organizational culture.

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[97] *An Innovation Process includes idea generation, feasibility, design and implementation (Mohamed, 1995)*

APPENDIX 3-3: FULL LIST OF FACTORS OF INNOVATION CULTURE WITH DETAILS OF SUPPORTING EVIDENCE

No.	Code	Factors	Empirical Evidence (References)					Theoretical References	Strength of Evidence				Selection Yes/ No	Comments
			Positive Impact			Negative Impact	No impact		Positive	Negative	No Impact	Theoretical		
			Very Strong Evidence	Strong Evidence	Weak Evidence									
1	KFL1	Client Focus		Jamrog et al. (2006)	Archer & Walczyk (2006)			Ahmed (1998)	2	0		1	Yes	
				Dobni (2008)										
2	KFL2	Collaboration		Dombrowski et al. (2007)		Jaskyte & Dressler (2005)		Martins and Terblanche (2003)	7	1	0	4	Yes	
				Lemon & Sahota (2004)				Bessant (2003)						
				McAdam et al. (2010)				Ahmed (1998)						
				Zdunczyk & Blenkinsopp (2007)				Hauser (1998)						
				Jamrog et al. (2006)										
				Mohamed (2002)										
				Saleh & Wang (1993)										
3	KFL3	Company's focus on innovation portfolio	Tellis et al. (2009)	Jamrog et al. (2006)					2	0	0	0	Yes	
4	KFL4	Diversity		Ernst & Young: Diversity Drives Innovation", (2010)		Østergaard et al. (2010) (Age diversity)	Østergaard et al. (2010) (Ethnic diversity)	McLean (2005)	5	1	1	2	Yes	
				Østergaard et al. (2010)				Amabile et al. (1996)						
				Jamrog et al. (2006)										
				Patterson et al. (2008)										
				Mohamed (2002)										
5	KFL5	Empowerment & Autonomy	Amabile et al. (1996)	Dombrowski et al. (2007)	Chang & Lee (2008)			Ahmed (1998)	19	0	0	6	Yes	
			Tellis et al. (2009)	Hartmann (2006)	Tan et al. (2008)			McLean (2005)						
			Judge et al. (1997)	Jaskyte & Dressler (2005)	Janiunaite (2010)			Nanda & Singh (2009)						
			Tushman & O'Reilly (1997)	Khazanchi et al. (2007)				Claver et al. (1998)						
				McLaughlin et al. (2008)				Andriopoulas (2001)						
				Gudmundson et al. (2003)				Martins and Terblanche (2003)						
				Lemon & Sahota (2004)										
				Jung et al. (1997)										
				McAdam et al. (2010)										
				Eckermann et al. (2003)										
				Zdunczyk & Blenkinsopp (2007)										
				Dobni (2008)										
				Çakar & Ertürk (2010)										
				Valencia et al. (2010)										
				Mohamed (2002)										

No.	Code	Factors	Empirical Evidence (References)					Theoretical References	Strength of Evidence				Selection Yes/ No	Comments
			Positive Impact			Negative Impact	No impact		Positive	Negative	No Impact	Theoretical		
			Very Strong Evidence	Strong Evidence	Weak Evidence									
6	KFL6	Flexible organization Structure	Chandler et al. (2000)	Cassia-Bava et al. (2006)	Archer & Walczyk (2006)	Valencia et al. (2011) (More controlled)	Saleh & Wang (1993)	Claver et al. (1998)	7	1	1	5	Yes	
				Zdunczyk & Blenkinsopp (2007)	Terziovski (2010)			McLean (2005)						
				Patterson et al. (2008)	Janiunaite (2010)			Bessant (2003)						
				Jamrog et al. (2006)	Tan et al. (2008)			Nanda & Singh (2009)						
				Valencia et al. (2011)										
				Valencia et al. (2010)				Martins and Terblanche (2003)						
7	KFL7	Innovation Process		Gudmundson et al. (2003)				Claver et al. (1998)	5	0	0	2	Yes	
				Mohamed (1995)				McLean (2005)						
				Eckermann et al. (2003)										
				Jamrog et al. (2006)										
				Dobni (2008)										
8	KFL8	Innovation Vision, Mission and Strategy	Kenny & Reedy (2006)	Cassia-Bava et al. (2006)	Terziovski (2010)			Ahmed (1998)	10	0	0	2	Yes	
				McAdam et al. (2010)				Martins and Terblanche (2003)						
				Eckermann et al. (2003)										
				Zdunczyk & Blenkinsopp (2007)										
				Dombrowski et al. (2007)										
				Patterson et al. (2008)										
				Mohamed (1995)										
				Jamrog et al. (2006)										
				Dobni (2008)										
9	KFL9	Job Rotation	Tushman & O'Reilly (1997)	Dombrowski et al. (2007)					2	0	0	0	Yes	Two empirical sources
10	KFL10	Leadership support and commitment	Kenny & Reedy (2006)	Hartmann (2006)	Chang & Lee (2008)		Jaskyte (2004)	Ahmed (1998)	18	0	1	5	Yes	
			Scott & Bruce (1994)	Panuwatwanich et al. (2008)	Feldman (1988)			Claver et al. (1998)						
			Amabile et al. (1996)	Dackert et al. (2004)				McLean (2005)						
			Jassawala & Sashittal (2002)	Jung et al. (1997)				Higgins & McAllaster (2002)						
			Chandler et al. (2000)	Mohamed (2002)				Bessant (2003)						
			Judge et al. (1997)	Mohamed (1995)										
			Tushman & O'Reilly (1997)	Saleh & Wang (1993)										
				Patterson et al. (2008)										
				Malaviya & Wadhwa (2005)										
				Jamrog et al. (2006)										
				Wang & Ahmed (2004)										

No.	Code	Factors	Empirical Evidence (References)					Theoretical References	Strength of Evidence				Selection Yes/ No	Comments
			Positive Impact			Negative Impact	No impact		Positive	Negative	No Impact	Theoretical		
			Very Strong Evidence	Strong Evidence	Weak Evidence									
11	KFL11	**Learning and Development**	Kenny & Reedy (2006)	Dombrowski et al. (2007)	Archer & Walczyk (2006)			Claver et al. (1998)	9	0	0	4	Yes	
				McLaughlin et al. (2008)	Janiunaite (2010)			Martins and Terblanche (2003)						
				Gudmundson et al. (2003)	Malaviya & Wadhwa (2005)			Murray & Blackman (2006)						
				Cassia-Bava et al. (2006)				Bessant (2003)						
				Lemon & Sahota (2004)										
				Zdunczyk & Blenkinsopp (2007)										
				Eckermann et al. (2003)										
				Dobni (2008)										
12	KFL12	**Networking and boundary spanning - External**		Kivimäki et al. (2000)	Janiunaite (2010)			Murray & Blackman (2006)	8	0	0	1	Yes	
				Dombrowski et al. (2007)				Martins and Terblanche (2003)						
				McLaughlin et al. (2008)				Bessant (2003)						
				Mohamed (1995)										
				Zdunczyk & Blenkinsopp (2007)										
				Jamrog et al. (2006)										
				Laursen & Salter (2005)										
				Dobni (2008)										
13	KFL13	**Open & transparent communication**	Tushman & O'Reilly (1997)	Dobni (2008)	Archer & Walczyk (2006)			Ahmed (1998)	12	0	0	5	Yes	
			Amabile et al. (1996)	Jamrog et al. (2006)				Hauser (1998)						
				Eckermann et al. (2003)				Andriopoulas (2001)						
				McAdam et al. (2010)				McLean (2005)						
				Malaviya & Wadhwa (2005)				Martins and Terblanche (2003)						
				Cassia-Bava et al. (2006)										
				Mohamed (1995)										
				Lemon & Sahota (2004)										
				Hartmann (2006)										
				Dombrowski et al. (2007)										

No.	Code	Factors	Empirical Evidence (References)					Theoretical References	Strength of Evidence				Selection Yes/No	Comments
			Positive Impact			Negative Impact	No impact		Positive	Negative	No Impact	Theoretical		
			Very Strong Evidence	Strong Evidence	Weak Evidence									
14	KFL14	Participative safety	Amabile et al. (1996) Tushman & O'Reilly (1997)	Dombrowski et al. (2007) Lemon & Sahota (2004) Mohamed (1995) McAdam et al. (2010) Zdunczyk & Blenkinsopp (2007) Patterson et al. (2008) Valencia et al. (2011) Eckermann et al. (2003) Dobni (2008) Çakar & Ertürk (2010)	Archer & Walczyk (2006) Chang & Lee (2008) Janiunaite (2010) Jassawala & Sashittal (2002)			Dovey (2009) Hauser (1998) McLean (2005) Andriopoulas (2001) Martins and Terblanche (2003) Ahmed (1998)	12	0	0	6	Yes	
15	KFL15	Physical Symbols	Jassawala & Sashittal (2002)		Malaviya & Wadhwa (2005)			Higgins & McAllaster (2002)	1	0	0	1	Yes	At least one empirical and one theoretical source
16	KFL16	Quick decision-making	Tushman & O'Reilly (1997)					Claver et al. (1998)	1	0	0	1	Yes	One empirical and one theoretical sources
17	KFL17	Rewards and recognition	Judge et al. (1997) Tushman & O'Reilly (1997) Amabile et al. (1996) Tellis et al. (2009)	Saleh & Wang (1993) Cassia-Bava et al. (2006) Malaviya & Wadhwa (2005) Patterson et al. (2008)	Archer & Walczyk (2006)	Judge et al. (1997) (Extrinsic rewards) Tushman & O'Reilly (1997) (Monetary Patterson et al. (2008) (Financial		Ahmed (1998) Higgins & McAllaster (2002) Nanda & Singh (2009) Martins and Terblanche (2003)	7	2	0	4	Yes	
18	KFL18	Risk-taking and experimentation	Amabile et al. (1996) Tushman & O'Reilly (1997) Tellis et al. (2009)	Jamrog et al. (2006) Saleh & Wang (1993) McLaughlin et al. (2008) Jaskyte & Dressler (2005) Khazanchi et al. (2007) Cassia-Bava et al. (2006) Zdunczyk & Blenkinsopp (2007) Valencia et al. (2010) Valencia et al. (2011) Eckermann et al. (2003)	Janiunaite (2010) Chang & Lee (2008)			Ahmed (1998) Claver et al. (1998) McLean (2005) Nanda & Singh (2009) Andriopoulos (2001) Martins and Terblanche (2003)	13	0	0	6	Yes	

No.	Code	Factors	Empirical Evidence (References)					Theoretical References	Strength of Evidence				Selection Yes/ No	Comments
			Positive Impact			Negative Impact	No impact		Positive	Negative	No Impact	Theoretical		
			Very Strong Evidence	Strong Evidence	Weak Evidence									
19	KFL19	Safe Spaces		Dombrowski et al. (2007)	Tan et al. (2008)				2	0	0	0	Yes	
				Lemon & Sahota (2004)										
20	KFL20	Scanning and tracking market	Hoffman (1999)		Janiunaite (2010)			Murray & Blackman (2006)	1	0	0	1	Yes	
21	KF21	Slack resources	Judge et al. (1997)	Rasulzada & Dackert (2009)			Scott & Bruce (1994)	Ahmed (1998)	14	0	1	4	Yes	
			Amabile et al. (1996)	Hartmann (2006)				Martins and Terblanche (2003)						
			Chandler et al. (2000)	McLaughlin et al. (2008)				McLean (2005)						
			Kenny & Reedy (2006)	Gudmundson et al. (2003)				Bessant (2003)						
				McAdam et al. (2010)										
				Eckermann et al. (2003)										
				Jamrog et al. (2006)										
				Patterson et al. (2008)										
				Dobni (2008)										
				Ruiz-Moreno et al (2008)										
22	KFL22	Stories & Myths	Jassawala & Sashittal (2002)					Ahmed (1998)	1	0	0	3	Yes	One empirical and three theoretical sources
								Higgins & McAllaster (2002)						
								Nanda & Singh (2009)						
23	KFL23	Talent & Creativity	Kenny & Reedy (2006)	Khazanchi et al. (2007)	Jassawala & Sashittal (2002)	Scott & Bruce (1994) Systematic problem solving	Scott & Bruce (1994) Intuitive problem solving	Martins and Terblanche (2003)	9	0	0	3	Yes	
				Jamrog et al. (2006)				Claver et al. (1998)						
				Dobni (2008)				Ahmed (1998)						
				Koc (2007)										
				Valencia et al. (2011)										
				Patterson et al. (2008)										
				Valencia et al. (2010)										
				Wang & Ahmed (2004)										

