Tools for Strategy Development Suitable for Startups with Focus on Online Platforms.

Case Study of the ICT4MPOWER Group

Verktyg för strategiutveckling lämpliga för verksamheter i uppstartsfasen med fokus på "online-plattformar"

KTH Information and Communication Technology

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Abstract

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Tools for Strategy Development Suitable for Startups with Focus on Online Platforms.	
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Business, organizational and information systems strategies are part of the process of turning an idea into an operating organism. This process can be easy or complicated depending on many factors; however its importance cannot be underestimated. This thesis presents a case study performed in order to show how to develop strategies using easy-to-use models and methods collected from literature researches. The result is a basic guide, for the ones that are thinking about developing their strategies, using the case as example.	
Strategy, Mission, Vision, Customer Relationship Management, e-business	

Sammanfattning

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Affärs-, organisations- och informationssystemsstrategier är en del av processen från att omvandla en idé till en fungerande organism. Denna process kan vara lätt eller komplicerad beroende på många faktorer, oberoende av detta, bör dess betydelse inte underskattas. Denna avhandling presenterar en fallstudie som genomförts för att visa hur man kan utveckla strategier med hjälp av lättanvända modeller och metoder som sammanställts genom diverse litterära studier. Resultatet är en guide ämnat åt dem som funderar på att utveckla sina strategier med hjälp av fallet som exempel.	
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Preface

This thesis work is addressed to everyone having interests for developing business, organizational and Information Systems (IS) strategies using the web and multi-sided platform as a tool to engage coworkers and reach members of an electronic community.

I would like to thank the following individuals for supporting me in the realization of this work,

- Dr. Ilia Bider, my scientific adviser for his help in providing valuable advises in the process of writing and structuring the report.
- Rustam Nabiev, MTA Karolinska. My tutor who has always been available providing helpful ideas for reaching the goals of this project.
- All individuals in the ICT4MPOWER project that have helped me through being available for workshops and discussions.

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1. Introduction

Business, organizational and information systems strategies are part of the process of turning an idea into an operating organism. This process can be easy or complicated depending on many factors; however its importance cannot be underestimated. This thesis presents a case study performed in order to show how to develop strategies using easy-to-use models and methods collected from literature researches. The result is a basic guide, for the ones that are thinking about developing their strategies, using the case as example.

This thesis work forms part of a larger project called ICT4MPOWER, which strives for improved effectiveness of health system and empowerment of healthcare communities for better health outcomes using information and communication technology. The vision is to provide qualitative, affordable and accessible healthcare services at the point of need.

The mission is to improve health at the global level and to provide the best healthcare applications and services by creating innovative solutions based on the customers' needs.

The goals will be achieved partly by providing open-source Software as a Service (SaaS) health applications to the customers through a multi-sided platform that will not only help to collect information about the customer's needs but also to engage the healthcare and developers community, and other stakeholders.

1.1 Thesis work goals

The objective of the thesis work is:

- To find tools for development of strategies that are suitable for an enterprise in the start up process with focus on online communities.
- Test the tools and develop a business strategy (BS), an organizational strategy (OS), and an information system strategy (ISS). A specific requirement is that
    - The ISS must include necessary functions and services that must be incorporated in an online community platform in order to support BS, and OS of involved stakeholders.
- Recommend follow up tools

1.2 Deliverables

This is what is expected as outcome from this project. The deliverables in 1, will be presented in the Literature review chapter, and deliverables 2, 3, 4 in the Results and data analyses chapter.

1. Literature study on tools for development of strategies, and online communities
2. Develop a business strategy
3. Develop an organizational strategy
4. Develop an information system strategy including vital functions and services for each stakeholder
5. Thesis report

1.3 Research questions

I have chosen the following research questions to guide the realization of this project.

- What is required to formulate a strategy?
- How can I understand and formulate a strategy in an easy way?
- What kind of activities has to be performed in order to reach the goals?
- What kind of services has to be included in order to perform the activities?
- How are the community's activities related to the organization's strategies?

1.4 Scope and delimitation

This project comprises the analysis of one company, ICT4MPOWER. The project has its focus on finding appropriate methods for strategy development and testing them in practice, delivering as a result of this the appropriate strategies for the implementation of a multi-sided platform, including the analysis of innovative services to guarantee the differentiation among other platforms.

Focus has also been putted on finding the best ways to empower and attract the community and stakeholders trough the platform. All the strategies should be taken as initial suggestions to be further developed when the group has acquired a deeper understanding of the usage of the platform and the dynamics of the market.

The methods used may also vary depending on the purposes of the business and should be considered as examples.

The tools used are suitable for enterprises focusing on e-business and may require changes in order to support the dynamics and goals of enterprises not focusing on e-business.

Due to the short timeframe and the complexity of the business I have decided to delimit my work only to finding the tools for strategy development and testing these, as well as giving suggestions for services that can support the strategies, and managerial aspects of how to align the goals of the platform with the overall objectives. I will not present any details about technology or design. I will neither dig into the processes that stand behind the supportive work of the platform, I will not focus on any hardware requirements for the IS strategy, and I will not make any evaluation of the results of using the strategies.

1.5 Hypothesis

In this section I present my hypothesis through which I intend to answer the research questions.

Through a broad analysis of literature I will be able to find methods for the development of the different strategies and to acquire diverse perspectives on strategies and online communities which will help me decide what is most appropriate for an enterprise in the startup process, like ICT4MPOWER.

An analysis of ICT4MPOWER and close collaboration is also important in order to capture the details about the business.

The ICT4MPOWER group has identified four stakeholders; these are playing a central role in the decision of how I define the strategies. Through the definition of a clear vision, mission and core values and by acquiring a deep understanding of the different stakeholders and their needs and personalities I will be able to define which direction is the most appropriate for the Group to take in order to reach the overall goals and what functions and services the platform must offer to satisfy those needs.

I also believe that performing a SWOT analysis for the platform will help me and the group to better understand in which way the group can use the platform to reach a competitive advantage.

2. Research methodology

In the research methodology chapter I describe the tools and methods that I will be using in the realization of this thesis. It is important to understand that the research method has to be flexible and dynamic in order to capture and cover new information that is gained along the realization of the project.

2.1 The process of research

To give a better understanding of how I will be working during this project I have chosen to use Erik Perjons' operational research process (ORP) presented in [2]. Obviously, this process has been modified to fit this particular thesis but the main idea has been preserved.

Define problem

-make an initial analysis of the enterprise, by doing relevant interviews

Form Knowledge base

- Literature and methods relevant for the problem in question

Test solution

Case study

-Develop models and strategies based on the findings

Find rational solution

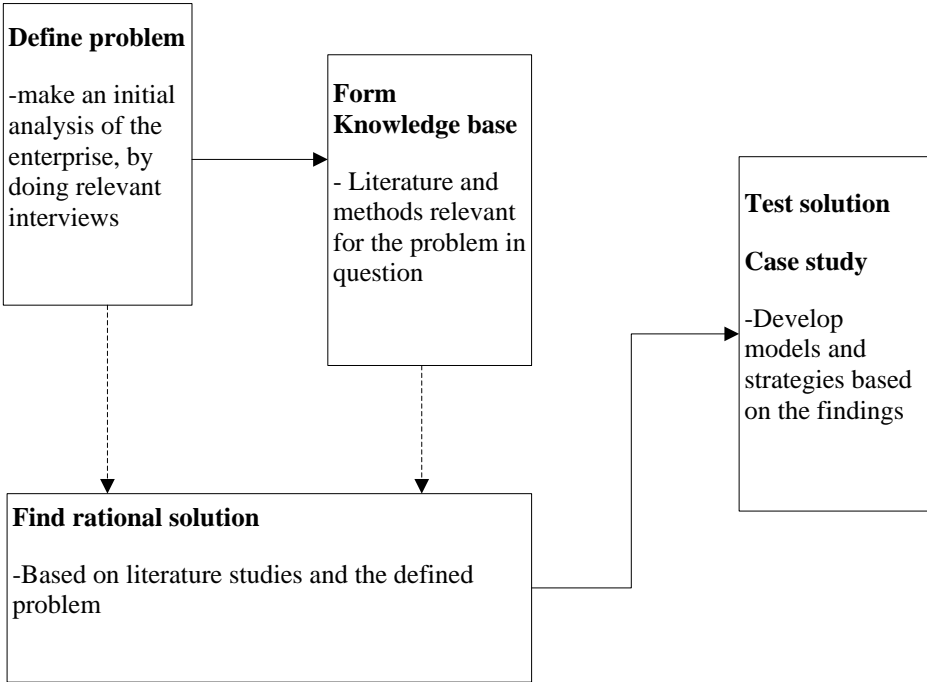-Based on literature studies and the defined problem

Figure 1 Operational research proces modified for short-timeframe thesis

The activities to be performed are:

- Define Problem by making an analysis of the enterprise through interviews and discussions.

- Form Knowledge base by doing a research of relevant literature. Another important aspect of the project is the theoretical aspect through which I acquire the specific knowledge. For this reason the methods must be combined with article-reading and analysis. In this way the research method for the project acquires an explorative and qualitative attribute.
- Find a rational solution. This activity can be performed in parallel with forming a knowledge base and problem definition. Notice that the solution cannot be based on pure theories, but must also be based on the real situation, so this specific stage of finding a rational solution has to be flexible in order to embrace, capture and apply new information that shapes the solution.
- Test solution I by doing a case study and developing models and strategies based on the findings.

Perjons also includes the evaluation of the solution but as I mentioned in the Scope and delimitations-section, the timeframe does not allow me to make such evaluation. Instead the methods and results will be discussed in the end of the report.

Since the purpose of this project is to find the best strategic alternative for ICT4MPOWER (through examining and investigating the needs of the stakeholders), it is necessary to learn about the organization and the people that work within it, making the continuous communication a fundamental part of the project. Thereby I will investigate these needs in direct collaboration with the team through interviews and workshops. I will also elaborate a business model to describe how the organization works and how the value proposition is intended to be sustained.

2.2 Method for applying the knowledge base and testing the solution

In order to test the solution a proper method has to be chosen. In this case the method that I found relevant is the Case study- method presented in the article of Design Science methodology [1]. The design science methodology is an information system research methodology that focuses on the performance and development of objects through research guidelines. Figure 2 "Design Evaluation Methods", shows the methods that can be used to apply the theoretical base in practice.

As mentioned before I will use the case study-method to test the solution.

1. Observational	Case Study – Study artifact in depth in business environment
	Field Study – Monitor use of artifact in multiple projects
2. Analytical	Static Analysis – Examine structure of artifact for static qualities (e.g., complexity)
	Architecture Analysis – Study fit of artifact into technical IS architecture
	Optimization – Demonstrate inherent optimal properties of artifact or provide optimality bounds on artifact behavior
	Dynamic Analysis – Study artifact in use for dynamic qualities (e.g., performance)
3. Experimental	Controlled Experiment – Study artifact in controlled environment for qualities (e.g., usability)
	Simulation – Execute artifact with artificial data
4. Testing	Functional (Black Box) Testing – Execute artifact interfaces to discover failures and identify defects
	Structural (White Box) Testing – Perform coverage testing of some metric (e.g., execution paths) in the artifact implementation
5. Descriptive	Informed Argument – Use information from the knowledge base (e.g., relevant research) to build a convincing argument for the artifact's utility
	Scenarios – Construct detailed scenarios around the artifact to demonstrate its utility

Figure 2 Design evaluation methods

2.3 Methods for interviewing the Group

In order to obtain the proper information about the stakeholders it is necessary for me to define in which ways the information will be collected. Since the work is very collaborative and the insights of many stakeholders have to be taken in consideration, I must put focus in the dynamic aspect of the interviews creating room for discussions rather than using a question and answer-based approach. In this way the opinion of many will be taken in consideration and will shape the outcome of this project.

In Appendix A you will find the summaries of the workshops performed.

2.3.1 Workshop interviews

The workshops are used in this project to create the open room for discussion. During the workshop the following method was tried:

1. Present the topic by sending written descriptions to the participants that have been invited to the workshop, containing discussion questions and examples. This must be done a few days before the workshop is performed
2. At the workshops start. Make a short presentation

3. Provide material to the participants so that they can write their opinions (e.g. whiteboards so it becomes visible to everybody)
4. Every participant then presents his/her opinion, while the others make inputs to improve the ideas
5. Finally I can choose the most likely opinions to integrate them in the project

The method is not performed in a strict way so that the discussions come in a more natural way.