No.	Code	Factors	Empirical Evidence (References)					Theoretical References	Strength of Evidence				Selection Yes/ No	Comments
			Positive Impact			Negative Impact	No impact		Positive	Negative	No Impact	Theoretical		
			Very Strong Evidence	Strong Evidence	Weak Evidence									
24	KFL24	Task Orientation		Hartmann (2006)	Chang & Lee (2008)			Higgins & McAllaster (2002)	4	0	0	2	Yes	
				Khazanchi et al. (2007)				Nanda & Singh (2009)						
				Cassia-Bava et al. (2006)										
				McLaughlin et al. (2008)										
25	KFL25	Team composition		McLaughlin et al. (2008)					3	0	0	0	Yes	
				Saleh & Wang (1993)										
				Mohamed (1995)										
26	KFL26	Technology tools to support innovation		Dombrowski et al. (2007)	Tan et al. (2008)			Hauser (1998)	2	0	0	3	Yes	
				Mohamed (1995)				Bessant (2003)						
								Martins and Terblanche (2003)						
27	KFL27	Workgroup support	Amabile et al. (1996)	Saleh & Wang (1993)	Tan et al. (2008)	Jankyte & Dressler (2005)	Scott & Bruce (1994)	Claver et al. (1998)	5	2	1	3	Yes	
				Wang & Ahmed (2004)	Chang & Lee (2008)	Jaskyte (2004)		McLean (2005)						
				Mohamed (2002)				Bessant (2003)						
				Malaviya & Wadhwa (2005)										

Please note that this table was already presented as part of Appendix 1-1. But for ease of reference, this has been repeated here again.

APPENDIX 3-4: INVESTIGATING FACTORS OF CULTURE AND THEIR IMPACTS ON INNOVATION CULTURE

This study is in line with the scholarly work that looks at factors of innovation culture that have an impact on innovation. This type of investigation is also aligned to how corporate cultures have been studied with regard to outcomes (such as innovation[98]), with the recognition that factors of culture relevant to innovation outcomes are not likely to be identical to those of other outcomes (Tellis et al., 2009). Bourgeois (1979) calls for middle-range descriptions – descriptions that do not deviate from the holistic view of the concepts (organizational culture) being studied – while specifically noting down the particulars (factors of innovation culture) with regard to the outcome in question (innovation). For example, Homburg and Pflesser (2000) studied the factors of a culture that are most relevant to market orientation; Webster (1990) studied factors relating to marketing culture of service firms; Jyothibabu et al. (2010) studied the factors of culture that relate to learning; and likewise Wilson (2001) looked at factors of the corporate culture of marketing. In the same vein, factors of innovation culture have been derived based on the impact of culture on innovation as an outcome. Each of the factors of innovation culture has been reviewed from the perspective of the impacts they have on various outcomes relating to producing innovation. The outcomes relate to establishing creativity (the initial stage of innovation related to idea generation), implementing innovation, successfully embedding innovation into organizations (where relevant), and in turn also building the capacity or capability to innovate; all of these outcomes contribute to creating a culture of innovation.

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[98] *Although the innovation outcomes impacted on by culture are varied in nature, they broadly fall into the categories of group innovation (e.g., Anderson & West, 1998), innovation performance (e.g., Chandler et al., 2000; Tan et al., 2008), innovation implementation (McAdam et al., 2010), product innovation (e.g., Valencia et al., 2010), process innovation (Khazanhi et al., 2007), organizational innovation (Jaskyte, 2004; Jaskyte & Dressler, 2005), administrative innovation (e.g., Hoffman, 1999), structural innovation (e.g., Hoffman, 1999), innovation capacity (Koc, 2007), innovation capability (e.g., Çakar & Ertürk, 2010), absorptive capacity (e.g., Caccia-Bava et al., 2006). Innovation capability, innovation capacity and absorptive capacity are terms that relate to the idea of exploitation of information within an organization and how that builds the ability or propensity to innovate (Caccia-Bava et al., 2006; Çakar & Ertürk, 2010; Koc, 2007). Group innovation relates to innovation outcome produced by a group. Innovation implementation relates to the ability to implement innovations (McAdam et al., 2010). The full list of definitions is presented in Section 3.4.3.*

APPENDIX 3-5: FACTORS (FROM SLR) EXCLUDED FROM THE FINAL LIST

There are a few factors that were mentioned by either a single empirical paper or a single (or more) theoretical paper/s, but were not included in the final list as per the approach used as part of the systematic review protocol (see Appendix 1-1, A.3 Stage 3). A few examples are discussed here. First, Jassawalla and Sashittal's (2002) study showed how 'rituals' such as formal meetings and sharing information, exchanging and developing ideas, expressing disagreement, managing conflict etc. are commonly noted in innovation-supportive cultures. They suggest that cultural rituals channel people's focus and energy towards social, interactive tasks and goals. Higgins and McAllaster (2002) in their theoretical paper, however, emphasize successful sales campaigns, performance management systems, and reward ceremonies. Both the studies have used the term 'rituals', but the two studies did not have any consistent definition and hence 'rituals' could not be considered in the final list of 27 factors. Second, Kivimäki et al. (2000), through their empirical study, identified 'internal communication' and its effectiveness as having an impact on organizational innovation. This is different from open communication in that it broadly refers to internal formal communication. But because this is the only paper that mentions internal communication, it has not been considered to be part of the final list of 27 factors. Third, McLaughlin et al.'s (2008) study identified internal and external confidence as two separate factors that are important for teams in the context of radical innovation. While the former relates to internal confidence of the teams to resolve problems, the latter refers to the confidence of members (particularly management) outside the development team about how the development teams would perform. However, these factors were not studied or reported as important in any other study, even those related to radical innovation (e.g., Tellis et al., 2009). Hence, these two factors were not included in the final list. Finally, Tellis et al.'s (2009) study noted the importance of 'internal competition', i.e., consciously allow the various divisions to actively compete internally with each other in order to gain new markets. However, this is the only study that highlighted this aspect in the literature and hence it did not make it to the final list. Tellis et al. (2009) also studied the focus on patents and found no link between focus on patents and innovation outcomes. Hence, this too did not make it to the final list. These are

just a few examples of factors that did not make it to the final list (see Appendix 1-1, A.3 Stage 3, for the full list of factors and also the shortlist).

APPENDICES FOR CHAPTER 4

APPENDIX 4-1: CASE STUDIES IN THE LITERATURE – ANALYSIS

Within the literature (i.e., within the consideration set of 74 papers used for the systematic literature review), there are very few studies that have used the qualitative methods that case studies usually use, although there could be case studies that use quantitative methods as well (Yin, 2012), none was found in the consideration set. A two-level filtering has been applied to the consideration set to shortlist relevant studies:

- Level 1: Selection of papers that directly relate to innovation culture and the primary source of data collection was interviews (semi-structured/unstructured and in-depth)
- Level 2: The papers explicitly stated that they used case studies, quoting the use of multiple sources of data collection as confirmatory evidence

From the first level of filtering, the following papers were shortlisted:

(1) McLaughlin et al. (2008)
(2) Dombrowski et al. (2007)
(3) Hartmann (2006)
(4) Jassawalla and Sashittal (2002)
(5) Judge et al. (1997)

From the level 2 filtering, the first three papers were selected i.e., 4 and 5 of the above list were eliminated. Although both 4 and 5 did a comparison of successful and less successful organizations, they have not been included in the final list. Jassawalla and Sashittal (2002) have not stated explicitly that they have used a case study approach, although they did use two sources of data (interviews and observations). However, they did not discuss triangulation of data sources for any confirmatory evidence through multiple sources of data. Judge et al. (1997) used only one source of data collection which was interviews and theirs

was clearly not a case study. Therefore, these two papers were not considered for the detailed analysis here. The first three have been included in the detailed analysis.

Dubé and Paré (2003) provided a framework for analyzing case studies. While what they call 'positivist case research' sounds oxymoronic, it was indeed a useful endeavour to look at the various evaluation criteria they noted to define what a good case study is. Appendix 4-1 provides details of the analysis of the three shortlisted case studies against the following relevant and applicable criteria of a good case study (for both design and data collection and analysis): Clear RQ, *a priori* specification of constructs and clean theoretical slate, Theory of interest (ToI), predictions from theory and rival theories, Unit of analysis, multiple-case/single case design, Pilot interviews, Context of case study, etc. From the analysis, of the various criteria under consideration, the following have been identified as the areas in which this research, through the case study, could make a greater contribution.

- *Rich, comparative analysis with the extant literature:* The above case studies reviewed do not provide that level of detail in regard to comparative analysis with the literature, although Dombrowski et al. (2007) documented some of the case-related information. This has been identified as a potential area of contribution as much can be learnt from undertaking a rich comparative analysis of findings with the literature based on results from the case studies.

- *Comprehensive within-case analysis:* The above case studies also do not demonstrate any level of comprehensive, within-case analyses, except for McLaughlin et al.'s (2008) work. The proposed study can ensure that best practice methods are defined *a priori*, a database of data collected is maintained, and analysis instruments are designed in advance. This ensures that there is a clear description of the methods used, an ability to provide a logical chain of evidence, and also traceability to the RQs.

- *Multiple cases and comprehensive cross-case analysis:* Given the challenging RQs of identifying the most important factors of innovation culture and why they are considered to be important, a comparative analysis for cross-cases not only provides robust evidence to answer the RQs, but also the ability to challenge some of the existing theories by

focusing on why some factors are less/more important than others, as this discussion does not currently exist in the literature.

- *Consideration of industry context:* None of the above case studies discusses industry context in regard to the relevance of the factors of innovation culture. This provides an opportunity for this study to explore the factors important for innovation culture to understand, in addition to answering the RQs, how the specificity of an industry could play a role in defining what could be important for innovation culture.

- *Validity through case study review by key informants:* While all three cases provided some form of validity check, the researcher for the current research could go back to the key informants to present the case findings to not only validate the meanings of the terms informants used but also validate the overall results that are obtained. This could be built into the case study design and would provide more confidence in the results obtained.

The gaps discussed above, therefore, highlight or indicate an opportunity to generate valid and thorough empirical work through a multiple case study research design. Stake (2006) discusses the importance of understanding the phenomenon (innovation culture) over the cases themselves. The purpose of the multiple case study approach is to understand the 'quintain' i.e., the phenomenon of interest, which is innovation culture, beyond the individual cases (Stake, 2006). So, multiple cases can be used for instrumental purposes here, i.e., cases can be used as an instrument to better understand the phenomenon (Stake, 2006).

Please refer to Table 1 Appendix 4-1, Table 2 Appendix 4-1 for a detailed analysis of the three shortlisted papers against the criteria provided by Dubé and Paré (2003) and also how this study aims to meet the quality criteria of a good case study):

- Rich, comparative analysis with the extant literature
- Comprehensive within-case analysis
- Multiple cases and comprehensive cross-case analysis
- Consideration of industry context
- Validity through case study review by key informants

Rich, comparative analysis with the extant literature

Dubé and Paré (2003: p. 620) suggest that *"when building theories from case research, it is of utmost importance to compare the emergent concepts, theory, or hypotheses with the extant literature."* The detailed review of the extant literature that conflicts with the emergent theory enhances confidence in the findings and *"forces researchers into a more creative, frame-breaking mode of thinking than they might otherwise be able to achieve"* (Eisenhardt, 1989: p. 544). This aligns well to the proposed RQs, as the questions are asked because the literature review identified conflicting evidence about the importance of the factors of innovation culture. The existing case studies have not made a detailed comparison of their empirical results with the extant literature and why, if any, there were any contradictory results. Dombrowski et al. (2007) highlight some aspects as very important and relevant, but missed, for example, the emerging theory around "client focus" and why it is important; Jamrog et al.'s (2006) study highlights this to be one of the top factors of innovation culture. Dobni (2008) also confirms this as very important. McLaughlin et al. (2008) have provided some analysis, comparing their results with the extant literature, thus keeping falsification as their core focus, which is what a single case study tries to achieve (Robson, 2002; Thomas, 2011); their study concluded that factors of innovation culture, although they might be similar, take different degrees of manifestation depending on whether it is incremental or radical innovation. However, they too did not focus on comparing and contrasting their results with those from other studies. Hartmann (2006) also does not provide any detailed comparison with the literature. Please refer to Table 2 Appendix 4-1 (No. 13) for a comparison across the three papers.