2.3.2 Weekly online conference meeting

This method was not part of the initial interview methods but it was necessary for me to integrate it in the project due to the absence of the project manager. The weekly online conference meetings were more informal and conducted in a more open way to create discussions and to define several things corresponding to the strategy and the business model. The meetings were structured in the following way:

1. Present the problem to the project manager two days before meeting by sending a written description, with questions that need to be answered
2. When starting the meeting ask about the necessary information
3. Present the theoretical background and the possible options or solution
4. Discuss around the solution taking in consideration the new information gathered
5. Establish which next steps to take

Even this method has to be open and flexible to give the opportunity to express concerns and/or ideas about other topics related to the problem.

2.4 Models and methods for developing strategies

The following are methods and models used in this project to develop the strategies and make analyses. These models and methods can be used in general to formulate any strategy. Note that some modifications might be required.

2.4.1 SWOT analysis; a strategic planning tool

SWOT analysis is concerned with the analysis of an organization's internal and external environment. A SWOT analysis consists in identifying the Strengths, Weaknesses, Opportunities, and Threats of an organization, because all these are related to each other and will affect in the way the ideas that you might have can turn into realization or not [24]. It is of importance in the initial stage of this thesis in order to understand from the beginning on which aspects I will have to lay more focus. The analysis will provide a visualization of importance that will help in the strategy decision making.
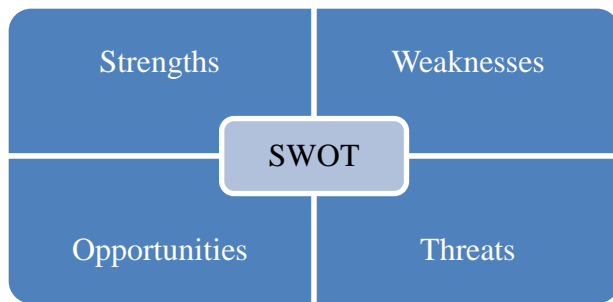
2.4.2 Tools for developing a Business model

For the development of the business model I will use the business model canvas [15, 16]. The business model canvas consists of nine building boxes that are organized to give an overall picture of the business which make it easier to understand and to reorganize the business.

The nine boxes are [15]:

1. *Customer segment* are all the people or organizations for which you are creating value. Including simple users and paying customers
2. *Value proposition* for each segment you create a specific value proposition, these are the product and services that create value for the customers
3. *Channels* describe the touch points through which you interact with the customers and deliver value to them
4. *Customer relationship* define the type of relationship you establish with your customers
5. *Revenue streams* how your business model is capturing value
6. *Key resources* show which assets are indispensable in the business model
7. *Key activities* describes the things you need in order to perform well
8. *Key partners* are those who can help you leverage your business model
9. *Cost structure* once you understand the business model structure you can be able to define its cost structure

2.4.3 Tools for developing an organizational strategy

The strategic management plan [11] is a model used in the formulation of an organizational strategy. It consists of six components that need to be covered by the organizational strategy. This is a short presentation of the components. A more detailed definition can be found in the Literature review chapter

1. *Purpose and Vision, Philosophy and values*
2. *Structure and roles*
3. *Recruitment*
4. *Training and development*
5. *Communication*
6. *Care and concern*

2.4.4 Tools for developing an Information Systems strategy

The method presented here is a summary of the different stages in the IS strategy formulation-process. I have developed these steps in order to capture what is required to set the IS strategy.

To create the strategy you need to define the following concepts:

1. *What is the purpose of the system/platform* – what will the system be used for
2. *Who is going to use the system/platform* – which individuals will use the system and
3. *What are the requirements*– there are two types of requirements 1) the physical, covering hardware and software requirements, which are not covered in this thesis and 2) the individuals requirements meaning that in order to reach an optimal satisfaction level (create a fun-to-use experience), it is important to consider the individuals requirements.

3. Research background

The first stage, "Define problem", in the operational research process is extended from the Research background chapter till the Initial analysis of ICT4MPOWER chapter.

Define problem

-make an initial analysis of the enterprise, by doing relevant interviews

Form Knowledge base

- Literature and methods relevant for the problem in question

Test solution

Case study

-Develop models and strategies based on the findings

Find rational solution

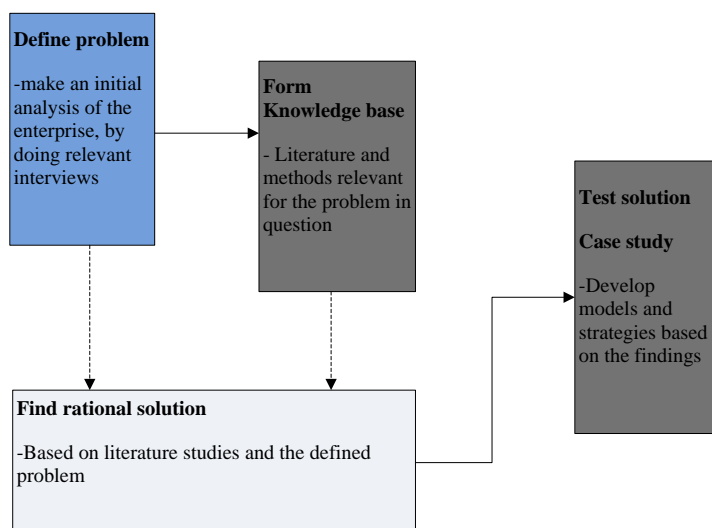-Based on literature studies and the defined problem

Figure 4 ORP, Define problem-activity

The ICT4MPOWER Group is developing medical records as SaaS products for specific diseases, called health applications (HA), with the purpose to make them available around the world. The reason why they are doing this is because the Group wants to contribute to better health outcomes, and improve and facilitate the monitoring of diseases such as AIDS and others diseases in developing countries, where many of this diseases, even if they are being treated, it is still difficult for the governments to make an appreciation of the results of the treatments.

Since the product needs to be adapted to the different needs of every country it is necessary for the Group to engage people to be part of a community of HA users and developers that can help the Group make these adaptations.

The Group believes that a strong community that is committed and shares the same values and believes as the Group, is necessary in order to achieve better health outcomes, as well as a product that is adapted and affordable to everyone. In order to create a community that contributes it is necessary to have a community supporting platform that supports multiple actors and makes it possible to communicate and contribute from different locations around the world.

3.1 ICT4MPOWER's Present situation

The ICT4MPOWER has defined, and is still working in developing, several aspects regarding the product, such as learning materials and requirements specifications, but as organization and business they have not worked out any values or strategies. Neither have they worked on the platform services that will support the collaboration between the Group and the communities.

Thereby my thesis work is an important part of the main project. Even though it is difficult to define in such an early stage and without any market evaluation, I will suggest strategies based on my research in order to organize the internal and external teams of collaboration, as well as propose platform services depending on the characteristics of the stakeholders and the online community. This will result in an initial program, in form of strategies and methods for organizing that will be further developed by the Group.

3.2 Problem formulation

Many companies today have the tendency to create e-business' without taking in consideration the purpose of the business, and they fail because the lack of knowledge about how Internet influences the business, but mostly because they do not understand that the Internet has to be used as a complement of the business and not as a pillar expecting it to hold the entire business [9].

Business models, strategies and clear methods for working as an organization, as well as supportive IT services are an important part for creating a value proposition that lasts in time, leaving the Internet as only a medium to reach the audience.

Thereby focus has to be putted into creating a value proposition that uses the Internet as the medium to gain profitability.

ICT4MPOWER is a young small enterprise, and the company is missing clear directives and strategies for reaching what they want to achieve. Even though the Group consists of a staff of a few members, a clear vision has not been stated yet, and everybody is working under its own directive and no common goals have been established as organization. This will affect the Group in the future when a large community is integrated. Therefore common goals and roles need to be established and strategies need to be studied.

4. Initial analysis of ICT4MPOWER

In this chapter I present the initial analysis performed after receiving information that the ICT4MPOWER Group has collected. Reading this will give a view of the product, the stakeholders, the multi-sided platform and an introduction to some theoretical aspects.

4.1 The Product

This is a brief introduction to the product.

The ICT4MPOWER Group will provide Open-source Software as a Service (SaaS) Health Applications (HA). The customers will be able to run the HA's online and also to download them to run the applications locally on their computers.

The idea of making different applications is to give the customers the possibility to select the interfaces and parts of the regular software that bring value to their business instead of buying and placing money on software packages that include services that are not required by all the customers. This is both resource and space saving for the customers.

As mentioned the product is open source and will be developed under the rules of open source software development and in collaboration with a community of developers.

It is a freemium concept, since the customers and the community of developers are the ones standing for the development of the product.

4.2 Multi-sided Platform

A multi-sided platform (MSP) is a platform serving several stakeholders. The reason why the ICT4MPOWER Group needs a platform is to manage the interrelationship between the stakeholders. They also need a place from where to launch the products, new releases related to the products, capture important information and feedback about the product, generally speaking they need a place from where to provide services to customers and stakeholders so that these can perform their tasks and make valuable contributions.

The platform is important in the way that it helps the ICT4MPOWER Group to contribute to the open source movement.

Table 1 shows a SWOT-analysis performed to find the strengths, weaknesses, opportunities and threats of the MSP.

Table 1 SWOT-analysis of the MSP

Strengths	Weaknesses

• It's community driven
   o Many inputs from different persons results in great ideas
• Accessibility and availability
   o The platform and it's services are easy to reach at any time
• Reduces costs for the customer
   o Reduces storage costs
   o Reduces maintenance costs
	• It's complex to manage
	   o Many parts need to be satisfied which requires many different services and skilled people to manage these services. It might be troubling if we don't have the necessary skills
	• It's exposed to external attacks
	   o Cyber attacks, spam and others we need to be aware of

Opportunities	Threats
	• Exposed to the competitors, easy to copy
• To reach a large number of customers, both locally and online, around the world • To reach many local partners • To reduce developing costs	• Infrastructure ○ unsatisfactory ICT infrastructure of the customer's country • Human resources (attitude, and service) • Governmental decisions that might affect us directly or indirectly

4.3 The stakeholders

There are four stakeholders identified by the ICT4MPOWER Group; these are all part of the platform but some of them have a higher level of importance from a MSP point of view. The levels of importance are divided into high, medium, low, and none to express the importance of the stakeholders. It is crucial for you, as reader, to understand the difference between the stakeholders' importance for the product and for the platform. A stakeholder can be irreplaceable in its functions in the development/marketing of the product but acquire a lower level of importance for the MSP.

Figure 5 "The MSP and the stakeholders", is a visualization of the stakeholders with examples of the task and/or activities they must be able to perform when entering the MSP as customer or contributor.

4.3.1 The Health Application User

The Health Application User (HAU) is the end-user and can be health organizations, patients or other organizations working to improve patients' health outcomes.

The HAU's are important not only because they are the Group's customers, but also because they have a key role in the improvement of the products and the development of new applications. They will also provide the Group with the information required to improve the platform services and will be constantly affecting the way the Group does business with the customers. Looking from a MSP perspective, the end-users have a high level of importance so most efforts of the Group are focused on attracting the end-users to the platform.

In terms of CRM all the stakeholders are customers of the MSP and everyone providing feedback is a contributor, however, to avoid any misconception, I would like to clarify the way in which the terms customer and contributor will be used in this document. To make a differentiation between the internal team and the partners performing sells and development tasks, the term customer will be used as a synonym of the term end-user; however the formal definition of the stakeholder is HAU. The term contributor will be used as a synonym to all the stakeholders performing development, and sells and marketing activities.

4.3.2 Community of Health Application Providers

The community of Health Application Providers (HAP) is a group or community of developers and designers that will be engaged and empowered by the ICT4MPOWER Group to design and develop the Healthcare Applications (HA). These are all participating voluntary and committed to the work for different reasons.

The ICT4MPOWER Group believes strongly in the future of the open source software (OSS). Therefore the community of HAP is very important and has a strong influence in the product development projects. Since it is crucial for the Group to attract the developers in order to build a community, the community of HAP has a high level of importance from a MSP point of view.

4.3.3   Local Partners

The Local Partners are vendors of software situated in different countries around the world. They will have the task of marketing the product and supporting customers in local areas by facilitating local installation of the applications (in physical machines), end-user training, customization of applications, and making diverse contributions as developing and designing new health applications.
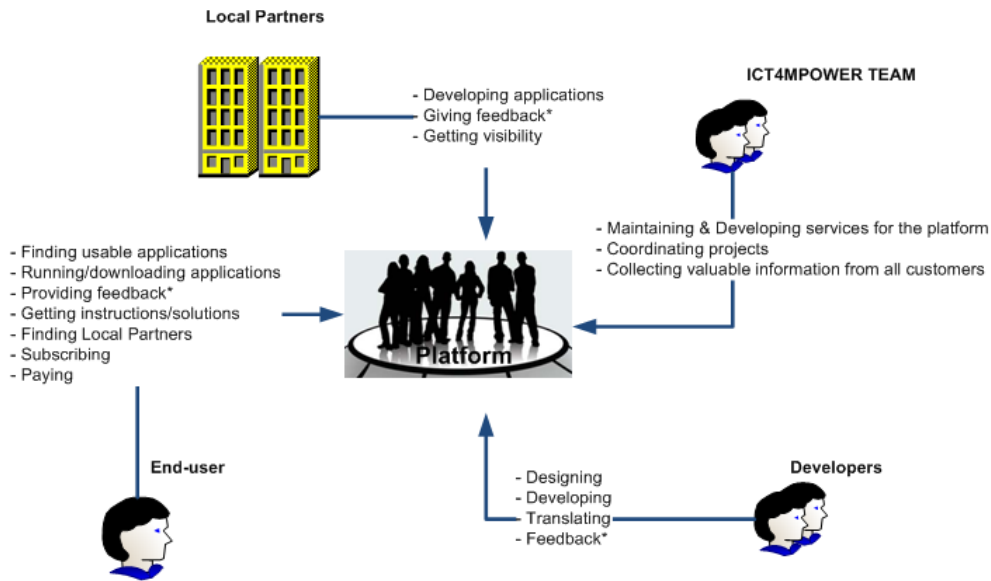
The local partners have a medium level of importance from a MSP point of view since they have a low level of participation through the platform.

4.3.4   ICT4MPOWER Team

The ICT4MPOWER Team is the team in charge of the coordination of all projects and customer relations management. They have also the task of managing the platform i.e. maintaining and developing services for the MSP, and collecting valuable information from all platform customers.

The ICT4MPOWER Team has a high level of importance due to their tasks and influence in projects related to the platform, and their role within the organization, but there is a difference between the ICT4MPOWER Team and the other stakeholders and that is that since they are part of the internal group they are excluded as customers of the MSP.

The reason why I decided to exclude them as customers of the MSP is because they do not get any value from the platform on the contrary their task is to add value to the business and bring value to the customer through the platform.

Local Partners

- Developing applications
- Giving feedback*
- Getting visibility

ICT4MPOWER TEAM

- Maintaining & Developing services for the platform
- Coordinating projects
- Collecting valuable information from all customers

- Finding usable applications
- Running/downloading applications
- Providing feedback*
- Getting instructions/solutions
- Finding Local Partners
- Subscribing
- Paying

End-user

Platform

- Designing
- Developing
- Translating
- Feedback*

Developers

*Feedback: reporting bugs, giving new ideas for applications and services, rating applications,

Figure 5 "The MSP and the stakeholders"

We need to understand that different stakeholders have different needs, and therefore the service requirements will vary.

They have also different interests and personalities, so what might be interesting for one of the stakeholders is not necessarily interesting for the other.
Table 2 shows the core activities that every stakeholder is supposed to perform in the platform. I also describe, briefly, the sort of services needed to satisfy the stakeholders in relation to their personalities, and what some of them are looking for when collaborating (i.e. the reason why they would contribute).

Table 2 Stakeholders and MSP services [3; 4]

Role	Core Activities	Sort of- service
End-user	• Find local partners • Find application • Running/Download application • Get instructions/solutions • Provide feedback/express ideas • Subscribe • Pay • Donate	Simple & Intuitive services Friendly/attractive environment *Looking for:* • *Meet a personal technological need* • *Contribute to better technology* • *Cut costs*
Local Partner	• Provide feedback • Be visible for customers	Same as End-user with a more technical and business-based view *Looking for:* • *Address quality software* • *Exploit direct revenues* • *Ideology - software must be free* • *Future business benefits* • *Cut costs*
Developers community	• Design applications • Develop • Translate • Provide feedback	Efficient services creating a "Fun to use"-experience *Looks for:* • *Ego-gratification* • *Sense of belonging to a community* • *Address quality software* • *Share tedious tasks with users* • *Ideology - software must be free* • *Future career benefit* • *Earn money*
ICT4MPOWER-Team	• Maintain & develop platform services • Market the platform externally • Coordinate projects • Collect valuable information from stakeholders	Managerial services making it easier to coordinate projects. Monitoring services *Looking for:* • *Cut costs* • *Make software affordable* • *Exploit direct and indirect revenues* • *Ideology - software must be free*

4.4 Literature review

In this section you will find a review of the relevant literature. I have done a review of 24 articles and 1 book. This review includes extracts of the articles I have studied and will give you an introduction to the different theoretical aspects of this thesis work.

The Literature review chapter is part of the "Form knowledge base"-stage in the Operational Research Process.
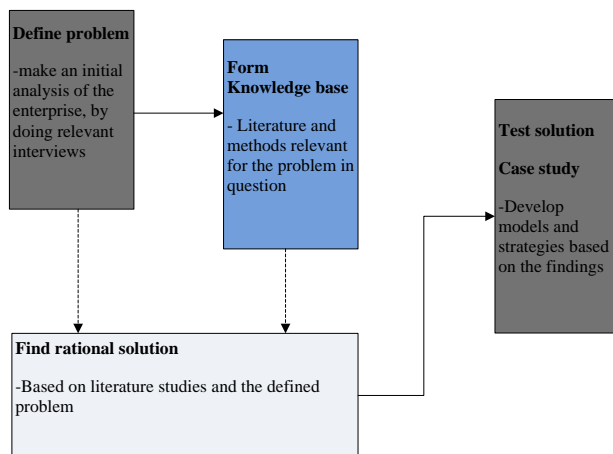
Figure 6 ORP, Form knowledge base-activity

4.4.1 What is strategy?

In this section I will concentrate on defining what strategy means in general but also from a business, organizational and information system's perspective.

According to [5], strategies are business decisions taken by people in response to sets of perceived environmental factors. A strategy consists of three key elements:

- Vision – Where do we want to go
- Strategic objectives – How will we achieve the vision
- Mission – What are we?

Based on this definition we can state that the activities performed by a company will affect and determine in which extent it reaches its vision.

What characterizes the activities of a company is determined by its strategic positioning.

M. Porter makes the following definition about strategic positioning: *"strategic positioning attempts to achieve sustainable competitive advantage by preserving what is distinctive about a company. It means performing different activities from rivals, or performing similar activities in different ways."* [7].
According to Porter, three key principles underlie strategic positioning. Those are [7]:
1. Strategy is the creation of a unique and valuable position, involving a different set of activities.
2. Strategy requires you to make trade-offs in competing – to choose what *not* to do.
3. Strategy involves crating fit among a company's activities.

To achieve a fit among the activities performed within the MSP (mentioned earlier) I will divide the strategy in three areas according to Pearlson and Saunders. These are Business Strategy (BS), Organizational Strategy (OS) and Information System Strategy (ISS).

4.4.1.1 Business Strategy
Business strategy (BS) is the process of developing strategy for a single, largely self-contained business [6]. Managers create these plans in response to market forces.

The market forces are those who shape the competitive situation for the business [8]. There are five forces shaping the competitive situation for the business, these are the intensity of rivalry among existing competitors, the barriers to entry for new competitors, the threat of substitute product or services, the bargaining power of suppliers, and the bargaining power of buyers [9].
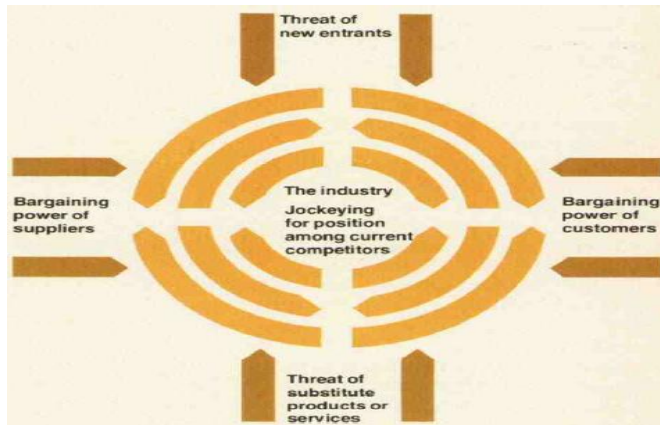

Figure 7"The five forces" that shape the situation of the business

M. Porter presents three frameworks called generic strategies [10]. These can help us understand the strategies to build a competitive advantage.

- **Cost leadership** refers to the company that is aiming to be the lowest cost-producer in the industry. The product and services are comparable to those offered by others in the industry so that the customers notice the relative value [10].
- **Differentiation** is achieved when the organization offers a unique product or service by identifying which qualitative dimensions are most important for the customer and then finding a way to add value to one or several dimensions of the product. The prices charged must be fair relative to the competitor's prices in order for this strategy to work [10].
- **Focus** allows an organization to limit its scope to a narrower segment of the market and specialize itself in offering customized products to a group of customers. The strategy has two variants:
  1. *Cost focus* is when the organization aims for a cost advantage within a segment.
  2. *Differentiation focus* is when an organization seeks to differentiate its products or services within a segment [10].

When we talk about electronic business (e-business) the forces shape the business in a different way. M. Porter means that the businesses are more exposed and that it becomes easy for the competitor to copy the way others do things. Figure 8 "How the Internet influences industry structure" [9] shows the good and bad things of including the Internet in the business.
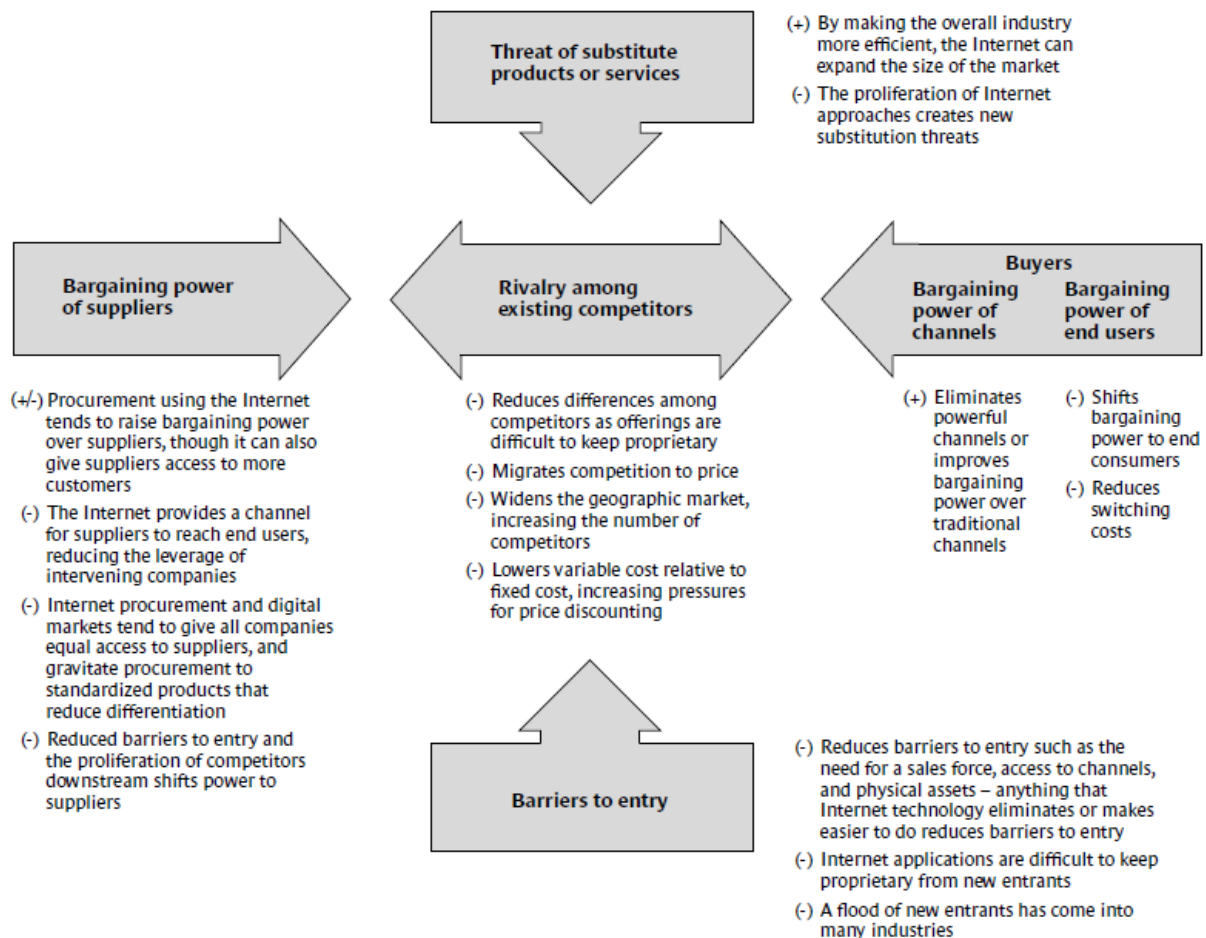
Figure 8 How the Internet influences industry structure

Figure 8 shows that when using the Internet to do business, the organization and the operations get exposed and it becomes crucial to find a way to do profitable business, i.e. acquiring cost and price advantages.