Comprehensive within-case analysis

McLaughlin et al.'s (2008) work was comprehensive in that their study's focus was a detailed within-case analysis of a single organization. The other two studies have not described the approach to the analysis they followed. All three studies have claimed they have used

triangulation of data sources. However, only McLaughlin et al. (2008) explained how it was done as they elucidated the process of analysis; the authors of the other two papers did not. Concerning the methods/techniques used for data analysis, McLaughlin et al. (2008) have explained what methods they used and why with clarity on the logical chain of evidence; the authors of the other two papers did not. Case studies have also been criticized for lack of rigour in data collection and analysis (Yin, 2012) and the lack of analysis was clearly evident in the papers by Dombrowski et al. (2007) and Hartmann (2006). This study ensured that best practice methods are defined *a priori*, a database of data collected is maintained, and analysis instruments are designed in advance (from the pilot study and learnings from Case A as discussed in Chapter 5). This ensured that there is a clear description of the methods to be used, an ability to provide a logical chain of evidence, and also traceability to the RQs. Dubé and Paré (2003: p. 621) suggest that *"Exploratory case researchers must continue to define a priori constructs in order to help them make sense of occurrences, ensure that important issues are not overlooked, and guide their interpretation and focus when conducting theory-building research."* This is something that this study endeavoured to do through the 27 factors, which were mapped to Martins and Terblanche's (2003) innovation culture model and Schein's (1985) three levels of organization culture. There is already a rich description of these factors including details of any contradictory evidence available from the literature. The results from the proposed study are traced back to these factors for comparative analysis (see Chapter 8). Please refer to Table 1 Appendix 4-1 (Nos. 2, 3) and Table 2 Appendix 4-1 (Nos. 1, 2, 3, 4 and 5) below for a comparison across the three papers.

Table 1 Appendix 4-1: Evaluation Criteria for Research Design in a Case Study

No	Evaluation Criteria	McLaughlin et al. (2008)	Dombrowski et al. (2007)	Hartmann (2006)	This Research Study
1	**Clear research question [validity]**	Yes - to identify key factors of radical innovation	Not clearly evident, but could infer from the work done – it is around identifying the core factors of innovation culture	Focus has been on innovative behaviours through managerial action – no direct relevance to my study, but provides insights into innovation culture	The RQs are based on the gaps and key conclusions from the systematic literature review. A clear rationale and traceability has been provided to the gaps in the literature (see Chapters 3 and 4)
2	***A priori* specification of constructs and clean theoretical slate [validity]**	Grounded approach was used but the basis of analysis was Schein's (1985) model for culture	Yes they claimed there is, but they have not specified what it was or how comprehensive it was	Yes - the model was limited only to four areas: Communication, Recognition, Participation, and Symbolism	The study has identified "a priori" a set of 27 factors (all organized into 5 areas - conflation of Schein's culture and Martins and Terblanche's innovation culture models) to guide the research process
3	**Theory of interest (ToI), predictions from theory and rival theories [internal validity]**	ToI: Innovation culture. Suggested a theory that although the factors might be the same, their strength and degree of applicability vary on a continuum for incremental and radical innovations	ToI: Innovation culture. No details of the specification of the initial set of factors that were ranked. Identified eight core factors of innovation culture, but here coverage is not complete (e.g. client focus has not been considered)	ToI: Innovation culture, but the core was "motivation" as a lever for managers to innovate. This is more theory-testing (tested four factors: Communication, Recognition, Participation, and Symbolism)	ToI: Innovation culture. It tentatively identifies the factors of innovation culture and organizes them into a conceptual framework. Consideration of rival theories - highlighted the importance of certain factors not studied but why they might be important (e.g. physical layout, client focus, etc.)
4	**Unit of analysis [validity]**	Organization	Organization	"The process of innovation" is evident as the unit of analysis	The consulting "LoB" at an organizational level has been used as the unit of analysis

5	Multiple-case design [validity], A Single Case Design	This is a single case within a single organization with 26 interviews with key informants	This is a multiple case study design with semi-structured interviews - 30 companies across America and Europe. The nature of the context is not specified and also details of number of interviews and any thematic analysis have not been published.	This is a single case. 16 single interviews in two rounds have been conducted. A different set of users (4) was used to validate the results (not clear as to why a different set of users was used to validate)	A multiple case study (3 cases) has been used. 36 interviews – 12 within each case organization plus a review of documents and a light touch approach on observations Used key informant approach to validate results from the individual case studies
6	Pilot interviews	No pilot interviews have been specified	No pilot interviews have been specified	No pilot interviews have been specified	Pilot interviews and dry run of research design was utilized to refine research design
7	Context of case study [reliability and validity]	Manufacturing Industry. There is no explanation of how possibly the industry could play a role in shaping the factors of culture	No discussion on the context, although they mention that context is important to refine the key factors. They do not discuss the relevance of the factors they identified and how they map on to the organizational aspects highlighted. This work can be questioned on universalizing factors of innovation culture without controlling for the context (study was done across geographies and across industries)	Construction Industry. There is no explanation of how possibly the industry could play a role in shaping the factors of culture	The context of this study is the PSF industry, more specifically, IT consulting, management consulting and engineering consulting. There is little published research in this context, so this presents a unique opportunity to understand innovation culture in the PSF context and also contributes to further the understanding of the phenomenon of innovation culture
8	Team based research [reliability]	N/A	Yes - 5 researchers have been involved	N/A	N/A
9	Different roles for multiple investigators [reliability]	N/A	Yes - 5 researchers have been involved	N/A	N/A

Table 2 Appendix 4-1: Evaluation Criteria for Data Collection and Data Analysis in a Case Study

No	Evaluation Criteria	McLaughlin et al. (2008)	Dombrowski et al. (2007)	Hartmann (2006)	This Research Study
1	**Elucidation of data collection process [reliability, replication, validity]**	Process of data collection has been discussed in detail	Highlighted the data collection sources, but process has not been discussed	Highlighted the data collection sources, but process has not been discussed	The data collection process is discussed in detailed in Chapter 4. The findings from each case are recorded in individual chapters (5, 6 and 7) to enable the reader to follow the development of the results to be collated for further analysis in Chapter 8.
2	**Multiple data collection methods; Mix of qualitative and quantitative methods [reliability]**	Highlighted the data collection sources and methods used	Highlighted the data collection sources and methods used	Highlighted the data collection sources and methods used	The data collected are mainly qualitative. The study has used multiple sources of evidence and data collection techniques (discussed in Chapter 4)
3	**Triangulation [reliability]**	Claimed triangulation. Provided details of how it was done	Claimed triangulation, but details of how this was done has not been specified	Claimed triangulation, but details of how this was done has not been specified	The study utilized triangulation of data sources (presented in individual case study Chapters 5, 6 and 7) and of theory from the review of literature (through cross-case in Chapter 8)
4	**Case study protocol and case study database [reliability, replication]**	No reference to this	No reference to this	No reference to this	The case study database and organization of the material was discussed in some detail in the submission (Chapters 4, 5, 6, and 7), following Miles et al. (2014) on this.
5	**Elucidation of analysis process [reliability]**	Provided details of the approach used for data analysis	No reference to this	No reference to this	Data collection and analysis are carried out in parallel. Care was taken to document the process, substantiate statements, and clearly display the evidence.

6	**Field notes, coding, data displays [replication; external validity]**	Provided details of the approach used for data analysis and a rich description of the case analysis has been provided	No reference to this	No reference to this	Field notes are taken and filed electronically. A full list of codes and the associated description for each has been developed with clear traceability to literature. The codes are used for analysis purposes.
7	**Logical chain of evidence [internal validity]**	Provided details of the logical chain of evidence. However, because this is undertaken within a group, the findings should have been interpreted in the context of group/team innovation	No logical chain of evidence has been presented - only findings have been reported	No logical chain of evidence is presented - only findings have been reported	Attempts are made to set up the trail of evidence and are presented in a readable fashion in the case presentation (Chapters 5, 6 and 7)
8	**Empirical testing & Time series analysis [internal validity]**	Grounded approach was used	No details of the analysis undertaken are published	No details of the analysis undertaken are published	The research purpose as stated at the beginning is exploratory. So, theory building, refinement and description are the focus. The dominant form of analysis is explanation-building, and no time-series analysis is involved
9	**Cross case comparisons [internal validity]**	N/A	The case description neither provides any within-case analysis nor cross-case analysis. Only themes that emerged from the overall research were discussed	N/A	A detailed account of the within-case (Chapters 5, 6 and 7) and the cross-case analysis (Chapter 8) are presented
10	**Use of natural controls [internal validity]**	No mention has been made about any kind of controls	No mention has been made about any kind of controls	No mention has been made about any kind of controls	This is not particularly relevant in a very qualitative endeavour where experimental set up is not considered
11	**Quotes [reliability]**	References to the literature have been provided with reasonable rigor	References to the literature have been provided with reasonable rigour	References to the literature have been provided, but lack rigour	Quotes are taken from the academic literature, press, industry sources and internal company documents, ppt. etc.

12	**Project reviews [reliability]**	Cases were presented to the people who were interviewed. This involved the playback of the collective cognition of the group involved	It is claimed the results have been reviewed by 5 researchers. Also, the case analysis results were played back to the key informants for confirmation	No reference to this	Emerging themes are discussed with the key informants. Additionally, the results are reviewed by supervisors and the internal review panel (presented results from cross-case analysis, Chapter 8 in Third PhD Review)
13	**Comparison with literature [validity]**	References to the literature have been provided, but focus has not been on comparison and contrast. Instead it was on developing theory through grounded approaches	Selective references to the literature have been provided, but focus has not been on comparison and contrast	Selective references to the literature have been provided, but focus has not been on comparison and contrast	Emerging themes/key factors from the empirical field work are continually referred to, and compared and contrasted with the literature (presented in cross-case analysis, Chapter 8)

Multiple cases and comprehensive cross-case analysis

Only Dombrowski et al. (2007) could have potentially provided a rich and comprehensive cross-case analysis given that there were 30 companies and five researchers involved. However, they have not explicitly provided any details of the cross-case analysis they might have undertaken. This study endeavoured to provide both a detailed account of the cross-case analysis (Chapter 8), which provided more robust and convincing results (Yin, 2012). McLaughlin et al.'s (2008) and Hartmann's (2006) studies are single case studies and could not possibly have provided cross-case analysis accounts. Eisenhardt (1989) suggests that searching for patterns within cross-case studies supports exploration and analysis of both similarities and differences, thus providing a very rich view of the phenomenon under investigation. Given the challenging RQ of identifying the most important factors of innovation culture, a comparative analysis for cross-cases not only provided robust evidence to answer the RQ, but also provided the ability to challenge some of the existing theories by focusing on why some factors are more important than others, especially in the context of PSFs. Dubé and Paré (2003: p. 621) suggest that *"More studies with multiple cases are needed in order to develop and test more robust theories. Multiple cases also have the potential to yield more compelling evidence."* Please refer to Table 1 Appendix 4-1 (No. 5) and Table 2 Appendix 4-2 (No. 9) for a comparison across the three papers.