M. Porter mentions two ways for doing so:

1. *Operational effectiveness* means doing the same things as the competitors but doing them better. It can include having better technology, skilled people, or more effective managers. Since the Internet exposes the business so much it becomes extremely difficult to gain any durable competitive advantage by only focusing on improving the operational effectiveness [7].

2. *Strategic positioning.* Since it becomes hard to sustain the competitive advantage, the strategic positioning becomes more important. A mentioned earlier strategic positioning is about focusing on being profitable by defining a unique value proposition and selecting the right things to do and not to do [7].

4.4.1.2 Organizational Strategy

Organizational Strategy (OS) is concerned about the corporate needs organizing its people. The OS is a strategic management plan that defines six important components [11]:

1. ***Purpose and Vision, Philosophy and values***. Defines the overall business purpose and the strategic direction of the organization including.
2. ***Structure and roles***. It is a definition of the way a company wants to do things according to the vision and the purpose of the company. It also includes the roles used to organize the work.
3. ***Recruitment***. It is a definition of the kind of coworkers that will be accepted to collaborate internally.
4. *Training and development* – this is how the company plans to improve people's knowledge and abilities.
5. ***Communication***. It is a definition of the communication procedures within the company. Communication must be both qualitatively and quantitatively, i.e. the managers must capture information from coworkers that can be used to improve the organizational work but also give information to the coworkers about how the work has improved and in which extent they have reached the goals.
6. ***Care and concern***. Defines how the organization threats its employees. This is very important because of the effect it has on the workers. If these policies are followed by the managers, it will create a chain reaction all over the company.

All these components are important because they give direction to the organization allowing it to work as an organism.

4.4.1.3 *Information System Strategy*

The Information System Strategy is a set of decisions that either enable or drive the business strategy. ISS must be concerned about technology choices, but also about the relationship of technology choices to business strategy choices.

In the formulation of an ISS, IT can drive business transformation (the ISS becomes the business strategy), as well as enable transformation (create and exploit new markets, link customers to the firm, define new standards of operational) [5]. IT can also be an inhibitor to business transformation; therefore the need of a strategic alignment. Strategic alignment addresses the process of coordination among the internal and the external domains of business and IT. Strategic alignment is based on two fundamental assumptions:

1. ***Strategic fit*** – Any strategy must address both the internal and the external environment of the organization. The strategic choices must be ones that are amenable to change [5].

The external domain is concerned with choices related to:

- The scope of the Firm's Business
- The Distinctive Competencies (the core competencies and critical success factors that provide competitive advantage)
- The governance of the firm (the impact of regulatory agencies on its strategic choice)

The internal domain is concerned with choices related to:

- Administrative (Organizational) Structure
- Critical Business Process
- Human Resource Skills

2. **The Dynamic Nature of Strategic Fit** – *The ISS is dynamic,* it must not merely accept change it must embrace change [5].

The firm that implements an ISS must also be concerned about the impact it may have in the business strategy and the organizational strategy, and vice versa. Every single change that is made to the ISS will also affect the business and the organizational strategy. Figure 9 "The information System Triangle" [12] describes the relation between the strategies and shows that these affect each other.
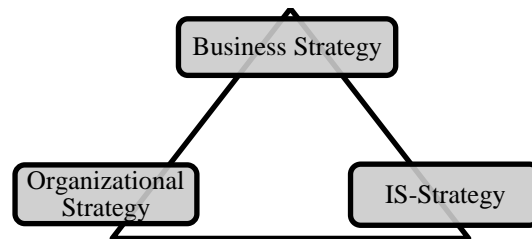
Figure 9 "The Information System Strategy Triangle"

The key of success is balancing these three strategies and always remembering the impact they have on each other.

4.4.2 Multi-sided Platform and online communities

I already mentioned that the reason why the ICT4MPOWER Group needs a platform is to manage the interrelationship between the stakeholders. They also need a place from where to launch the products, new releases related to the products, capture important information and feedback about the product, generally speaking they need a place from where to provide services to customers and stakeholders so that these can perform their tasks and make contributions.

4.4.2.1 What is a Multi-sided Platform?

Important for the creation of a strategy for a multi-sided platform (MSP) is to understand what we actually mean by multi-sided platforms. Sravan makes the following definition: "[…] Multi-sided platforms bring together two or more distinct but interdependent groups of customers. Such platforms are of value to one group of customers only if the other groups of customers are also present. The platform creates value by facilitating interactions between the different groups […]" [13]

In other words a MSP's value increases in the extent that it motivates and attracts more users. This brings us to the fact that the services offered by the MSP must in first place be value-bringing services for the customers, i.e. the organization must lure one group of stakeholders with a low-cost value proposition in order to attract users of the other side of the platform [13].

The importance of attracting the users brings us to the necessity of investigating the actual environment in which they will interact and the principles that brings an online community to life.

4.4.2.2 The Online Community

An online community is a group or association that shares a common language, interests, and values, and operates under a defined organizational structure by cooperating and communicating through electronic media and possibly represented by an avatar. It is built upon the intensive interaction of community members [14].

According to [14], online communities can be divided into four groups and each one of the group has subdivisions and a community supporting platform (CSP) adapted to the specific components and requirements of the community.

Table 3 presents the four groups, each group's subdivisions, short descriptions of the group's characteristics and its respective CSP.

Table 3 Description of the different communities and the community supporting platforms

Community	Subdivisions	Description	CSP
Discussion communities	- *Person-to person Communication* (relationship community, etc.) - *Topic-oriented* (sports, ecological, etc.) - *Communities of practice*(certain topics and know how) - *Indirect discussion communities* (review community, etc)	These are dedicated to information exchange.	Emphasizes the content generation and exchange, to a specifically defined topic. It has a simple organizational structure putting emphasis on rules for participation and communication.
Task- and goal-oriented communities	- *Transaction communities* (arises around e-commerce platforms) - *Design Communities* (open source community) - *Online Learning Communities*	These are communities trying to achieve a goal by collaboration.	Platform services vary depending on the subdivision. **See review below for detailed description.**
Virtual worlds		These provide virtual settings of complex worlds, e.g. a jungle in a game.	Provides mappings of real or fantasy settings. Information about participants is presented through avatars. The basic services depend on the specific context of the virtual world.
Hybrid communities		These are communities that can contain several types of communities.	The key is a design that allow for a seamless integration of different types of communities and technologies for their support.

4.4.2.2.1 Task- and goal-oriented community

The task and goal oriented community has three subdivisions. The subdivisions contain fundamental services that have been divided into Knowledge, Intention, Negotiation and

Contracting, Settlement, and Community support services. For each of these services there is a set of modules that characterizes every CSP.

1. ***Transaction communities*** are meeting places for buyers and sellers that arise around electronic commerce platforms. There is a great need of information about the products in these communities and communication support for customers is needed in each phase of the transaction market in order to create a feeling of community. The required services and possible modules for stimulation are shown in Figure 10 [14].

Knowledge	Intention	Negotiation and Contracting	Settlement
• Product Information • Product Taxonomies • Knowledge about transaction partners	• Offer • Demand • Counteroffer • Electronic Product Catalog • Request	• Auctions • Matching • Bargaining • Online Contracting	• Logistics • Online delivery (download) • Online Payment •
Community Support			
• Community created knowledge (reviews, support, etc.)	•	• Exchange of complementary products between users	• Customer Support • Customer Feedback • Support Communities • User games

Figure 10 Required services and possible modules for stimulation of Transaction communities [14]

2. ***Design communities*** aim for the design and development of a product. Open-source communities belong to this category. Participants of the community have specific skills as a requirement for participating, and it is essential for the organization of development process to have a list of the participants and their qualifications. The rules of behavior are related to the usage of the developed product and its further development. The important modules to support the community are bug reports and discussion, review of provided solutions, and forums for discussion and support of members. The required services and possible modules for stimulation are shown in Figure 11 [14].

Knowledge	Intention	Negotiation and Contracting	Settlement
• Product Information • Versions of designed products • Knowledge about the design process •	• Request for design • Offer of design component • Counteroffer • Electronic Product Catalog • Request for resources • Request for information	• Auctions • Matching of requests and offers • Bargaining • Management of task lists	• Tools for collaborative design • Tools for consistency check •
Community Support			
• Community created knowledge (reviews, support, etc.) • Reviews of provided solutions	• Request for certain features of products • Request for partners	•	• Discussion forums • Support for members

Figure 11 Required services and possible modules for stimulation of Design communities [14]

3. ***Online learning communities*** are established learning spaces for a defined subject where the participants can acquire knowledge and support for long-lasting learning. Common language is one of the most important requirements, i.e. a glossary related to the learning subject. The CSP has to provide services that enable access to knowledge, as well as different modes of learning, e.g. online lessons and support, and discussion forums. The required services and possible modules for stimulation are shown in Figure 12 [14].

Knowledge	Intention	Negotiation and Contracting	Settlement
• Literature for Courses • Taxonomy • Links and Resources • Papers written by students • Information about participants	• Request for students • Offer of courses • Request for courses and self-study subjects (thesis, case study, etc.)	• Matching of requests and offers for task related to learning • Management of accepted learning tasks (for example Ph.D. thesis.)	• Course delivery (video conference, multimedia, • Exams • Evaluation of exams • Feedback for the community
Community Support			
• Evaluation of teaching material by students • Evaluation of lecturers	• Request for help on a certain subject or administrative procedure • Request for partners for a certain learning task	•	• Discussion Forums • Q&A sessions

Figure 12 Required services and possible modules for stimulation of Learning communities [14]

5. ICT4MPOWER Case study

In this chapter I will present the deliverables based on the results and analyses I have made. It is also a logical collection of all the thoughts that the Group has contributed with. This chapter is part of the "Test solution"-activity and is based on the solution found through the problem definition, literature research and discussions with the Group's manager.
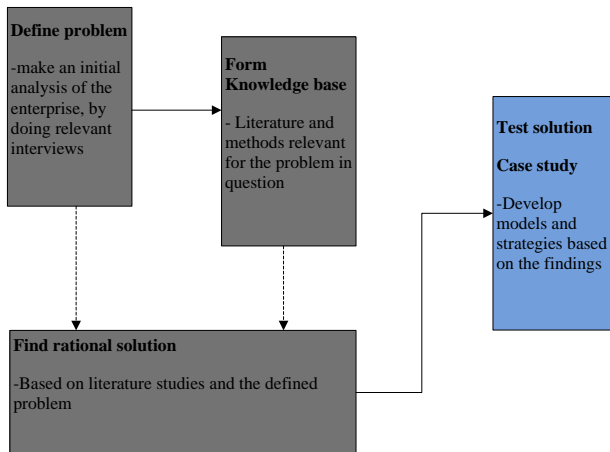

Figure 13 ORP, Test solution-activity

Since most of the work was created in collaboration with certain individuals, such as the project manager, and conducted as discussions and not questions-based interviews, these discussions are formulated as results rather than summaries of interviews.

The deliverables were:

- Business strategy
- Organizational strategy
- Information system strategy and vital functions and services for each stakeholder

This chapter includes all the deliverables, though it is structured in a different way so that the content is presented in a more coherent manner.

5.1 First steps in the formulation of a strategy
The mission, vision and values

As presented in the literature review the first steps in the formulation of a strategy are to define the mission, vision and corporate values. Since the Group is in the startup process there is an absence of the primordial definition of vision, mission and corporate values. These are important to define in order to create the basis for a MSP that is aligned with the Group's overall goals.

According to the literature these ideas must come from questioning the purposes of the enterprise and what is most important to achieve through the establishment of the corporation.

According to this the following statement has been made in direct collaboration with Rustam Nabiev, manager of the ICT4MPOWER project:

The vision of the Group is to provide Qualitative, Affordable and Accessible Healthcare Services at the Point of Need.

The Mission

The mission is to improve health at the global level and to provide the best healthcare applications and services by creating innovative solutions based on the customers' needs.

The Values

- We put the patient in the centre and we strive to always give Qualitative and Innovative solutions based on the patient's needs
- We care about others and want our healthcare applications and services to be Affordable
- We work for everybody's best and are therefore Accessible at the point of need

5.2 Organize the work in order to fulfill the mission
The organizational strategy

According to the literature review, the organizational strategy is composed by several concepts that have to be defined. These are:

1. ***Purpose and Vision, Philosophy and values***
2. ***Structure and roles***
3. ***Recruitment***
4. ***Training and development***
5. ***Communication***
6. ***Care and concern***

As part of the solution, these are presented in the following section.

The strategies presented in this section are specifically for the MSP-segment of the Group; however this does not imply that they can't be used in other segments. If doing so I recommend a deep analysis of the segment so that the strategies are consistent with the segments overall goals.

As already stated, ICT4MPOWER strives to improve effectiveness of health systems and to empower healthcare communities by using Information and Communication technology. It is here the high quality of the Groups healthcare services begins. The Group has defined five areas of focus when it comes to the internal aspects of the organization. According to the Group, these are fundamental to sustain the organization. The focus areas are the definition of *1) Purpose and Vision, and Philosophy and values*.

- **Knowledge –** Always providing the opportunity for co-workers to gain new knowledge in order to be more competent and efficient. Knowledge (about how things

work), and information (about real needs), is the foundation for new ideas and better solutions for our customers and thereby the patients.

- **Innovation** – We strive to envision the appropriate innovations for the environments of today and tomorrow in order to give real and usable solutions for the patient
- **Openness** –The only way for us to show that we care about others is to be open with our customers and ourselves
- **Team Spirit** – To work for everybody's best, taking responsibility for my work to enable other's work so that we can bring the best services for the user

5.2.1 The structure and roles

In this section I will present the main roles and activities that are related to the ICT4MPOWER Team. The activities can also be applied to any stakeholder when it takes different roles within its segment.

All these activities are important and will help the Group to reach the vision and a proper structure in their work.

Table 4 "Roles and activities" [25] summarizes the roles and activities of the ICT4MPOWER Team.

Table 4 Roles and activities

Role	Activity
Platform management	- Bringing upgrades and Improvement to the platform - Software know-how - Feature selection
Project management	- Priority and schedule management - Documentation
Product management	- Incorporation of experience - Product selection
Customer management	- Outreach - Incentives - Issue management
Professional development	- Networking - Identification of best practices - Attend trade events
Brand management	- Brand support - Situation management - Capture brand feedback
Advertising and Marketing	- Listen/join conversations - Marketing analysis - Impact reporting - Ad rotation
Staff development	- Recruiting - Team building - Staff training

Business planning	• Budgeting
	• Goal definition
	• Business alignment
Community management	• Control/Management
	• Moderation and rule enforcement
	• Elicit participation
	• Rewards and incentives
Content management	• Content plan
	• Research and insight

5.2.2 Recruitment advices

The recruitment of new forces that will integrate the different collaboration teams must be done carefully. The people that will be part of the developer's community, or the ICT4MPOWER team will be considered as partners of the business and should therefore be selected in the same rigorous way that you select a partner. They must share the vision and the values. They also need to believe in the future of the OSS.

Notice that based on these advices not everyone will be able to be a part of the Group. This not necessarily means that the Group must be selective while letting people be a part of the developer's community, since this can be difficult to manage and closing the doors for developers that want to contribute can be dangerous.

How do we deal then when the possible lack of quality in the contributions? This will not become a problem since qualitative services and products are a part of the vision, which means that the Group will rigorously control every health application and service that will be launched through the MSP (already included in the roles and activities).

5.2.3 The Strategic management plan; methods and activities

To reach the goals that the Group has stated it is fundamental to provide a clear method of working. In this section I describe how the values are going to be developed within the group of co-workers.

In order to make the values a day to day reality, there are several behaviours that must be developed within the group. These form part of 4) *Training and development*, 5) *communication* and 6) *Care and concern,* and have been divided into subcategories and listed below:

5.2.3.1 Communication

For internal communication ICT4MPOWER uses an online platform called Projectplace [26]. This platform is used for information sharing purposes. The information and documentation becomes available for every co-worker which makes it easier to contribute to others work. Other communications channels that can be used internally are e-mail and also chatting functions.

5.2.3.2 *For personal and team development*

- Giving feedback to the team members will help the team and the individuals to analyze their strengths and weaknesses. This will help the Group to reach openness within the organization.
- Arrange monthly meeting with team members to reflect on current work, share some lessons learned, and understand each other better. Before the meeting, to come up with a challenge or problem to discuss, so that everyone can give their opinion about that.

5.2.3.3 *For further development of team spirit*

- For tasks/projects that require multidisciplinary team, arrange a team of up to 6 people, and minimum 2 people (this type of structure will be considered in upcoming projects)
- Define concrete time plan, roles and responsibilities of each member
- Team work life cycle – honeymoon phase, argumentation phase, integration phase
- Give support and coaching during argumentation phase – project coordinator should decide in the worst case when the team cannot decide on which approach to consider
- To think about arranging frequent social gatherings in order to understand each other better, and have a possibility to communicate with each other on a personal level.

5.2.3.4 *For further development of being innovative*

- Share ideas and develop the ideas into results will help the Group to reach their goals of innovation.
- Rotation of team members for a new group to work on new tasks/projects to get new perspectives, which will drive innovation
- Always questioning the status quo and our own applications and services will help the team finding new and innovative solutions and improvements to current solutions. This is also fundamental for staying competitive
- Embrace on making mistakes, learning from those mistakes and never be afraid of making new mistakes.
- To make a system for easy capturing of ideas, making it transparent to other team members. Selecting prioritized ideas and making them happen.

5.2.3.5 *For further development of developing knowledge*

- 2 week exploring–approach. The first week is for exploring solutions (obtaining new knowledge), and finding the right one. While the 2nd week is to apply those solutions for solving the problem at hand and disseminating to others. Through this cycle a person can obtain valuable knowledge the 1st week, and apply it in practice the second week.
- To cultivate in people culture for staying hungry for new knowledge

5.2.3.6 *For further development of creating openness*

- Team members should accept feedback as a medicine for personal growth and getting new knowledge
- Activate team members to give feedback to each other

- Care about team members, and give feedback when you see opportunity for their improvement

5.3 Business Strategy

When creating a strategy for such an important part of the business as the MSP, it is important that it is done carefully and with full understanding of how every decision that is made will affect the business. The fact that this is an e-business is not an excuse for not using the regular strategies presented earlier. We must see the business as a regular business and the use of the MSP and the Internet only as a complement to the business; it is important to understand that this is a regular business and that the MSP is the means through which the Group will reach their customers.

According to the statement done by the Group it would be necessary to adopt a combination of both cost leadership and differentiation strategy. The words Innovative and Affordable force the Group to be consistent in both directions this is something that must be studied in terms of business and preferably under the guidance of an expert.

5.3.1 MSP Business Strategy

Focusing more on the MSP, and according to what we've learned from the literature, it is appropriate to opt for a cost-effective strategy, meaning that focus is putted primarily on costs (cost-focus), i.e. the services must be developed at as low costs as possible. This is complementary to the overall corporate goals. When the Group is able to produce platform services at a low cost, they can also provide low-cost services to the customer.

Producing low-cost services will depend on how the Group encourages the Open-Source community and the customers to contribute with ideas for improvement. In turn the platform must provide the right services to the customers and developers to support the initiatives taken by the Group. It will also allow the Group to focus on the innovative aspects that are required in order to differentiate the platform services from the competitor's.

Taking in consideration that the e-businesses are exposed to the possible competitors it becomes difficult to sustain an advantage merely by focusing on the innovative aspects of the platform.

As mentioned in the Literature review, the ICT4MPOWER Group will need to focus on satisfying both internal and external needs by combining the cost-effective strategy and the innovative initiatives, resulting in a freemium and premium concept.

It is a freemium and premium concept since the customers get to choose if they want a free version of the product or if they want to pay in order to get constant improvements of the software.

To better understand how the Group will work and satisfy the internal and external needs I have developed a business model. These are important in the process of clarifying, how things are interconnected, for the one creating the strategy and for the outsiders.

The business model expresses the freemium and premium concept adopted by the Group.

The freemium way of thinking requires a community of developers and the customers to stand for the development of the product, while the Group focuses on delivering support services to customers. This reduces the costs of production but includes other costs as platform development costs and maintenance costs for the services that the Group has to provide to the community of developers and to the customers.

Tables 5, 6 and 7 are the business model for the MSP divided into the segments of customers. These are the End-user, the Local Partners and the community of Developers. These are all customers of the platform with different interests and thereby a different value proposition is offered to each one of them. Also the key activities that the Group has to perform differ depending on the platform's customers.

5.3.1.1 End-user business model

This business model represents the value proposition for the customer and what the Group can obtain from them.

The customer's segment is defined as end-user, and in the value proposition focus has been placed on the affordability and availability of the services to the customer, by providing an open space where they will be able to find independent Health Applications. We can also notice that a cost-reduction solution is proposed to the customers and even a free-solution concept by the self-service customer relationship.

Making the customer relationship automated is best way to support the Group's cost-effective strategy. Also co-creation is used in this section to market the platform and to capture the customers' needs and opinion about platform services, which means that the Group will capture and be able to provide innovative services based on the end-user requirements.

The major channel is the MSP in which services as forums and feedback services will be included (services are defined more specifically in the ISS section).

The key activities will make it possible for the team to capture the customer's interests and also to market the local partner's business from which the Group also will get revenues. I believe that to create good revenue stream for the entire business, the Group needs to focus mostly on marketing the local partners rather than on advertisement revenues. In this way the Group will create a more reliable revenue stream and at the same time they will be able to capture the end-users needs in a more effective way through the local partners.

The key resources presented will make it possible to sustain the value proposition.

The cost structure represents the cost that are directly connected to the platform and that are acquired with the value proposition. The key partner is the ICT4MPOWER Team, which is the one responsible for the key activities.

Table 5 Business Model Canvas for End-user

Key partners	Key activities	Value propositions	Customer relationship	Customer segment
• ICT4MPOWER Team	• Collect valuable customer information that will help in the improvement and innovation processes of the platform • Continuously search for local partners • Monitoring the users feedback and usage of services	• One Marketplace for Health Applications • Continuous access to services and applications • Cost reduction – no local storage needed, - reduced maintenance cost • A way to find a local partner to help with local installation and support • Support for health applications	• Automated service and access to platform • Self-service and access to platform • Automated feedback on Health Applications Features • Automated suggestions for Health Application improvements and new ideas	• End-user
	Key resources • Database & background system • Platform services		**Channels** • Platform	

Cost structure	Revenue Stream
• Platform Maintenance Costs • Platform Services Development Costs • Call Center Support Costs	Direct: • Advertisement • Founds and sponsorship • Donors Indirect: • Local Partners share's percentage

5.3.1.2 Local Partner business model

In this model, the value proposition is presented for the Local Partners which, as mentioned can be used to earn revenues as well as capture the different interests from the customers that are placed in different countries.

It is undeniable that the possibility of making new customers, combined with a fair cost for producing this opportunity will attract some Local Partners; thereby the value proposition is focused on giving the possibility to use the platform's services so that both customers and Local Partners can contact each other.

The key activities are intended to create these opportunities by making investigations of the possibilities to enter the markets in new countries. In this way the Group reduces the risks for entering the markets.