Consideration of industry context

Industry context is an important aspect for a study on innovation culture, as context plays an important role, given that some factors become more prominent (Dorabjee et al., 1998; Dombrowski et al., 2007). This is from the point of view of interpreting the results and generalizing them, especially in the context of doing qualitative research (more so in the context of a case study research) (Miles et al., 2014; Yin, 2012). McLaughlin et al. (2008) and Hartmann (2006) have done the research specifically in the context of an industry – they do not explain the results in that context though. Also, Dombrowski et al. (2007) have undertaken their study across geographies and no specific industry has been mentioned in

their paper. Industry plays an important role in shaping the dynamics of an organization (Dorabjee et al., 1998). This may include aspects around competition, the array of products and services offered, what channels of external knowledge are available (Dombrowski et al., 2007), etc. Dombrowski et al. (2007) acknowledge that this is important; however, ironically, they do not clearly highlight the differences they would have noted from their research across 30 companies. They could have potentially provided some insight into what aspects of an organization (influenced by industry dynamics) have an impact on what factors of innovation culture broadly. This research is in the context of the PSF industry. This provided an opportunity to explore what aspects are important for innovation culture and seeks to understand, in addition to answering the RQs, how the specificity of an industry plays a role in defining what could be important for innovation culture. This, in a sense, seeks to explore any rival theories around the most important factors of innovation culture and challenges the current thinking around the relevance of those the literature highlights as important. Please refer to Table 1 Appendix 4-1 (No.7) for a comparison of use of context across the three papers.

Validity through case study review by key informants

Although a review with key informants does not appear to be very important on the face of it, Yin (2012) suggests that a thorough review with the key informants ensures the validity of the research results. Except for Hartmann (2006), the other authors have given a presentation back to the key informants to validate the information captured and the analysis that was done. Hartmann (2006) worked with a parallel team of four individuals to reconstruct the findings and validate the results. But he did not report how that review was useful and what degree of validation was done. This research ensured the results are played back to the key informants to not only validate the meanings of the terms people used but also the overall results that are obtained. In a qualitative endeavour such as this (involving culture), it was critical to validate both meanings and the overall findings to ensure the consistency and validity of the work undertaken. Often, it is possible that, in the studies related to culture, the context in which the words are said requires a significant amount of

understanding to lend credence to the research findings. Please refer to Table 2 Appendix 4-1 (No. 12).

In summary, based on the analysis results presented above, the multiple case design has been chosen as it can help in understanding the phenomenon across cases better (Stake, 2006). Also, this approach was taken as it would be difficult to point out a single revelatory case (Thomas, 2011) and, given that there are a number of organizations that claim to be innovative, it can be argued that multiple cases can provide better findings in regard to the 'quintain' (i.e., the phenomenon of innovation culture) under study. So, to enhance the confidence in findings, multiple typical cases have been selected to develop a rich view through comparison (Thomas, 2011). Therefore, the gaps discussed above provided an opportunity to generate valid and thorough empirical work through a multiple case study research.

Also, the researcher would like to highlight some of the key drawbacks of case study research based on the analysis that was undertaken. Apart from the fact that case studies are very time-consuming and require thorough preparation, the following are generally the three main concerns (Easterby-Smith et al., 2008; Thomas, 2011; Yin, 2012):

- They lack academic rigour, a prejudice which originates most often from 'quick and dirty' examples
- They may provide little basis for scientific generalization, as case studies are usually only generalizable to a theoretical framework, but not necessarily to a population
- They can result in massive, unreadable documents – again a criticism based on bad examples of case study research

Thus, the task of designing case studies has not been underestimated, especially concerning the resources needed and the care that is required for preparing, conducting multiple cases in different organizations, and making choices around the sources of data collection. While this research acknowledges the challenges, immense care was taken to

ensure the quality of the research work meets good academic standards of quality research work. This is discussed in Section 4.3.6.

APPENDIX 4-2: FULL REPERTORY GRID INTERVIEW PROTOCOL

Interviewer: I am a part-time researcher at Cranfield School of Management, UK. My research subject is innovation culture and my interests are specifically in the area of identifying the factors of innovation culture and why they are important. As part of this, I am interviewing a number of managers, senior managers and partners of the company for their perceptions on factors of innovation culture. The interview will last for approximately one hour, if you have nothing against it, I would like to record it – then I will not have to take so many notes. The recording will only be used to produce a transcript of the interview and will be kept completely anonymous. Do you mind if the interview is recorded?

Interviewee: Responds….

Interviewer: The type of interview that I am using is standardized, so that I can compare the results across interviews. It involves two stages. For the first stage, I would like you to consider six organizations: your previous organization, your ideal organization, your current and three clients you have extensively worked with. We will call these "elements" for the purpose of this discussion. If you do not like to name the organizations, you can give pseudonyms – Ace, Branded, Crashed, Delight, etc.). I will write the name of each organization on a separate card. Cards are then numbered, using the prepared random number process. The cards numbered 1 to 3 are selected. Now I am going to show you three cards (these will show three organizations, not necessarily in the order you have named them), we will call them a triad. Can you think of how two organizations are similar but different from the third in terms of their culture of innovation?

Interviewee: Splits the three cards into two similar and one different and names construct 1 (an example could be "easy to work with")

Interviewer: You decided that two of the organizations were similar to each other, from an innovation culture standpoint, and different from the third in that . . . {construct 1}, which we will call "positive pole" and what do you think is the opposite of this (i.e., opposite of construct 1 will be the "negative pole", can be "difficult to work with" for example)?

Interviewee: Responds….

Interviewer: Now, as the second stage with these three organizations, could you please rate them on a scale of 1 to 5 (where 1 refers to the organization being closest to the positive pole and 5 refers to the organization being closest to the negative pole). For example, if we take

"easy to work with" as the positive pole and "difficult" as the negative pole, "easy to work with" will be rated 1 and "difficult" will be rated 5.

Interviewee: Rates the cards in the triad

Interviewer: Now let us sort through the other cards and rate them on the same scale, for the construct you have named. Can you rate [show another card, other than the ones in the selected triad] this organization on 1 to 5?

Interviewer: Now, can you rate [show yet another card] this organization… {Repeat until all cards are dealt with}. Repeat the process as described above for each construct that is elicited.

Interviewer: Now we will consider another group of three cards. Can you think of how two organizations are similar but different from the third in terms of their culture of innovation? Remember that we have already identified a/several important constructs {Read previous constructs elicited, if required}.

After the constructs have been elicited…..

Interviewer: Thank you very much for agreeing to participate in the study. I will be organizing a group discussion shortly to present all the results to the interviewees who participated in this study. I would like to understand how as a group you'd think about innovation culture. Please could I request you to participate in the discussion? It will be scheduled at a mutually convenient time and location as well.

Interviewee: Responds…

Interviewer: Thank you very much…..{take contact details and find out more on availability}

APPENDIX 4-3: REP GRID ANALYSIS – FREQUENCY AND VARIABILITY CALCULATIONS

No.	Final list of Meta Construct	Constructs	Reference	Frequency	% Respondents	Variability of each construct	Meta construct Variability	Key Factor?
1	Innovation focus at all levels	Emphasis on innovation at all levels	Interview 1	5	41.67	91.7	6.60	No
		Direction at the ground level	Interview 3			57.42		
		Leadership on the ground	Interview 12			76.78		
		Managers' support in enabling people for innovation	Interview 6			85.68		
		Highly engaged employees	Interview 9			73.59		
2	Rewarding Innovation	Rewards	Interview 1	8	66.67	91.7	8.99	Yes
		Reward and recognition programme for innovation	Interview 9			128.7		
		Rewards/payoff	Interview 3			143.55		
		Policies (Rewards and Recognition) related to Innovation	Interview 12			123.31		
		Processes to incubate innovation (incl. rewards)	Interview 4			83.27		
		Incentives to employees	Interview 5			80.74		
		Rewards and recognition	Interview 6			124.32		
		Rewarding and recognizing people	Interview 10			63.15		

This is only for illustrative purposes. The shaded row (green) here is being used to illustrate that eight users mentioned "Rewarding Innovation" as important and the averaged normalized variability (ANV) is 8.99 (which is greater than 8.57, the average variability per construct across grids – see below for details). Further, because of the frequency of the constructs 66.67% (which is greater than 25%) and the ANV (which is greater than 8.57), 'Rewarding Innovation' has been identified as an important meta-construct for innovation culture. The variability measure is dependent on the number of constructs in a grid. For example, if 10 constructs were elicited from an interviewee, the average variability would be 10% (i.e., 100/10=10) (Goffin et al., 2010). For the analysis, therefore, the variability from different grids with a varied number of constructs was normalized. This was achieved by multiplying the number of constructs by the variability within the single grid (using "Idiogrid" version 2.4 software) and dividing by the overall variability across all the grids (Goffin et al., 2010). The ANV can then be calculated as follows:

ANV for each construct = (Variability of each construct * # of constructs in the grid/

Average number of constructs across all interviewees)

```
Descriptive Statistics for Constructs
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	Valid N	Mean	Median	Mode	Number of Modes	Standard Deviation	Sum of Squares	% Total Sum of Squares	Skewness	Kurtosis	Minimum	Maximum
People wanting to explore and pilot new areas	6.00	3.33	3.50	5.00	1.00	1.63	13.33	10.57	-0.45	-0.85	1.00	5.00
If you fail it is okay	6.00	3.67	4.00	5.00	2.00	1.51	11.33	8.98	-1.50	0.88	1.00	5.00
Investment Vehicle to Fund Innovation	6.00	3.00	3.00	3.00	1.00	1.41	10.00	7.93	0.00	-0.17	1.00	5.00
Acquire startups for innovation	6.00	3.17	3.50	4.00	1.00	1.47	10.83	8.59	-0.49	-0.49	1.00	5.00
Higher proportion of people who like difference/ variation vs. routine	6.00	2.50	2.00	2.00	1.00	0.84	3.50	2.77	1.82	0.82	2.00	4.00
Flexible corporate structure	6.00	3.17	3.00	5.00	2.00	1.72	14.83	11.76	-0.03	-1.36	1.00	5.00
Making innovation related commitments to clients	6.00	2.83	3.00	4.00	2.00	1.72	14.83	11.76	0.03	-1.36	1.00	5.00
External (e.g. industry) push to innovate	6.00	2.33	2.00	2.00	2.00	1.51	11.33	8.98	1.50	0.88	1.00	5.00
Higher proportion of younger to older	6.00	2.83	2.50	2.00	1.00	1.47	10.83	8.59	0.49	-0.49	1.00	5.00
Good knowledge sharing culture	6.00	2.67	2.50	4.00	2.00	1.21	7.33	5.81	-0.09	-0.89	1.00	4.00
Push-the-boundary supply chain (e.g. partners)	6.00	3.00	3.00	5.00	2.00	1.90	18.00	14.27	0.00	-1.54	1.00	5.00

```
Note. Multiple modes exist for at least one construct. The largest mode is reported.