The customer relationship should be direct, meaning that the Local Partners can contact the Group to do business and vice versa. This does not leave out the possibility of making the

relationship fully automated, but since the Group is at such an early stage and has not yet acquired the experience to manage this kind of relationships, I recommend using direct contact as the way of contacting one another. This is positive since it will create strong bonds between the Group and the partner.

Table 6 Business Model Canvas for Local Partners

Key partners	Key activities	Value propositions	Customer relationship	Customer segment
• ICT4MPOWER	• Manage relationship with stakeholder • Maintenance of platform • Capture local partner requirements • Investigating possibilities to enter market	• Direct contact with customers & Access end-user related information • Visibility for potential customers • Training in Health applications	• Direct contact • Automated service and access to platform	• Local Partners
	Key resources • Platform • Database & background system		**Channels** • Platform • Direct contact	

Cost structure	Revenue Stream
• Platform Maintenance Costs • Platform Services Development Costs • Costs for managing activities	Direct: • Advertisement • Founds and sponsorship • Donors Indirect: • Local Partners share's percentage

5.3.1.3 Developers community business model

The value proposition has its focus on providing continuous accessibility to the services in order to get continuous contributions and innovative ideas from the community of developers. It also focuses on the gratification aspects that are necessary to attract the developers into the platform and the community.

Developers not always work for free and this possibility is included in the value proposition as well. Developers can earn money by for example making contributions directly to the Local Partners (consultancy jobs), or by developing an application and selling it to the ICT4MPOWER Group.

The relationship is fully self-service with the possibility to enter forums, take direct contact with other developers, access learning materials, etc. The sense of freedom and trust is an important aspect for the Group. The idea is to help them to contribute rather than make them contribute; this, of course, under the rules and conditions that the Group will state for the community.

Table 7 Business Model Canvas for Developers Community

Key partners	Key activities	Value propositions	Customer relationship	Customer segment
• ICT4MPOWER	• Community Management	• Continuous access to services • New challenges • Possibility to earn money • Access end-user related information • Access to learning material • Access to a place for developing new skills and improving existing skills • Collaborators & Project coordination services • Open space to share and receive new information and learn new methods • Gain credibility and respect from coworkers	• Self-service and access to platform • Direct contact	• Developers community
	Key resources • Database & background system		**Channels** • Platform	

Cost structure	Revenue Stream
• Platform Maintenance Costs • Platform Services Development Costs • Costs for managng community	Direct: • Advertisement • Founds and sponsorship • Donors Indirect: • Local Partners share's percentage

5.4 The Information System Strategy

This section focuses on answering the following questions:

- *What is the purpose of the system/platform*
- *Who is going to use the system/platform and what services fulfills their requirements*

I also suggest specific services that can be included in the platform for the customers and other users.

5.4.1 Purpose of the platform

The platform shares the same vision as the ICT4MPOWER Group "*To provide Qualitative, Affordable and Accessible Healthcare Services at the Point of Need*".

The focus of the Platform is the End-user through whom we reach the patient and embrace its needs. The platform and its services must be:

- *User-centred*
  - Solutions we create are based on the user's needs
  - By putting the user in the centre we also embrace the patient's needs
- *Community-driven*
  - Collaboration is our driving force
  - We believe that the best ideas are generated by a strong community
  - Services and products that are being developed in collaborations with an open source community will also be affordable to everyone. This contributes to the cost-effective business strategy
- *Flexible*
  - Adaptable to the user's need.
- *A communication channel*
  - Through which we share, we inspire, we innovate, and capture our user's needs
- *Available*: Anytime, Anywhere, Everywhere

To make this a reality rather than just a good intention it is necessary to establish what kind of services will be needed. Next sections focuses on provide guidelines for the sort of services that the Group needs to develop.

5.4.2 Identifying the community type and finding a suitable platform

According to the Literature review, I could identify four types of community platforms. After discussions and interviews I decided that this specific platform falls into the category of task- and goals-oriented community platform. Under this category we found several services that have to be included in each platform. Even though the type of community that is closest to our purposes is the design community, the platform will be used for other activities as well and several services from the transaction community and the online learning community have to be combined to satisfy the needs of the platform's customers (stakeholders).

Table 8 "ICT4MPOWER MSP's supporting services" shows the combination of services that have to be in place so that the platform can fulfill its purpose. This table is the combination of the services in figures 10, 11 and 12 presented in the literature review.

Table 8 ICT4MPOWER MSP's supporting services

Knowledge	Intention	Negotiation and Contracting	Settlement
• Product/service information from different perspectives depending on who it is created for • Learning material o Video conferences and multimedia • Links and resources	• Offer (product, learning material, design components) • Electronic product catalog • Request (resources, information and design)	• Online contracting • Management of task list • Matching of request and offers for task related to contributions • Management of accepted contributions	• Online delivery (download) • Online payment • Tools for collaborative design • Tools for consistency check • Contribution delivery • Project management tools

Community Support			
• Knowledge crated by community • Reviews of provided solutions • Evaluation of learning material • Video and multimedia	• Request for certain features of products • Request of partners		• Customer support • Customer feedback • Support communities • Discussion forums • Support for members • Q&A session

5.4.2.1 Services suggestions

In this section I present a summary of the suggestions made by the Group as a result of the second workshop performed on 8 of September 2011, with the ICT4MPOWER Group. These services can be included in the platform to be provided to the different stakeholders. The idea of making this workshop is to capture the requirements of the stakeholders/users of the system. Remember that taking in consideration their opinion raises the satisfaction level and improves the user experience.

I also recommend the Group to take a look at Launchpad. Launchpad is a software collaboration platform that provides several services that will help the Group in the management of some platform services provided to customers and developers.

5.4.2.1.1 Local Partners Services

1. How to become a partner
    1.1. Benefits and requirements
2. A partners portal
3. Access to learning material and possibility to create learning material– learning material should be visual, easy and short. Learning material can be:
    3.1. About how ICT4MPOWER manages and coordinates projects (making visible how we work).
    3.2. About how to contribute.
    3.3. Guidelines on how to market applications and services to local end-users.
    3.4. Installation scripts/guidelines.
    3.5. How to customize particular applications – learning material about common customization or repeated customization.
4. Local partners can be End-users – this is giving the partners the possibility to try out the software and learn it as an end-user. This can be realized by giving out free trials, it is also a step to support.
5. Leaving feedback on applications or submitting new ideas – for contributing.
6. Service to contribute by making translations to local languages. Requires that all information is collected in one place so that it is easy to access.
7. Report bugs or urgent problems of customers to customer support.
8. Access to information about revenues gained from contracts that have been made through the platform, i.e. when the customer has been reached through the platform. This is for statistical purposes and for making it visual for the partners.

9. Communicate with old and new customers acquired through the platform.
10. Mailing list to notify clients about new applications or changes in old ones – This can be used for marketing purposes as well.
11. Communication with application developers – the possibility to submit projects and coordinate them through the platform. Some sort of direct collaboration with the community. This for coordinating/managing.
12. Developers can be encouraged by Local Partners to work on application (further develop) by making visible the list of developers that have contributed earlier in the development of an application.

5.4.2.1.2 ICT4MPOWER Team Services
1. Integrated CRM systems
2. Processes and scenarios diagrams, these are essential for the understanding of how activities are connected to each other and the result of them being combined. Example of a process can be the recruitment process or the incident process in case that a bigger error occurs.
3. Mailing list to notify and market new products
4. Predefined Graphical User Interface (GUI) for applications. In terms of design it can become very practical to have predefined user interfaces, this saves time and effort can be putted in other areas.
5. Statistics on end-users and developers active participation
6. Getting feedback from all MSP customers on how to improve platform. how to collect feedback:
    6.1. *Integrated feedback* is a button in every page that allows users of the specific page to submit errors that they have encountered by entering the error into a message box situated somewhere in the page. This is sent to an administrator that takes care of the problem by contacting the user that reported it.
7. Easy insertion of news related to the Groups progress, the products, new customers, etc and dissemination to the public on the Group's web page
8. Monitoring services
    8.1. Statistics on generated revenues from applications
    8.2. Statistics on loads of traffic and bandwidth
9. Monthly web lecture for interested end-users/ developers.

5.4.2.1.3 Developer services
1. Document with Community guidelines and organization
2. List of all available projects
3. Open forum for discussion, this to support the communication and the emancipation of new knowledge between the developers. The forum can be divided into:
    3.1. Development topics.
    3.2. Local forums, i.e. forums by country or language.
4. Wiki, containing all necessary information about applications and or terms used. This can be open for the developers to add and change the information that resides within it.
5. Provide application-structure material.
6. Collection of standalone, customizable applications.

7. Educate developers, designer.
8. Entertainment services for developers. This can be used for attracting them to the site and make them stay in it.
9. Open forum where customers can post a question and availability that other clients answer them
10. Communication must be secure and this must be visible by adding some special certificate or verification symbol to the page, i.e. something that proves that our site is secure.

5.4.2.1.4 End-user services

1. Customers must be able to find the application without any complication. For this I suggest:

   1.1 Making suggestions for the customers in the front page. It can be the most popular applications or the ICT4MPOWER Group's recommended applications.

   1.2 A library of all known health applications. Application should be divided into categories by disease. This will make them easier to find for new, and experienced or recurring customers that with time will return knowing what they want. Within every category there will be columns with:

   1.2.1   Top search applications for the main category

   1.2.2   Top downloads applications

2. In order to get local support and/or installation support, the local partners must be visible for the end-user. Therefore the local partners must have a place in the platform from where the customers can reach them. It is important to keep the structure of the page to make it easy for the customers to navigate. Some ideas are:

   2.1 Rule of relevance – The partners' name must be placed in order of relevance in the page i.e. the partner that is working closest to our product or are making the most contributions must be placed in first place. Example of a classifications can be, Golden, Silver and Regular partner

   2.2 There must also be an alternative to sort the partners by country; this to make it easier for the customer to find his own local partner. It is important that even in this case, we make sure to keep the first rule of relevance.
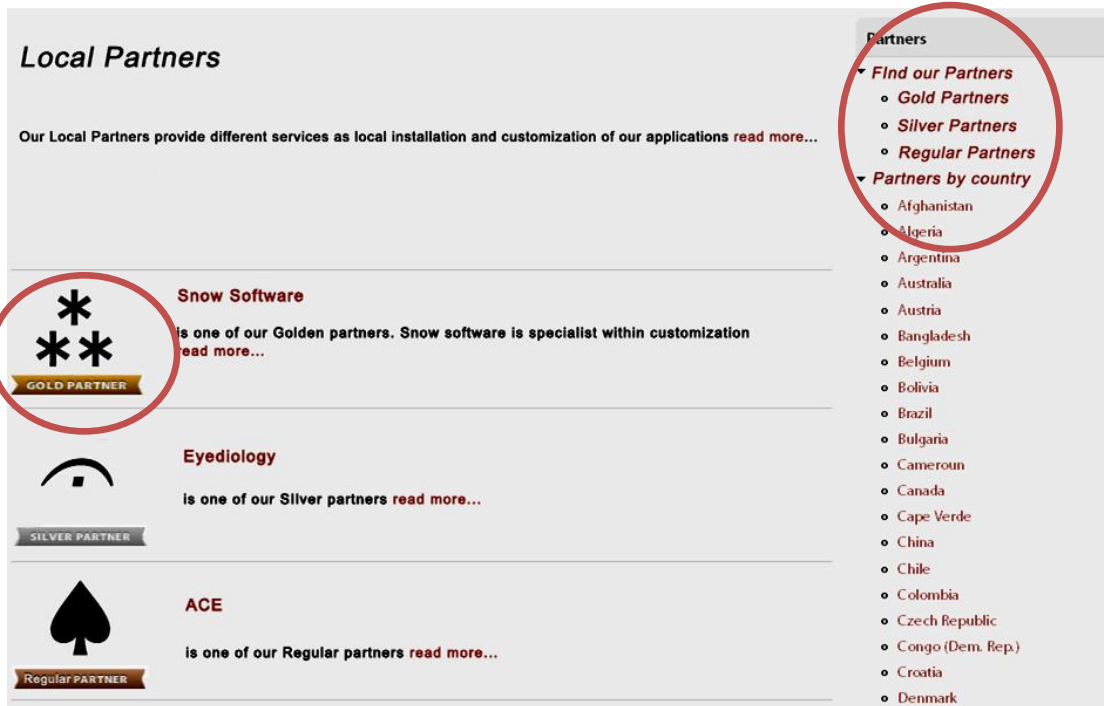
Figure 14 Local Partners sorted by relevance and/or by country

When sorted, we can use the partners' logos or name and link them to a personal site for more information about how to proceed and how to contact the specific partner.
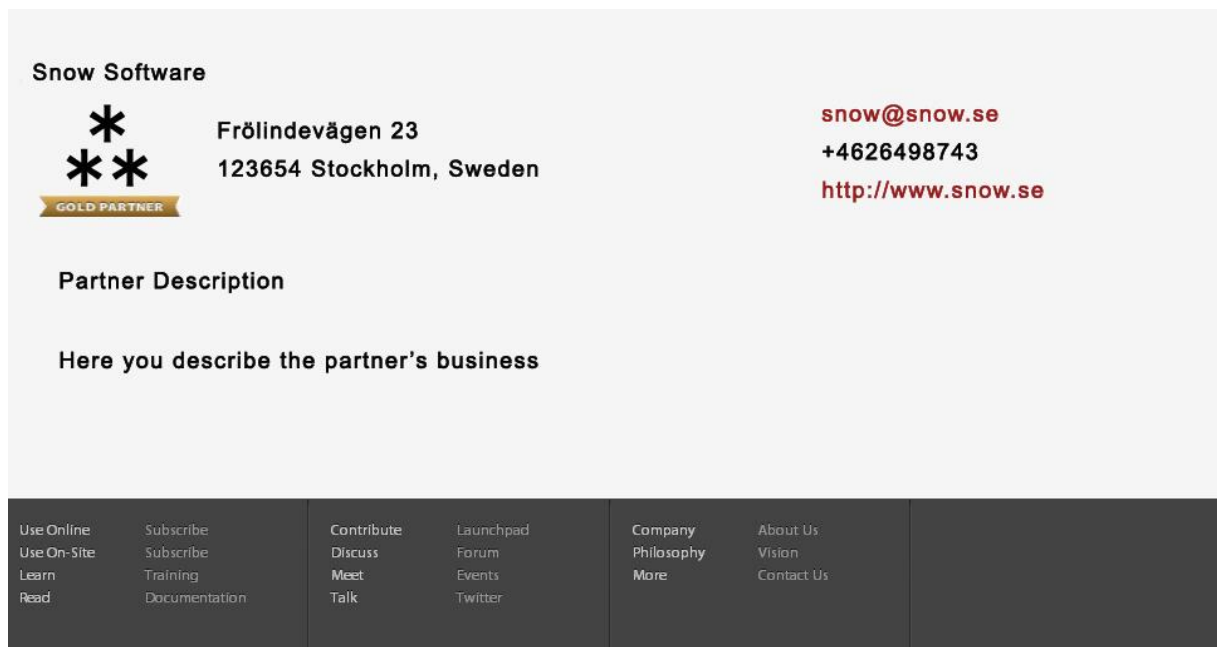
Figure 15 Local Partner's contact site

3. Secure transaction services. Communication must be secure and this must be visible by adding some special certificate or verification symbol to the page, i.e. something that proves that our site is secure.

4. Presentation material such as
   4.1 Introduction video of how to use the web page, the different functions in it and who to contact if anything does not work as expected
   4.2 The vision, mission and values of the ICT4MPOWER Group
   4.3 User's success stories
5. News site
6. Documentation such as:
   6.1 Tutorials. Functional overview of the health applications.
   6.2 Installation manuals. Step-by-step manuals with pictures or short videos.
   6.3 Developer book. Technical reference for creating your own modules.
7. Links to official Local Partners providing official training.
8. Open forum for user's questions.
9. FAQ. Frequently asked questions.
10. For giving feedback about applications:
   10.1 *Integrated feedback* is a button in every page that allows users of the specific page to submit errors that they have encountered by entering the error into a message box situated somewhere in the page. This is sent to an administrator that takes care of the problem by contacting the user that reported it.
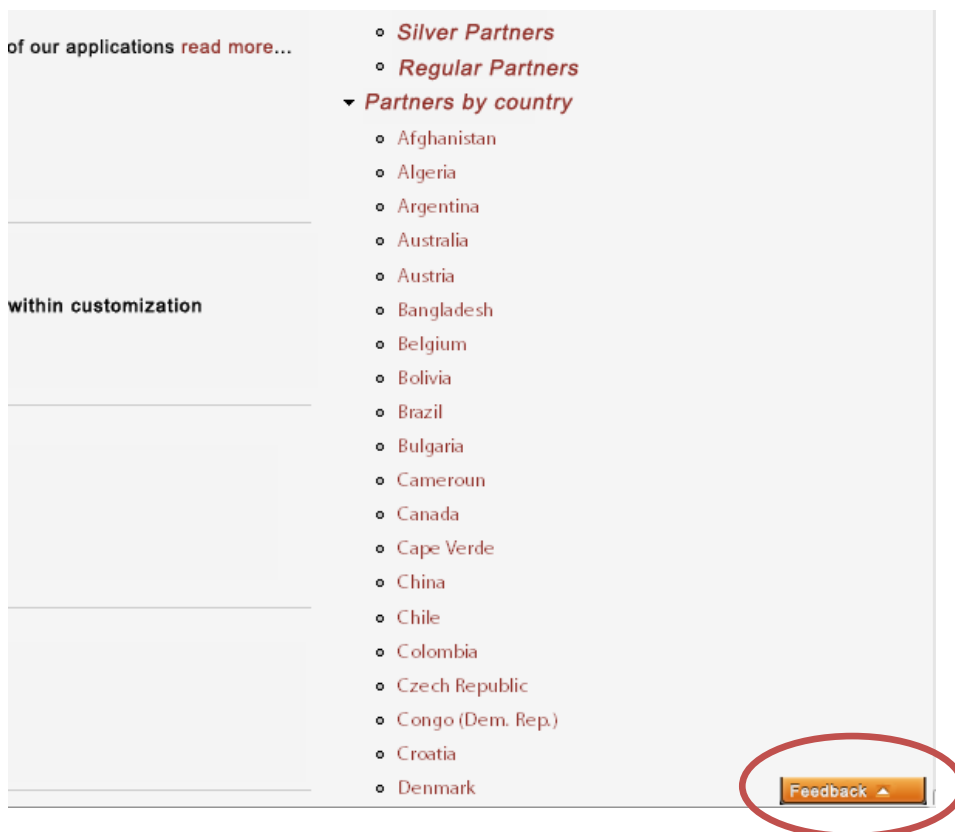
Figure 16 Integrated feedbacks 1

Figure 17 Integrated feedbacks 2
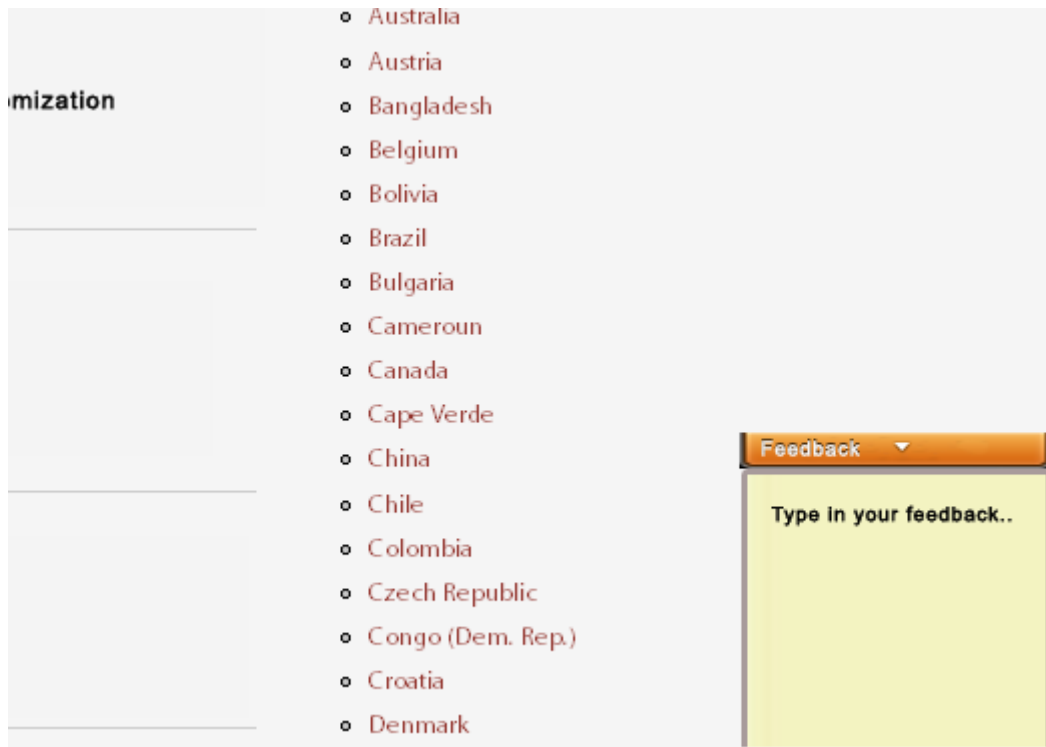
10.2 In every specific applications page there must be a link for giving suggestions about the application. There can also be a link that takes the customers directly to the applications forum (if such exists), so that they ask questions to others about the application. This can be used for the customers that are not paying for any support.
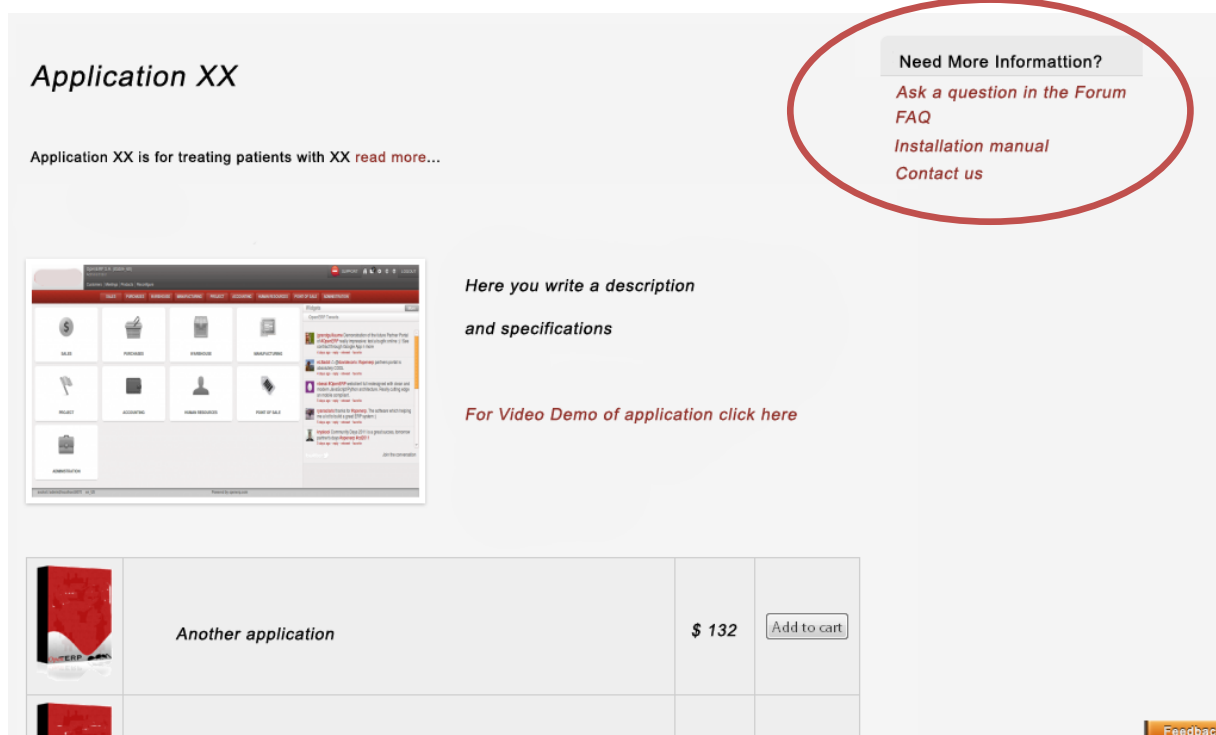

Figure 18 Suggestion for link to the forum

6. Analyses and Discussions

In this chapter I will make several analyses on the results of this work and the methods used in the case study, as well as discuss the methods mentioned in the research methodology.