Total SS for Constructs:    126.17
```

Figure (Appendix 4-3): *Sample descriptive statistics (Idiogrid output) – Variability of each construct came from % Total sum of squares

Average number of constructs = (10+11+11+11+11+12+12+12+12+15+11+12)/12 = 140/12= 11.67 (for the 12 interviews within Case A for example)

Average normalized variability across interviews = 100/11.67 = 8.57

Therefore, for any construct to be most important, the ANV has to be at least 8.57 in addition to being most frequently (at least by 25% of the interviewees of course) mentioned. From this analysis, not only are the ones that are less important eliminated (ones with low frequency and low variability), the ones that are hygiene factors (the ones with high frequency but low variability) surface (Rogers & Ryals, 2007) and an example of this is "Innovation Focus at all levels" in the above table. The hygiene factors provide a view of what is generally taken for granted as available (Goffin et al., 2010). This is an important view, given the nature of the phenomenon and the factors on which the organization needs to focus. Also, the analysis of frequency and variability differentiates between frequently mentioned factors and those that are most important (Goffin et al., 2012).

Example: ANV for "Rewarding Innovation" = (91.7**+ 128.7+ 143.55+ 123.31+ 83.27+ 80.74+ 124.32+ 63.15)/ (11.67*8) = 8.99

**Note: This was calculated based on the individual variability of the construct "Rewards" from interview 1 multiplied by the total number of constructs in this grid from interview 1.

APPENDIX 4-4: PROTOCOL FOR FOCUS GROUP DISCUSSION

Interviewer: First of all, I want to sincerely thank you for being present for this focus group discussion. This discussion will last for approximately two hours and, if you have nothing against it, I would like to record it – then I will not have to take so many notes. The recording will only be used to produce a transcript of the interview and will be kept completely anonymous. Do you mind if the discussion is recorded?

Group: Responds….

Interviewer: I have met you all before. But for the benefit of group, could you please tell us who you are, which practice you come from?

Interviewer: Before we begin, here is a quick overview of what we will be doing today. This group discussion in particular is the second part of the research process. The key focus of this discussion is that when you are presented a summary of the analysis and results from the data gathered from the interviews, questions concerning the results will be asked in terms of the relevance of the factors to your organization and what can be done better.

Introductory Question
Interviewer: This is the list of factors that emerged as important for an innovative culture. Could you all individually record your thoughts on post-it notes? What are your initial thoughts? {call at random to initiate the discussion}

Key Core Questions
Interviewer: For each of the factors on the priority list {hand out the list of factors to each of the participants}, please could you answer the following from an innovation culture perspective:

Question 1: What is the relevance of the factor to your organisation?

Question 2: Are there specific initiatives within the organisation that correspond to the factor?

Question 3: What can you do better?

APPENDIX 4-5: PILOT STUDY AND RESEARCH DESIGN AMENDMENTS

The researcher had access to Case A to undertake a pilot study. So, the researcher undertook a basic pilot study (which was later converted into a full case study A) in order to propose an initial design to the PhD review panel (for Second PhD Review) at Cranfield School of Management. The initial proposed design included 12 rep grid interviews to answer RQ1 (and also as supporting evidence for RQ2), two FG discussions: one to gather data to answer RQ2 and one to gather data on the context of the organization through developing a culture web using Johnson's culture web (Johnson, 2000) for the case company, detailed document collection and analysis, and detailed observations.

This proposal was made based on two initial rep grid interviews, which went well, two quick two-member simulated group discussions as a surrogate for the two FGs proposed, document collection and some observations of the main central office of Case A in London. However, the review panel at Cranfield School of Management (for the Second PhD review) felt the proposed design was too complex because of the number of sources and the amount of data that would need to be gathered, which would then be time-consuming and consequently impact on the time needed for analysis. The researcher was asked to revisit the research design and make changes to simplify the research design.

While the researcher made a few amendments concerning the sources of data in terms of the amount of data required to be gathered and how it would be used for analysis to answer the RQs, the total number of sources itself was retained. This was for the following reasons:

▪ *Multiple sources within/across cases can confirm/disconfirm evidence:* From the pilot study, it was understood that multiple sources do contribute to gathering more data around the phenomenon as it occurs in the context of the organization. For example, while the two participants interviewed mentioned 'rewards and recognition' was important to them, for the researcher, the records in annual reports also reinforced the focus on rewards

for innovation. This approach could be applied across cases as well to confirm/disconfirm evidence.

▪ *Multiple sources pre-empt the problem of sufficiency of data:* There is a definite disadvantage in terms of insufficiency of data when only a single source is used, hence the decision to use multiple sources of data (Yin, 2012). When one of the pilot interviewees talked about 'rewards and recognition', it also emerged from observations (another source of data) that the company had displays of people being rewarded, and emails announcing rewards for innovators with specific details of why an innovation campaign was launched. Also, the annual report provided a considerable amount of information on why the organization focused on rewards for employees.

▪ *Multiple sources provide robust evidence base:* While the number of interviews per case (as one source of data) is small (12 per case study), the progressive and targeted building of the case data through other sources helps – the FG to look at the reasons, documents to look at the general organizational context in which the phenomenon occurs, and observations to note the general physical aspects of the culture. These sources provide the required weight of evidence for the study.

The above discussion is briefly summarized in the table (Appendix 4-5) below. Additionally, the table also discusses a few minor modifications made and provides the rationale for such modifications; all discussed and agreed with the supervisors of this research study. The changes are briefly summarized here for a quick review:

▪ Rep grid – proposed to be used as a key source of data for RQ1 and not RQ2
▪ Focus group – only one FG was proposed to be used instead of two as Johnson's web analysis could not be integrated into the overall data and did not add any substantial value to answering RQ2
▪ Documents – the focus of document collection has been limited to only those relevant to the results from rep grid
▪ Observations – field observations are limited to gathering unstructured observations, but within a framework that was more geared towards physical surroundings and artefacts

All of these changes have been built into the research methodology described in Section 4.4 to make sure the data collected are fit for purpose and able to provide the necessary means to draw inferences to support RQs 1 and 2.

Table (Appendix 4-5): Views on multiple sources used in the Pilot and revisions proposed

Source	Used in the pilot	Views on this approach	Revisions proposed
Source#1: Rep Grid	This was used in the pilot as a key source of data for RQ1 and supporting source for RQ2	This has been a very convenient method to gain access to the perceptions of the interviewees to understand the underlying constructs of innovation culture. The results from the pilot study have greatly supported this view. While laddering was a useful approach to understand the constructs better, it did not however provide sufficient time to probe further (for RQ2). Hence it was decided that rep grid would be difficult to be used as supporting evidence for RQ2	Rep grid was confirmed to remain as the main source of data for RQ1, and not as a secondary source of supporting evidence for RQ2
Source #2: Focus Group (FG)	This was used in the pilot as a key source of data for RQ2	The two-member FG was very useful in terms of gathering the necessary data on 'rewards and recognition.' Through the rich interactions between the two-members of the group (Krueger & Casey, 2008), its potential to answer RQ2 was evident. Participants had a chance to build on each other's responses (Patton, 2002). This provided the confidence to use FG to answer RQ2. Also, based on the 15min discussion on 'rewards', it became evident that 2hrs would be sufficient to discuss at least 10 key factors and that the time needs to be adjusted and managed to accommodate the total number of key factors of innovation culture. However, Johnson's (2000) web, which was part of the initial FG protocol, has proved to be a source of difficulty on two counts – time to gather the information and also its use as a source of evidence i.e., the ease of analysis and integration of findings with other sources to support the case study.	While it was proposed to retain the FG as a key source of data for RQ2, it was agreed to drop the use of Johnson's (2000) web for any supporting information on the case organization.
Source #3: Documents	This was used in the pilot as a supporting source of evidence for RQ1	The approach for the pilot has been to look at publicly available sources and also any specific documentation pertaining to the factors that emerged from source #1. In this sense, collection of documents has been a very focused and targeted task as advised by Yin (2012). This has been very helpful as another source of supporting evidence for RQ1.	While it was proposed to retain this as a supporting source of evidence for RQ1 only, it is acknowledged that it is limited by the access available to the researcher to confidential documents.
Source #4: Observations	This was used in the pilot as a supporting source of evidence for RQ1	Some useful observations were made as part of the pilot study. However, the weight of evidence from observations has not been very strong, given the lack of data from meetings/discussions/conferences. However, observations did provide some key insights into the support for rewards within the organization.	While it was proposed to retain this as a source of supporting evidence, its limitation is acknowledged and the focus would only be on the general mood, organizational layout, displays on the walls and general facilities available to employees. The focus would be to provide supporting evidence for RQ1.

Therefore, the following key learnings from the pilot study were incorporated into the interviews for Cases A, B and C:

Rep Grid interview:

▪ The laddering question 'How is the construct relevant in the context of culture?' was useful in prompting the interviewees to think critically about the constructs and also refine them in fewer and clearer words.

▪ 'Ideal Organization' for the interviewees even meant an imaginary organization that did not exist but could potentially exist for them. This helped them to think creatively and more reflectively.

▪ Interrupting interviewees to ask why they were rating 1 or 5 provided confirmation that they were not randomly rating the organizations.

▪ Changing the triads has helped greatly in generating more constructs.

▪ Checking that the constructs they mentioned did relate to the triad helped them to reflect more on the phenomenon.

▪ From the pilot interviews, some of the factors were not mentioned by the interviewees (e.g., 'client-focus' in one of the rep grids and a 'flat organizational structure' in another one) only because they were not something they could associate with or differentiate between organizations on the list. So, selection of organizations did play a role and could potentially inhibit the listing of constructs. One approach used to circumvent this was to try to go through as many triads (most combinations) as possible to increase the possibility of eliciting constructs that may be important (Goffin et al., 2010).

Focus group discussion:

▪ Steer the group towards discussing the factors more about the relevance to their organization as that would serve another purpose of gathering contextual data
.

Documents:

▪ The focus of what needs to be analyzed within the documents should be guided in a framework (Yin, 2012), in this case it would be the final list of key factors from the rep grid.

Memos and observational field notes:

- Memos are extremely important, especially when analyzing the evidence across various sources.

Reflection on Data Analysis

- Dealing with data: The researcher underestimated the time required for transcribing. Much time was wasted in transcription. Although the pilot interviews were sent to India for transcription, a lot of time was spent making corrections. This was unhelpful. So, the process of transcription should begin immediately after the interview and not be left until they start accumulating. In fact, analysis should start with the first few interviews and categories of factors can be made by building on the constructs from the initial set of interviews.

- Templates for analysis: Although the researcher thought the templates created were good, they were clearly inadequate. An appropriate set of templates were finalized alongside the data analysis for Case A. The templates were then be used to analyze Cases B and C as well.

- Personal discipline: The researcher learnt that some areas of data (especially the rep grids) can be analyzed while the interviews are being conducted. There is no need to wait until all interviews are completed. Basic analysis can be undertaken. Field notes are absolutely important, even from an analysis perspective, and should be used having been gathered as and when an opportunity arises.

APPENDIX 4-6: THE RATIOANLE FOR #12 INTERVIEWS IN EACH CASE

In regard to the potential of using 12 interviewees to answer RQ1 for each case, the question of how representative they would be is not only an important one to ask, but also a critical one. While the consulting practices or LoBs (Lines of Business) are pretty much individual organizations within a consulting organization, a good representation is taken across the various sub-units within the consulting LoB. In the UK, for the cases chosen, the target was only consulting divisions with consultants and not the advisory, IT support and maintenance, or other support functions. So, for instance, in Case A, an email was sent out to the potential population within the LoB of the organization. For the size of the

Case A (c.1500 consultants), a total of 76 people responded showing an interest in participating. This included interviewees from across levels and across consulting divisions/practice groups; 12 were chosen to make sure all levels and consulting divisions/practice groups were well represented. A similar approach to recruit participants and rationale were used for Cases B and C. Also, while the consulting practice groups are independent and could potentially have their own subcultures, this was noted as not necessarily a problem; instead, it was identified as an opportunity to obtain some unique views within the broader organizational context (see Chapter 2, Section 2.3 on subcultures), almost providing a general view across the organization.

APPENDIX 5-1: FINAL CODING FRAME USED TO CODE DOCUMENTS AND OBSERVATIONS

No.	Final meta-construct	Code
1	Innovation Execution Capability	KFA1
2	Rewarding innovation	KFA2
3	Innovation is company's ethos	KFA3
4	Explore externally for innovation opportunities	KFA4
5	Client at the centre of innovation	KFA5
6	Dedicated innovation office	KFA6
7	Diversity	KFA7
8	Physical environment	KFA8
9	Dedicated time for innovation	KFA9
10	Focus on identifying value of innovation	KFA10
11	Driven to innovate due to external factors	KFA11
12	Supporting technology for innovation	KFA12
13	Internal communication	KFA13
14	Leadership focused on innovation	NKFA1
15	Innovation focus at all levels	NKFA2
16	Organization promoting entrepreneurship	NKFA3
17	Best Talent	NKFA4
29	Reinventing the business	NKFA5
18	Empowerment	NKFA6
19	Clear articulation and communication of organizational strategy	NKFA7
20	Actively tracking market trends and aligning	NKFA8
21	Enabling people to build knowledge to innovate	NKFA9
22	Teams and community	NKFA10
23	Strong growth focus	NKFA11
24	Knowledge building/sharing culture	NKFA12
25	Focus on generating more innovation-based revenues	NKFA13
26	External communication to the market	NKFA14
27	Innovation targets in appraisals	NKFA15
28	Allow experimentation	NKFA16
30	Investments in innovation	NKFA17
31	Desire to be the best	NKFA18
32	Miscellaneous	NA*
	Total	

Key

KFA	Key Factor for Case A
NKFA	Non Key Factor for Case A

APPENDIX 5-2: CODING OF OBSERVATIONS

No.	Observation from field notes	Location	Key factor Code
1	The reception area has the company logo with a slogan on it "Innovation...."	London - Office 1	KFA3
2	The reception area has friendly people, very kind and helpful	London - Office 1	
3	There were a number of books (published by authors from the company), magazines (manufacturing/utilities/banking etc.), collaterals, innovation journals published by the company, recent wins, acquisitions	London - Office 1	KFA3
4	Meeting rooms are always full, even after office hours. Clients seem to be coming to the office	London - Office 1	KFA8
5	The kitchen area is broad and specious and people seem to sit around and chat a lot, maybe meetings are being held in this area. So, this area is being used for dual purpose. There are white boards in the kitchen area	London - Office 1	KFA8
6	The fridges in the kitchen area are fully stocked with fruit juices and fizzy drinks, breakfast cereals and milk	London - Office 1	KFA8
7	Approx. 50% of the desks seem to be hot desks and a lot of people seem to come and go	London - Office 1	KFA8
8	Company values such as "Change Begins with you", "Innovation...." are displayed on the walls all over the office	London - Office 1	KFA8
9	Can see small pod areas where individuals are busy on calls	London - Office 1	KFA8
10	The infrastructure facilities team has around it a lot of laptops and bags around.....people are coming to collect their laptops. No specific or special devices such as ipads, tablets can be seen. Looks like some basic infrastructure is definitely available	London - Office 1	KFA12
11	Can see separate cabins for the leadership team, but different people occupy these rooms at different points of time. So, maybe anybody can use them although they are designated for top management - so maybe flexible in using office space	London - Office 1	
12	One leadership meeting has happened and people have gathered in a large room (seem to be older people in the room - so maybe senior management)	London - Office 1	
14	People seem to be in stress and the environment seems to be very serious- both people hot desking or those having permanent desks	London - Office 1	
15	Bins for recycling are available everywhere and there are specific instructions for sorting the type of rubbish - seems to be environment friendly. This was also observed in the kitchen area.	London - Office 1	
16	Stationery is kept in some areas within the building. Instructions for printing less pages and using economically are found everywhere. So, again maybe environmentally friendly or it could be a cost saving measure as well	London - Office 1	
17	Not many people are found around the printer area. Throughout the stay of the researcher that day, maybe only 2 people in a hour on an average visited the printer	London - Office 1	
18	There is a lunch area and it seems to be outsourced to a london based company. Poeple gather here for lunch, but they also have meetings, teleconferences	London - Office 1	KFA8
19	Did not see any company results or anything anywhere in the building	London - Office 1	

20	Many of the people observed in seemed to be from India although a good number of local people were found (understood from their accent). Further, there were more men (80% observed) than women (20%). Although this could be a skewed view given the time of observations but both locations presented with a similar kind of view	London - Office 1	KFA7
21	In the kitchen area, the chairs seem to be very basic and no cushion or sofas anywhere......not much of immediate maintenance	London - Office 1	KFA8
22	A very much open layout people can be seen and approached easily it appeared, people seem to be talking at their desks but involved in serious talks (maybe business, not casual)	London - Office 1	KFA8
23	No displays of strategies or goals - perhaps because of confidentiality	London - Office 1	KFA8
24	Parking is not available (maybe because people don't drive in London)	London - Office 1	
25	There a few pictures of people taking innovation awards, but it seems to be very old and dated - no latest updates, indicates they may not be interested in displaying or even putting much emphasis on it, perhaps because it is floating population	London - Office 1	KFA2
26	It is very difficult to say much about the kind of company only expressed through its artefacts	London - Office 1	
27	Small reception area, but the books displayed are similar to the ones found in Paddington	London - Office 2	
28	The kitchen area is large again and a lot of meetings seem to be happening here. Microwave ovens can be seen and the fridges are again stocked with cereal, drinks, milk, and other food (individuals get their own food)	London - Office 2	KFA8
29	Meeting rooms are full again, the desk spaces are hot desks and the hallways are very narrow, crammed	London - Office 2	KFA8
30	There are a lot of discussions that seem to be happening - people seem to be working on client requests for proposals as there is a lot of brainstorming that can be seen	London - Office 2	
31	Can see displays of individual team's performance (HR targets) etc.	London - Office 2	
32	There are good rooms for meetings at the entrance, there are a lot of plants in the meeting rooms - maybe environmentally friendly	London - Office 2	KFA8
33	Many of the people observed in seemed to be from India although a good number of local people were found (understood from their accent). Further, there were more men (80% observed) than women (20%). Although this could be a skewed view given the time of observations but both locations presented with a similar kind of view	London - Office 2	KFA7

APPENDIX 5-3: A PRE-FOCUS GROUP INVITATION NOTE

Thank you very much for your contribution towards the one to one rep grid discussions. Your time and effort in supporting this research is much appreciated. As discussed earlier, this note is being sent out to request some further support this research will require.

Based on the one to one discussions, a set of key factors of innovation culture for your organization have been identified. From a research perspective and also in terms of interventions, it will be helpful if you could join a group discussion where the relevance of each of the priority factors to your organization is discussed and how these might relate to building an innovative culture.

All the necessary background to this stage of the study and the way the discussion will be structured will be provided before the discussion commences. However, please feel free to write to me if you have any specific questions.

Sincere thanks for participating in the study!

APPENDIXES FOR CHAPTER 6

APPENDIX 6-1: CODING FRAME (FROM REP GRIDS) TO CODE DOCUMENTS AND OBSERVATIONS

No.	Final meta-construct	Code
1	Diversity	KFA7
2	Balanced teams	KFB1
3	Explore externally for innovation opportunities	KFA4
4	Empowerment	NKFA6
5	Coaching and mentoring	KFB2
6	Strong growth focus	NKFA11
7	Access to top management	KFB3
8	Leadership focused on innovation	NKFA1
9	Enabling people to build knowledge to innovate	NKFA9
10	Risk taking	KFB4
11	Focus on identifying value of innovation	KFA10
12	Reinventing the business	NKFA5
13	Challenging the status quo	NKFB1
14	Willingness to change	NKFB2
15	Innovation execution capability	KFA1
16	Client at the centre of innovation	KFA5
17	Best talent	NKFA4
18	Knowledge sharing culture	NKFA12
19	Allow experimentation	NKFA16
20	Responsive to change	NKFB3
21	Actively tracking market trends and aligning	NKFA8
22	Supporting technology for innovation	KFA12
23	Safe environment	NKFB5
24	Rewarding innovation	KFA2
25	Recognise the need for innovation	NKFB6
26	Innovation focus at all levels	NKFA2
27	Decision-making downwards	NKFB7
28	Dedicated time for innovation	KFA9
29	Investment in innovation	NKFA17
30	Playfulness at work	NKFB8
31	Physical environment	KFA8
32	Innovation defined and understood	NKFB9
33	Communicate success stories	NKFB10
34	Driven to innovate due to external factors	KFA11

Key (Building on codes from Case A)

KFA	Key Factor for Case A (also observed in Case B)
KFB	Key Factor for Case B
NKFA	Non Key Factor for Case A (also observed in Case B)
NKFB	Non-key factors for Case B

APPENDIX 6-2: CODING OF OBSERVATIONS

No.	Observation from field notes	Location	Key Factor Code
1	Not very expensive food	Birmingham	
2	Separate rooms for clients	Birmingham	
3	Client proposals - people come to the office	Birmingham	
4	There are a number of social groups on bulletin boards - Bowling enthusiasts, competitions and fundraising	Birmingham	
5	Away days are displayed on the bulletin boards	Birmingham	
6	Colours of the brand (orange and red) clearly displayed on all artefacts of the company	Birmingham	
7	Details of disability welfare (displayed on TV screens)	Birmingham	
8	Any announcements and communications are displayed on TV screens, which can be seen all around the building	Birmingham	
9	Board rooms - there are specific ones for client visits and also external partner visits	Birmingham	
10	Cafeteria area - internal to the office, informal meetings appear to be taking place - looks quite comfortable as there are armchairs and booths	Birmingham	
11	Princes Trust - Midland Community Affairs FY 2015 displayed on the walls	Birmingham	
12	Minority communities, religious communities, Be XYZ and…. Different	Birmingham	KFA7
13	There are advertisements for networking events such as XYZ	Birmingham	KFB3
14	High Octane Ride - focus does seem to be on employee well being	Birmingham	
15	Lunch Breakout Area - people discussing and having informal meetings	Birmingham	
16	The breakout areas had comfortable sofas with screens for people to connect their laptops and work/discuss	Birmingham	
17	There is a lot of awareness being created through bulletin board announcements in the kitchen area about the Talent Scout referral programme (Sun, Sea and Suggestions)	Birmingham	
18	There are clusters of open space desks all over the building	Birmingham	
19	Partners within the organization have their own cabins. But they tend to be used by anybody when they are not around	Birmingham	
20	There are lockers and it appears that there is a clean desk policy - majority of the seats are neat	Birmingham	
21	There is a focus on being environmentally friendly as well. Recycling is being encouraged - recycling of tea, coffee, squash cups etc. Also only three printers are available on each floor and little activity has been observed around the printers in the 1 hr the researcher stayed there	Birmingham	
22	They are seated in a completely refurbished building, lighting is bright	Birmingham	
23	The building is centrally located in London, large layout, spacious lobby area for clients	London	
24	Journey for clients - welcome at the desk and then there is a spacious reception area where clients can wait for the people they came to see	London	
25	Large seminar rooms for events and functions	London	
26	A total of 42 meeting rooms and 29 of them are for external purposes. The meeting rooms are fully equipped with the required technology for video/audio conferencing	London	
27	There is a large business lounge area where clients can sit down and continue to work after their meetings as well	London	
28	There are separate rooms for partners within the firm	London	

29	There is a staff canteen area with facilities such as refreshments, cash machines, and train ticket booking machines	London	
30	There is a special area designated as the partners' lounge where special client meetings/dinners happen. This is also used for internal meetings	London	
31	There is a service hub area where printers, confidential information bins, stationery, individual cabinets for letters are available	London	
32	There are many books/firm publications on display - recent trends in taxation, outsourcing, company strategies, consulting collaterals, etc. are on display	London	NKFA5
33	In the reception area there are a number of pods for clients to see and use in regard to firm information, progress updates etc.	London	
34	There are cloakrooms and cabinets all over the building and it appears that there is a clean desk policy in place	London	
35	There are beautiful seating arrangements so people can have meetings in a relaxing environment	London	
36	The entire building has colours that match their logo	London	
37	There are two-seat areas for quiet meetings (internal or external)	London	
38	The entire building has LCD screens where updates on progress of the firm, latest strategies, information policies are displayed	London	
39	It is believed that the energy from waste cooking oil is being used/recycled (environmentally friendly/conscious/supportive)	London	
40	There is a library area as well and talking to the reception desk it was also evident that employees have access to all journals and relevant information as and when required	London	NKFA5
41	There is a library area as well and talking to the reception desk it was also evident that employees have access to all journals and relevant information as and when required	London	NKF5

APPENDIX 6-3: A PRE-FOCUS GROUP INVITATION NOTE

Thank you very much for your contribution towards the one to one rep grid discussions. Your time and effort in supporting this research is much appreciated. As discussed earlier, this note is being sent out to request some further support this research will require.