6.1 Analyzing the methods

Initially many of the deliverables depended on how the Group was organized, which was the main argument used to select a flexible approach that allowed me to combine literature researching with the expectations that the ICT4MPOWER Group had with their multi-sided platform. It has been very important for me to capture the Group's intention and give it a steady foundation, by integrating in my work the experts' advices. This has resulted in a solution that, regardless it limitation, fulfills its purpose supporting the Group in a managerial aspect while starting the development of the multi-sided platform, and also a report that provides the reader with tools to develop its own strategies.

6.1.1 Analyses of the research methods and methodology

The research methodology consisted of a variation of an operational research process (ORP), and a case study-method for testing the theories found during the research process.

The ORP has several positive aspects when it comes to planning for the research and knowing what to do in the initial stages. ORP works as a guideline to that helps putting down the ideas in a structured way. The ORP is a tool that will help in structuring the work and creating a visualization of the process. This works not only as a guideline to know where to start, which can be tricky in some projects, but also as a reminder when focus is not being putted into the right places. The process not only reflects the possibility to do a literature research while defining the problem, but also the necessity of doing so which is not always obvious for the first-time-researcher.

About the case study-method used to test the solutions; it was the fundamental key to obtain results and answer the research questions. Using this method in this project not only provides experience but also proves that there is no necessity of several years of experience or special skills to develop strategies, but only a great knowledge base that can easily be acquired, a structured process of work, and the sense of matching clear ideas with best practices.

6.1.2 Analyses of the interview methods

Two methods were used to interview the Group in order to define the problem and get valuable information for this thesis.

- Online conference meetings are a deficient solution. Online conference meetings are good when discussing a previously defined topic or making a presentation of accomplished goals. Online meetings might not always be the best solution when trying to attack a problem that is not previously defined, since these meetings require planning and timing which is not always convenient if the research is depending on constant discussions. This method should be used in case of emergency as it was in this case. Otherwise I recommend to use regular meetings performed as often as possible and when needed.

- Workshops are very effective when trying to get several perspectives about a specific topic, and discussing problems around this topic with others. It is a powerful tool that can bring many new ideas into the project if it is conducted and arranged properly. When the possibility of discussing in an open way is presented, the attendants have the tendency to go outside the scope of the topic. This can be dangerous and that is why it requires strong direction of the host. Workshops require planning and also time (hours), for the realization of the workshop. I can strongly recommend this method which can be used for several purposes.

The interviews provided new ideas that were further developed into services or methods that will be used by the Group to reach the goals stated. Without the active participation of different individuals of the Group it would not have been possible to develop a realistic solution that can be applied to the day-to-day activities of the Group.

6.1.3 Analyses of strategy development models and methods
The goal when selecting the models and methods for developing the

- The SWOT analysis was used in a specific area (the MSP), to make an initial analysis of how the platform could be used. The use of this model was essential in helping me understand the capabilities and possibilities while using this platform. Even if it is a basic analysis the tool can be used for doing deeper analyses, but it is necessary to use complementary information and methods to know how to manage the information collected in through the analysis. The model is easy to use, and it requires some time to analyze the organization, that is why I recommend using it in some workshop where several persons can contribute with their perspectives or in direct discussion and collaboration with the manager, as I did.
- The business model canvas is a powerful tool that I used to define in more detail how to interact with different segments. The business model canvas utilized, helped me to capture and define how the Group needs to interact with the platforms customers and what is being required from them in order to sustain the value proposition. Using this visualization gave also the opportunity to the project manager to better understand the connection between the areas presented in the model which allowed us to interact and to come up with a value proposition that is distinctive. The fact that it sometimes became difficult to understand some of the areas in the canvas does not always mean that the model is bad, instead it led me to start questioning each area and how the goals were going to be reached by the group this resulted in a better understanding and definition of the Group's segments. As mentioned the visualization provides a great overview that helps in connecting ideas with goals by providing a better understanding through the visualization of different segments.
- The strategic management plan for the development of the organizational strategy was the easiest model to use because it is easy to make definitions when you have a clear path with headings. The model is clear in pointing out important concepts that needs to be defined. It provides an understanding of the important aspects that many organizations have the tendency to not take in consideration.

- About the model for development of the information system strategy I can say that it is more about trying to take in consideration all the sides that are in contact with the technology, i.e. the business side, including economics, costs, goals, etc., and the organizational side, i.e. the systems users (including customers), and in which extent the system can be used in organizational matter. The model alone does not provide any information but the questions mentioned in the model guided me to find the material that provides the information that is necessary for the development of the strategy and the definition of the platforms services.

7. Conclusions

This work has resulted in a guide for how to develop strategies, by the formulation of three types of strategies for the ICT4MPOWER Group; the business strategy, the organizational strategy and the information system strategy.

Even if the strategies are formulated for this specific case, the methods used to develop these strategies can be used by anyone as used during this project and showed through this report.

My researches show from the beginning the necessity of a mission and vision statement that can guide the person that is responsible for the formulation of the strategies in the present and future work. I also capture the importance of having specific goals and how these can be organized. The journey reveals the importance of having activities that are consistent with the goals and it also reflects the purpose of making a mission and vision statement. The success of an enterprise is defined by its vision and reflected in the day to day activities.

All strategies require great access to information and the capability to manage this information in the right way. Through the models and methods this has been possible and resulted in strategies providing guidance from three different perspectives. 1) The organizational strategy – provides guidance respecting the managerial aspects, including methods for developing a defined culture within the organization. This will vary depending on how managers and coworkers collaborate with each other 2) The business strategy – provides a clear directive on how to support the overall goals and which approach to adopt to be profitable and the value propositions that satisfies every segment within an organization. 3) The information system strategy – provides information about the importance of putting the users in the center and reaching a satisfaction level. This strategy is mostly about balancing organizational aspects with business.

8. Future work

Since this project was so limited in time some aspects were excluded. These are important and that is why they are included as recommendations below.

- Follow up tools: Set measurable goals and transform the strategy into action – for doing this I recommend using the model and methods for creating a balanced scorecard, setting KPI's, and creating activities that lead to reach these KPI's. For more information see "*The balanced scorecard: translating strategy into action"* in the Further reading section.

Other recommendations:

1. Investigate the dynamics of the market and possible competitors. At this time no competitor was found since the Group has created a product that differentiates itself from others in the market within a field that nobody else is working in (in such a specific way as the Group is doing).
2. Analyze the impact of the sales through the web on the business and if it is more profitable to focus on doing business through the Local Partners.
3. Create consistent processes and process models to support the different areas and activities that have to be performed. (These are stated in the "Roles within the MSP"-section).
4. Define a recruitment process.
5. Investigate which CRM system is the most appropriate to use.
6. Explore what technology is the most appropriate to support the communities. Investigate the possibilities of using Launchpad as mentioned in the "Community services"-section.
7. Investigate legal aspects.
8. Define the rules of forums and for being part of the community of developers.

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Appendix

Appendix A

Acronyms used in the document.

Table 1, Acronyms

Acronym	Description
BS	Business Strategy
CRM	Customer Relationship Management
CSP	Community Supporting Platform
GUI	Graphical User Interface
HA	Health Application
HAP	Health Application Provider
HAU	Health Application User
IS	Information System
ISS	Information System Strategy
KPI	Key Performance Indicator
MSP	Multi-sided Platform
OC	Online Community
ORP	Operational Research Process
OS	Organizational Strategy
OSS	Open Source Software

Appendix B

Workshop summaries

Workshop nr.1 performed on July 7 of 2011

Some explanations

The community
 5 stakeholders are identified as part of the community:
     1) ICT4MPOWER Team will
         1.   maintain the platform,
         2.   develop services for the platform and,
         3.   market it externally
     2) Community of developers will
         1.   be engaged and empowered to design, develop and market healthcare applications, which brings customer value and solves a particular problem (social entrepreneurs)
     3) Community of healthcare end-users, who can be health organizations, patients or other organizations working to improve patients health outcomes
     4) Local partners, who are companies offering consultancy services to adjust some of the applications to the healthcare end-users particular needs. They also offer consultancy services to implement locally ICT4MPOWER platform and the applications
 	
 Purpose of the platform
 The platform will be a central hub through which each stakeholder will further access different **services** to perform their job.
 	
 Goal of the thesis work
 The goal of thesis work is to work out business strategy, organizational strategy and based on that come up with Information Systems Strategy. ISS should include necessary **functions and services** that must be in the platform in order to support OS and BS of involved stakeholders

In order to create a good platform, what do you think is essential, from following points of view:

1. **ICT4MPOWER Team view**
   1.1. To maintain the platform
   1.2. To develop services for the platform
   1.3. To market it externally:

Answers

- end-user feedback about needs, i.e. services needed by end-user
- understand developers needs
- open discussion forum
- To be involved with the community
- Collaboration with external partners-develop platform with them,
- Publication options for example via social networking.
- Find target group.

2. **Community of developers view,**
   2.1. It should be easy to solve problems. Get to know what is needed
   2.2. To feel engaged and empowered to design:
       2.2.1. Documentation and tutorials, ways to get in contact with end-user, end-user involvement.
   2.3. To feel engaged and empowered to develop and market:
       2.3.1. Documentation and tutorials, programmers, access to legal considerations, support

2.4. To feel engaged and empowered to market healthcare applications:
    2.4.1. view of applications, <u>easy & funny to use</u>, reputation system (to filter), ranking,
2.5. Reward system for being active in the community
2.6. flat communication with everyone

3. **End-users view**
    3.1. express ideas, requirements, problems, feedback-box, simple view easy to access,
4. Local partners view
    4.1. end user feedback, and possibilities to communicate with dev and empower team, quick communication with team, guides, access to code,
    4.2. software & hardware requirements (from end-user and) platform

What role does the communication play?

Most important role! Without communication we will not survive, so:

1) How do we communicate in an effective way between different stakeholders?
2) What kind of information do we need from each other?
3) Do we need information from everyone in order to make our contribution/job?
4) Should there be any integration in different stakeholders' work? How? In which way is it beneficial? Yes, see how/what others do to develop your own product.
5) How do we tackle the lack of coordination? Isolate processes, application should be able to stand on their own, independent from platform, stakeholders, should not affect others, advertisement for ideas, developers meeting/ conferences for developers, platform should offer coordination possibilities,

Appendix C

The free thinking sheet is a brainstorming I performed with Rustam Nabiev around what we believed about the MSP.

What do we see when we look at the platform?

- A channel through which we reach and capture the patients needs
- A platform providing several services (will come up with soon) to the five stakeholders
- A platform providing freemium (free) and premium (free-based) health applications to HA users directly in the platform
- Personalized Customer Support Service (may be fee based)
- Service to book face-to-face training for specific HA to the HA users
- A platform providing education (video demo) on HA to the HA users
- A platform providing success stories from HA users
- A platform providing individual channel for showcasing each HA, like in YouTube
- A community of HA-providers and HA-users
- Communication Channel between the five stakeholders
- People sharing experiences and best practices

Table 9 The MSP from different points of view

From Health Application Provider PoW:	From Local Partners PoW:
- An opportunity to contribute to contribute to a better healthcare - An opportunity to earn money on developed HA - An opportunity to grow as a programmer - Opportunity to get more experience - Opportunity to share knowledge - Opportunity to access knowledge	- Opportunity for business - Communication channel with HAP, HAU and ICT4MPOWER Team - Access to code and guidelines - Communication channel with HAP and ICT4MPOWER Team - Opportunity to get best practices Access to system requirements and guidelines

From Health Application User (HAU) PoW:	From ICT4MPOWER Team PoW:
• Innovative HA to improve health service delivery to patients • Freemium and premium HA to choose from and be subscribed • No hardware or software installation necessary, everything is stored in the cloud • Opportunity to make their voices heard • Opportunity to share knowledge, experiences and best practices • Opportunity to learn from others • Opportunity to communicate with others • Opportunity to make contacts • Opportunity to contribute to a better healthcare • Opportunity to get needs satisfied	• Resources/different groups – there must be systematic way to manage the community of HAP and HAU in a cost-efficient way • Ideas • Potential products • Important information about real states.

Appendix D

Heads of Project Organization

Role	Name	e-mail	Phone number
Scientific adviser	Ilia Bider	ilia@ibissoft.se	+46709 427 838
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