Based on the one to one discussions, a set of key factors of innovation culture for your organization have been identified. From a research perspective and also in terms of interventions, it will be helpful if you could join a group discussion where the relevance of each of the priority factors to your organization is discussed and how these might relate to building an innovative culture.

All the necessary background to this stage of the study and the way the discussion is structured will be provided before the discussion commences. However, please feel free to write to me if you have any specific questions.

Sincere thanks for participating in the study!

APPENDIX 6-4: EMPIRICAL CONCLUSIONS AND RECOMMENDATIONS

Provided here are details of empirical conclusions with practical recommendations centred on three key areas: people practices, leadership initiatives and what PSF firms can do externally that can enable Case B to create a culture of innovation.

No.	Empirical conclusions	Practical recommendations
1	The key factors of innovation that relate to people processes enable behaviours that generate more engagement between seniors and junior staff across the professional workforce	Through the key factors of people processes: ▪ Leaders/senior staff can implement processes that enable two-way learning between seniors and junior staff to ensure the organization is collectively learning ▪ Junior staff can be provided with more support from seniors by way of allowing for more discussions on innovative ideas and on the feasibility of such innovative ideas
2	Leadership practices (specifically at a supervisory level) can have an overall impact on an organization internally in terms of providing the necessary support for junior staff of the organization in with regard to innovation	▪ Leaders within the organization can set ambitious growth targets (through various levels of leadership) and drive identification areas of focus for innovation
3	The key factors of innovation culture that relate to externally focused activity (e.g. partnering, reinventing business focus areas) have an impact on innovation culture internally within the organization	▪ Revisit risk and quality framework to incorporate or introduce innovation as a key agenda area such that the professionals have more guidance around how risks can be taken, but in a more controlled manner ▪ All professionals (instead of just management or leadership) can be encouraged to start thinking about how new internal capabilities can be built through external sourcing to improve the landscape of business opportunities

APPENDIXES FOR CHAPTER 7

APPENDIX 7-1: CODING FRAME (FROM REP GRIDS) TO CODE DOCUMENTS AND OBSERVATIONS

No.	Final meta-construct	Code
1	Supporting technology for innovation	KFA12
2	Actively tracking market trends and aligning	NKFA8
3	Flexible to change	KFC1
4	Reinventing the business	NKFA5
5	Empowerment	NKFA6
6	Rewarding innovation	KFA2
7	Supportive organization structure	KFC2
8	Leadership focused on innovation	NKFA1
9	Effective internal relationships	KFC3
10	External communication to the market	NKFA14
11	Explore externally for innovation opportunities	KFA4
12	Investment in innovation	NKFA17
13	Enabling people to equip themselves with relevant skills	NKFA9
14	Best talent	NKFA4
15	Physical environment	KFA8
16	Innovation execution capability	KFA1
17	Safe environment	NKFB5
18	Desire to be the best	NKFA18
19	Diversity	KFA7
20	Legacy of success	NKFC1
21	Risk taking	KFB4
22	Cross-functional exposure	NKFC2
23	Socialising	NKFC3
24	Valuing employees	NKFC4
25	Dedicated time for innovation	KFA9
26	Younger people	NKFC5
27	Extensive market research	NKFC6
28	Flexible policies around work	NKFC7
29	Allow experimentation	NKFA16
30	Miscellaneous	

Key	(Building on codes from Cases A and B)
KFA	Key Factor for Case A (but also observed in Case C)
KFB	Key Factor for Case B (but also observed in Case C)
NKFA	Non Key Factor for Case A (but also observed in Case C)
NKFB	Non-Key factors for Case B (but also observed in Case C)
KFC	Key Factor for Case C (unique to Case C)
NKFC	Non-Key Factor for Case C (unique to Case C)

APPENDIX 7-2: CODING OF OBSERVATIONS

No.	Observation from field notes	Location	Key Factor Code
1	Small office with limited space available	London	
2	Reception area is very limited but there are a number of books, company collaterals on display	London	
3	Meetings rooms are also small, but they have conference facilities	London	
4	It is an open office layout	London	
5	The building is being fully refurbished - observed scaffolding all over the building	Stoke-on-Trent	
6	Large reception area with excellent seating arrangements for guests and clients	Stoke-on-Trent	
7	There is a large LCD display where company's performance and its new areas of operations and expansion plans are displayed and discussed	Stoke-on-Trent	
8	Details of commodity prices and how the markets are moving are available on the displays	Stoke-on-Trent	NKFA8
9	Open office layout	Stoke-on-Trent	
10	Meeting rooms are very spacious with conference facilities	Stoke-on-Trent	
11	There is a separate area for cafeteria facilities. But a mobile delivery van brings lunch for employees to purchase	Stoke-on-Trent	
12	Directors, Associate Directors, Technical Directors sit with the teams and work closely with them	Stoke-on-Trent	KFC3
13	No pictures or displays of employees taking awards or rewards	Stoke-on-Trent	
14	Although people were dressed in formal clothing, they seem to have a friendly and informal environment - people walk up to desks of colleagues and discussing, requesting for help [also helped in recruiting participants for this study]	Stoke-on-Trent	KFC3
15	They have conference calls with offices located in other areas - both locally and internationally (details available from booked meetings and as stated by some of the participants during informal interactions)	London and Stoke-on-Trent	KFC3

Key

KFC	Key Factor for Case C
NKFA	Non Key Factor for Case A (but a key factor for Case C)

APPENDIX 7-3: A PRE-FOCUS GROUP INVITATION NOTE

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Based on the one to one discussions, a set of key factors of innovation culture for your organization have been identified. From a research perspective and also in terms of interventions, it will be helpful if you could join a group discussion where the relevance of each of the priority factors to your organization is discussed and how these might relate to building an innovative culture.

All the necessary background to this stage of the study and the way the discussion is structured will be provided before the discussion commences. However, please feel free to write to me if you have any specific questions.

Sincere thanks for participating in the study!

APPENDIXES FOR CHAPTER 8

APPENDIX 8-1: LESS RELEVANT FACTORS OF INNOVATION CULTURE

This section of appendices briefly discusses (a) the key factors of innovation culture from the literature that this research has not identified as key factors and (b) the key factors of innovation culture from the literature that the participants in this research, across all three cases, have not even mentioned. Refer to Table (Appendix 8-1) as shown below for this discussion.

Table (Appendix 8-1): Non-key factors overlapping with literature

No.	Final Code	Factor of innovation culture	Literature	Case A	Case B	Case C
1	NKF1	Organization promoting entrepreneurship	Yes	√	√	
2	NKF2	Focus on generating innovation based revenues	Yes	√		
3	NKF3	Cross-functional exposure	Yes			√
4	NKF4	Teams and community	Yes	√		
5	NKF5	Innovation targets in appraisals	Yes	√		
6	NKF6	Safe environment	Yes		√	
7	NKF7	Best talent	Yes	√	√	√
8	KFL16	Quick decision making	Yes			
9	KFL27	Work group support	Yes			
10	KFL13	Open communication	Yes			
11	KFL8	Innovation vision mission and strategy	Yes			
12	KFL22	Stories and myths	Yes			

Legend: √ - Case where the factor was just mentioned, but not identified as a key factor; NKF–Non-Key Factor, factors that were not identified as key factors even in a single case; KFL–Key factor from the literature (Note: KFL8, 13, 16, 22 and 27 were not mentioned by any of the three cases).

The factor 'NKF1–Organization promoting entrepreneurship' very closely relates to 'KFL19–Safe spaces'[99], which refers to organizations providing the facility for groups of consultants to take time off from business-as-usual (BAU) and focus exclusively on developing innovative ideas. One of the reasons why dedicating time exclusively for innovation (using safe spaces) could be potentially difficult in the context of consultancies is because consulting managers' performance is assessed based on the amount of billable

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[99] *The full list of the 27 factors from SLR is presented (for comparison with that from this empirical research) in Figure 8.1 and definitions are available in Appendix 3-1.*

time and successful delivery of client engagements (Maister, 2003; Ross, 2015). Another factor 'NKF2–Focus on generating innovation based revenues', not identified as a key factor, is similar to 'KFL3–Company's focus on innovation portfolio', which refers to organizations specifically targeting innovation-based revenues, i.e., revenue brought in exclusively by innovation. The reason why this may not have emerged as important is because of the potential overlap between innovative solutions and the deliverables produced by consultancies, which are inherently innovative (O'Mahoney, 2011). Also, the factor 'NKF3–Cross-functional exposure' is similar to 'KFL9–Job rotation', which refers to enabling people to have the chance to work across functional groups. PSFs are project-based and consultants have the opportunity, by design, to work across various projects (Maister, 2003).

Further, the two factors 'NKF5–Innovation targets in appraisals' (mentioned in Case A) and 'NKF7–Best talent' (mentioned in all three cases A, B and C) are similar to 'KFL24–Task orientation' and 'KFL23–Talent and creativity' from the literature respectively. The former refers to ensuring the targets (work-related goals) are managed in a way that tasks planned for consultants actually incorporate innovation. But this may not be required, as consultants are professionals who need autonomy and less control (Maister, 2003), so the focus of management is not on the delivery of work but more on obtaining more work (Maister, 2003). The latter (NKF7) is very closely related to having the right set of people for the job. Because consultancies look for talent in recruitment and they have people who already have a bent of mind that supports innovation (Reihlen & Werr, 2012), this factor may not have emerged as a key factor.

The factor 'NKF4–Teams and community' has been mentioned in the context of facilitating collaboration across teams and functional groups. This is similar to 'KFL2–Collaboration', which refers to cross-functional collaboration within the organization. As discussed in Chapter 1 (Section 1.5), the work undertaken by PSFs is project-based by design. Further, in PSFs there is a significant amount of focus on leveraging individual learnings (from a variety of experiential backgrounds) and collaborative working is generally encouraged in teams (e.g. see Hadley et al., 2012). Therefore, NKF4 may not have emerged as a key factor. Also, 'NKF6–Safe environment' is similar to 'KFL14–

Participative Safety', which refers to providing employees with a safe environment to air ideas within teams, across teams and also with senior management. It is possible that employees already have a safe environment and there is evidence, from FG discussions in Case B, that both 'ORF11–Coaching and mentoring' and 'ORF12–Access to top management' can provide an environment to air new ideas, build relationships and generate and share ideas with senior members of staff (Chapter 6, Section 6.4.2). Therefore, NKF6 may not have emerged as a key factor.

There are also factors that have not been mentioned by the participants. 'KFL13–Open Communication', which refers to transparent communication within teams, across teams and between the management and employees, was not mentioned by any of the case companies. This may be because the environment created by way of 'ORF11–Coaching and mentoring' and 'ORF12–Access to top management' already addresses open and transparent communication. Also, 'KFL22–Stories and Myths' does not seem to be relevant because consultants are client location-based (again as discussed in Chapter 1, Section 1.5) and have little interaction with the organization on a daily basis. Moreover, consultants change on projects and the continual rotation of resources ensure the environment is always dynamic (Maister, 2003) with less time and scope for things to settle down.

Based on the discussion above, it can be concluded that a few factors are less important because they are not relevant within the business context and a few factors are not mentioned at all because such factors are addressed through the factors that emerged as important.

APPENDIXES FOR CHAPTER 9

APPENDIX 9-1: UNIQUENESS OF INNOVATION CULTURE IN PSFs

This exploratory empirical study confirmed some of the factors identified from the literature review and their relevance in the context of innovation culture in PSFs and also added a couple of key factors that can be of strategic importance to PSFs from a culture perspective. As discussed in Chapter 3, Section 3.3, all of the key factors from the literature have been mapped on to Martins and Terblanche's (2003) framework of innovation culture as shown in Table 3.2. Building on Table 3.2, Table 1 (Appendix 9-1) (see below) maps the list of the 12 key factors derived from this research study onto Martins and Terblanche's (2003) framework of innovation culture in juxtaposition to the factors derived from SLR. A few critical observations are noteworthy. Please refer to Table 1 (Appendix 9-1) below for this discussion, which is based on the following five key dimensions (each dimension is an aggregate group of factors) of innovation culture (Martins & Terblanche, 2003): *strategic focus, structure, support mechanism, innovative behaviours,* and *communication.*

Strategic focus. While the emphasis of the literature has been on developing an innovation agenda including formal vision/mission statements for innovation, this research has identified the need for PSFs to reinvent their businesses continually (KF6) and also actively track and align to markets (KF11) as activities of strategic focus. Maister (2003: p. 224) points out that most firms are good at strategic planning in PSFs, so PSFs need to think about a much deeper question, which is *"What will make the firm's services much more valuable to clients than the services of competing firms?"* Both KF6 and KF11 provide an edge to PSFs to be innovative in the marketplace and differentiate themselves from competition. As already discussed in Chapter 8, KF6, for example, enables consulting companies to keep themselves relevant in the marketplace, provides direction in terms of what capabilities need to be developed in order to address new market/business needs, and enables companies to start thinking about expanding into new markets. The desire to continually reinvent the business does provide differentiating services to clients. This research supports the idea that a strategic focus on KF6 and KF11 creates a culture of innovation, as opposed to just having an internal focus on creating an

innovation vision, mission and strategy, which can actually follow a strategy that has its emphasis more on KF6 and KF11. Further, while the literature focused on the role of leadership at a strategic level (row no. 1, column no.4) and the support on the ground at a supervisory level (row no. 3, column no. 4), this research identified the role of leadership more at a supervisory level (to be discussed under 'support mechanism') as part of the activities of consultants in PSFs. Additionally, as noted from the discussions in Chapter 8 (Section 8.4) and Chapter 9 (Section 9.3.1), the key factors address some of the challenges inherent in the way PSFs are organized. One of the challenges is to build the capacity to innovate. For example, KF6 provides direction in terms of what capabilities need to be developed in order to address new market/business needs. This enables PSFs to build relevant capabilities, which in turn build the capacity to innovate.

Table 1 (Appendix 9-1): Comparison of innovation culture from literature and innovation culture in PSFs

No.	Determinants of Culture	Key Factors from this empirical study (across the three cases A, B and C)	Key Factors from the systematic literature review (in bold and italics)
1	Strategy	KF6–Reinventing the business	Embodies *innovation vision/mission and strategy* (KFL8), *scanning and tracking market* (KFL20) and *leadership support and commitment* (KFL10)
		KF11–Actively tracking markets and aligning	
2	Structure	KF2–Explore externally for innovation	*Flexible Organizational Structures* (KFL6), *networking and boundary spanning* (KFL12)
3	Support Mechanisms	KF1–Rewarding innovation	Includes *focus on innovation portfolio* (KFL3), *diversity* (KFL4), *innovation process* (KFL7), *job rotation* (KFL9), *physical symbols* (KFL15), *rewards and recognition* (KFL17), *safe spaces* (KFL19), *slack resources* (KFL21), *talent and creativity* (KFL23), *task orientation* (KFL24), *team composition* (KFL25), *technology tools to support innovation* (KFL26), *and workgroup support* (KFL27)
		KF3–Diversity	
		KF4–Leadership focused on innovation	
		KF7–Dedicated time for innovation	
		KF8–Physical environment	
		KF9–Innovation execution capability	
		KF12–Supporting technology for innovation	
4	Innovative Behaviour	KF5–Empowerment	Includes *client focus* (KFL1), *collaboration (internal)* (KFL2), *empowerment and autonomy* (KFL5), *learning and development* (KFL11), *participative safety* (KFL14), *quick decision making* (KFL16), *risk-taking and experimentation* (KFL18)
		KF10–Enabling people to build knowledge to innovate	
		KF11–Actively tracking markets and aligning	
5	Communication	None	*Open and transparent communication* (KFL13), *stories and myths* (KFL22)

Note: KFL1 to KFL27 (Key Factors from Literature) are the codes used for key factors derived from the systematic literature review, as discussed in Chapter 3.

Structure. Flexible structure as supportive of innovation has been discussed widely in the literature (see Chapter 3, Section 3.3.4). Reihlen and Mone (2012) discuss elaborately on how PSFs share the structure of a heterarchical model of operations; they argue that *"based on principles of professional autonomy and self-governance shares many features of the heterarchical model"* (p. 121). The heterarchical model is treated in the literature as an archetype of a non-hierarchical model (e.g. Clark, 1985; Birkinshaw & Morrison, 1995). It is typically characterized by autonomy, pluralistic decision-making, and support (Reihlen & Mone, 2012). In the heterarchical model of operations, although individuals have autonomy, they are expected to have *"a necessary degree of self-limitation in order to realize common goals or to carry through a collective problem solving process"* (Reihlen & Mone, 2012: p. 118). It is no surprise that a flexible structure has not emerged as an important factor. PSFs are already set up in a way that allows for the structural autonomy needed to be innovative. However, one aspect that touches structure is 'KF2–Explore externally for innovation', which is similar to networking and boundary spanning (Dombrowski et al., 2007), as discussed in the literature review (Chapter 3, Section 3.3.3). KF2 is mapped to structure (row no.2, column no.3) because organizations need to make policy level decisions to be flexible structurally and work within a strategic frame that allows them to partner even with competition, in cases where clients need complementary skills. As highlighted in Chapter 8 (Section 8.4), KF2 actually provides holistic solution offerings in partnership with strategic partners in order to deliver innovative solutions to clients. This way of working with external partners (and organizations actually internally supporting this initiative) would create a culture of innovation within the organization. Additionally, it was also discussed that the key factors identified in this research serve the purpose of addressing some of the challenges PSFs face that can inhibit innovation. One of the challenges is to continually identify new opportunities for business. For example, KF2 increases the market awareness levels through partnerships and therefore through tapping into their eco-system of partners, PSFs are able to identify new opportunities.

Support mechanisms. The systematic literature review highlighted 14 key factors within this category of support mechanisms; this research confirmed the importance of seven of them. The key insights identified (different from what has already been

published in the contemporary academic literature on innovation culture) have already been discussed in Chapter 8 (Section 8.4); however, a few differences can be highlighted here. For example, this research identified the need for 'KF8–Physical environment' in order for PSFs to be innovative. This has a wider application in that it indicates that consultants, whether in the offices or at client locations may be provided with physical facilities (layout and space to work, facilities to be collocated with colleagues) that are conducive for innovation. Another example is the focus on leadership. This research highlighted the importance of leadership in the form of supervisory support and direction consultants receive on a day to day basis in their work on the ground (on projects), primarily their interaction with the clients. Leadership's role involves supporting consultants in not only managing their time (by identifying priorities) but also actively being involved in developing innovative solutions for clients. This support is extremely important as it gives opportunities for consultants to learn, contribute, compete and grow within the firm. Further, this research added 'KF9–Innovation execution capability' to the list of support mechanisms. This is included here because the more the firms focus on building the capacity to innovate, the more interested the consultants are to participate in innovation initiatives. While this is closely linked to the trend of clients seeking more implementation capability, it supports the view that consultants would have the necessary wherewithal through support from more seniors who have more implementation experience for them (junior consultants) to stay motivated (e.g. Judge et al. 1997; Chandler et al. 2000; Martins and Terblanche, 2003). Additionally, KF9 has been identified as a mechanism supportive of innovation culture in PSFs because it addresses one of the challenges in PSFs, i.e., to build the capacity to innovate. KF9 (Innovation execution capability) enables PSFs to build the relevant capabilities to implement innovations and that in turn enables organizations to build the capacity to innovate.

Innovative behaviour. While the literature highlights a number of areas of innovative behaviour, this research confirms that empowerment (KF5) and enabling people to learn and contribute to innovation (KF10) are the key areas for consultancies. The specific reasons for their importance have already been discussed in Chapter 8 (Section 8.4). Also, why other factors (such as risk-taking, client focus) have not emerged as key factors has been discussed in Chapter 8 (Section 8.5). For example, most of the

work undertaken by PSFs is basically innovative and is centred on clients' requests/demands; PSFs therefore are naturally client focused. Additionally, this research adds KF11–Actively tracking markets and aligning to the behaviours (as opposed to the focus of the literature on this being a strategic activity) because these are behaviours expected at a consultant level on the ground as consultants work closely with clients and would be in a position to understand trends and act on them. While there is a broader agenda of allowing consultants and front-line staff to also contribute to strategic planning activity (Maister, 2003), this research highlighted how KF11 is important even at levels other than the top management.

Communication. This research did not highlight any key factors that relate to communication. As discussed earlier, heterarchical organizational forms are based on such key moral principles as openness, tolerance, honesty, and partnership, leading to organizational trust (Reihlen & Mone, 2012) and therefore it is less likely to see this as a factor that is explicitly mentioned, except in cases where there is a scarcity (e.g. Scott & Bruce, 1994) of such moral behaviours as discussed above.

In summary, this review highlighted the fact that there are some factors from the literature that may be less relevant to PSFs, and at the same time indicated that there is a heightened need for some of them (the 12 key factors – ten from the literature and two new ones) to be the focus areas in PSFs as they enable PSFs to overcome a few of the challenges that can inhibit them from innovating.

APPENDIX 9-2: REFLECTIONS ON RESEARCH DESIGN

This research used four sources of data as part of the research design: (1) rep grid interviews, (2) focus groups, (3) documents and (4) observations. While the first two were used as the primary sources to answer RQ1 and RQ2 respectively, documents and observations were used as supporting evidence for only RQ1. This section deals with the reflections on each of the sources used in this research study.

Rep grid interviews. Rep grid interviews were most effective in unravelling the underlying constructs of innovation culture. With only basic information about what innovation culture is (that it is a culture where the language, values, beliefs, norms, and behaviours are centred on innovation and innovative initiatives), without biasing the interviewees, the rep grid approach was able to derive the key underlying constructs for each participant. Given that culture is a subject that is much deeper and needs more immersion from the researcher, this method – although not a substitute – proved very effective in gaining access to people's underlying perspectives about innovation culture. Particularly, the approach to asking the laddering question 'How is this aspect or construct relevant to innovation culture?' was very useful in understanding each construct better where participants could relate the construct they specified to innovation culture. On the other hand, older participants found rep grids a bit too structured. They were inclined to discuss other things in addition to the elicited construct in question; in that sense, this method was slightly restricting. But with a little facilitation, it was possible to return them to the discussion on the construct.

From an analysis perspective, the process of generating codes could be better by reviewing them several times to come up with tighter codes, rather than creating more codes with slight nuances. Also, with respect to another reviewer undertaking coding, the process needs to be defined (i.e. ground rules need to be set) to ensure the second researcher is following the same set of principles and approach. This was the learning from Case A and was incorporated for both Cases B and C.

Additionally, the factors derived from each study were at a very granular level (nuances were maintained, although potentially they could have been grouped). While

this approach provided the advantage of expanding on some nuances in individual case explanations, the sheer number of factors made the overall analysis rather clumsy and unorthodox. 20% less number of meta-constructs (e.g. 25 as opposed to 32 factors in Case A for the total number of 140 constructs) would have been easier and manageable.

Focus groups. Focus groups were very useful in fulfilling the purpose for which they were intended, i.e., to gather data to answer RQ2. On the positive side, the discussion on each factor in terms of its importance to the case company was very useful; it was the richness of the discussion and how each participant built their views on what other participants said – both supporting and refuting. From Case B, having a partner (who was also the sponsor) in the group discussion proved very effective as he was able to relate the discussion back to the strategic objectives of their firm. Also, in terms of the number of participants, an optimal number is important. In Case A there were three, Case B four and Case C five. The number of participants in Case B was the best as everyone had a chance to talk on each factor. On the other hand, the amount of time was restricting (two hrs); it all depended on the number of key factors of innovation that emerged as important for each case. Case A had 13 and Case C had 10, so each factor had less time in Case A compared to Case C. Also, the biggest challenge (despite planning well in advance) was the scheduling of focus groups. Arranging people's time (even after planning well in advance) can be extremely difficult in PSFs, given the client commitments and meetings consulting managers have. The research sponsors' commitment is particularly useful in such situations.

Documents. Documents were used as supporting evidence; they were extremely helpful, especially in understanding the factors better and the status that was accorded the factors within the case company. For example, in Case A, 'Rewarding innovation' emerged as important. The documentation available also greatly supported this factor, especially in terms of evidence available to validate the key aspect of linking the value of innovation generated to the rewards scheme. In Case A it was possible to obtain more documentation that was available through contacts than it was in Cases B and C. So, establishing a good relationship with the participants can be very helpful. On the other

hand, documentation can be limiting as access to confidential documents is sometimes not possible.

Observations. Observations again were used as supporting evidence. Some observations, for example, especially around the physical environment (building layout, kitchen area, displays on walls etc.), were quite crucial as evidence in all three cases; however, more observational evidence (e.g. observations of conferences or symposiums on innovation within the organization) could have been extremely useful.