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AN INFORMATION SYSTEMS RESOURCE CENTER
FOR LOCAL GOVERNMENTS

A Report by the
Urban Information Systems Inter-Agency Committee
(USAC) Support Panel
of the
Committee on Telecommunications
Assembly of Engineering
National Research Council
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The project that is the subject of this report was approved by the Governing Board of the National Research Council, whose members are drawn from the Councils of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The members of the committee responsible for the report were chosen for their special competences and with regard for appropriate balance.

This report has been reviewed by a group other than the authors according to procedures approved by a Report Review Committee consisting of members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

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PREFACE

In its June 1976 report, "Local Government Information Systems-- A Study of USAC and the Future Application of Computer Technology", the USAC Support Panel recommended the establishment of a non-profit information systems resource center where municipal, county, and state administrators could receive reliable help for the application of computers to government operations. The Department of Housing and Urban Development (HUD), which sponsored the panel's study, requested the panel to elaborate on the idea for such an information center. This study is the panel's response to the HUD supplementary request.

IN MEMORIAM

Chairman Richard P. Gifford of the USAC Support Panel died on August 28, 1976, after the Panel had completed writing this report. As the Panel's guiding force, he steered the Panel's efforts toward realistic goals. In him was combined a rare blend of practicality and idealism. His friends and co-workers on the Panel will miss his clear, wide-ranging mind, his enthusiasm, and his resourceful quest for the best solutions to complex problems.

I. Introduction

The Urban Information Systems Inter-Agency Committee (USAC) Support Panel was organized under the Committee on Telecommunications of the National Research Council in June 1974 to assess the multi-agency USAC Program, which sought to expand and improve the use of computer technology in the management and operation of local government. In its final report, issued in June 1976, the panel recommended that an information systems resource center be established to assist local governments in the use of computer systems.*

During its study, the panel found that while the use of computers is fairly widespread among local governments, the potentialities of computer technology are not being exploited, for the most part, to the best advantage. The reasons include the lack of skilled personnel, the complexity of relating computer systems to the variety of local services, and the lack of involvement by top-level management in the development of computer systems.

The panel also discovered indications that the situation is changing. Local officials are being forced to turn to computer technology to achieve greater productivity in order to meet the higher costs of labor intensive operations, to respond to the increasing demand for local services, and to provide for better management of scarce resources. Moreover, proven applications of computer technology are becoming more numerous and well known.

The USAC Program, for example, stimulated interest among local governments in the use of computers and contributed to a better understanding of how government operations could be improved through their application. Concurrently, local governments, on their own initiative, and often with some federal assistance, have independently developed computer-assisted management techniques and programs. In addition, more computer programs and products aimed specifically at the local government market are being made available by industry.

*National Research Council (1976) Local Government Information Systems--A Study of USAC and the Future Application of Computer Technology. A Report of the USAC Support Panel, Committee on Telecommunications, Assembly of Engineering. Washington, D.C.: National Academy of Sciences.

Information about these developments, however, is not being accumulated in a systematic way that would make the experience clearly and readily available to local officials. Thus, local governments, many of which do not have the internal technical capability to benefit from the use of technology, are not always sure of how to get this information. In recommending the establishment of an information systems resource center, the panel asserted that the center's principal function would be to provide information to local governments regarding the alternatives available.

II. Objectives of the Information Systems Resource Center

The panel recommends that the proposed information systems resource center would have two broad objectives:

1. To offer assistance to local officials in cities, counties, and regional governments, and their constituent agencies in the effective uses and applications of information technology in the management, administration, and delivery of public services.

2. To keep local governments informed about public policy issues associated with, or related to, the use of information systems.

In supporting these generalized objectives, the panel recommends as guidelines for its management and operation that the center should be:

- o Controlled by local government interests to assure that it is responsive to the needs of local officials;

- o Directed by a fairly representative board, with an active role in establishing policies, programs, and priorities for the center;

- o Initiated with a modest program to avoid building false expectations of the services it can deliver on a national scale;

- o Organized to gather facts about computer systems for those local governments that want such information in an unbiased, non-commercial, coherent way. The center should not attempt to force its services on local governments.

- o Able to provide, through communication and training, the knowledge that is being gained in adapting computers to local government uses. The center should monitor developments within private industry, as well as federal and local programs that advance the uses of computer technology. The center should not compete with private enterprise in the development of software products.

- o Financed initially by the federal government, but it should achieve self-sufficiency by the end of five years. It should receive

financial support from all federal agencies which have programs related to local government information systems.

III. Board of Directors

The information systems resource center should be guided and controlled by a board of directors whose members need to have:

- * Awareness of the problems and opportunities of local government.
- * Experience in the uses and limitations of information systems.
- * Familiarity with the varieties and complexities among local governments as to the availability of funds and skilled personnel, legal and political constraints, and population served.

The principal functions of the proposed board of directors would be to:

- (1) Provide policy guidance and establish program priorities.
- (2) Select the top administrator of the center.
- (3) Approve a program and strategy designed to implement policy and program initiatives.
- (4) Monitor the implementation of program plans and periodically evaluate their effectiveness.
- (5) Update program operations and priorities, as required.

The Challenge for the Board

The role of the board of directors in the operation of the center is of critical importance. The center will need strong, knowledgeable guidance and leadership to succeed in a wide-ranging and complex task.

Making the choices and setting the priorities among the many possible activities will be particularly challenging. The panel considered at length whether to recommend specific goals and priorities in an attempt to prevent the center from becoming overextended in its early program activities. The panel ultimately rejected that approach. It chose instead to place the responsibility for specific program development on the center's board of directors. To do otherwise, the panel reasoned, might unduly constrain the board and distort its vision for its most significant early contribution. (Some priorities for potential programs are discussed further in Section V.)

Structuring the Board

The board of directors of the resource center should be established in two phases. To obtain a board that best reflects knowledge and understanding of information systems at the local government level, it is recommended that local government public interest groups be requested to select a majority of the members of the initial board. The board would serve for a limited period--perhaps two years or less. During that time, the board would develop and adopt by-laws to provide for the independent selection of board members in a subsequent phase.

The panel suggests that the public interest groups select board members with the necessary knowledge and demonstrated interest in information systems. This board should be comprised mainly of state, county, and city officials. Ultimately these governments will have the responsibility of financing the operation of the center. Indeed, they should have control of it. Moreover, such officials are in the best position to set policies for the type of services that are needed in their communities.

The interests of the federal government should be served through contract or grant arrangements with the center and not through membership on the board. Such arrangements will permit the center to be an independent organization serving local governments.

The size of the board should be balanced so that it is small enough for debate and discussion, yet large enough to include both the various interests within local governments and persons with technical skills. Therefore, the panel suggests a board of approximately 15 members, at least three of whom would possess technical expertise. Approximately half of the other board members should represent municipal government and the others should be distributed evenly among representatives from county and state governments and the academic community. Recommendations for the appointment of the municipal government members should be sought from such organizations as the National League of Cities, the U. S. Conference of Mayors, and the International City Management Association. State and county representatives should be recommended by similarly appropriate national groups, such as the Council of State Governments and the National Association of Counties. Such organizations as the Municipal Finance Officers Association, the Government Management Information Sciences, and the Urban and Regional Information Systems Association would be appropriate sources of recommendation for members of the board requiring technical expertise. Once appointed, the members of the board should elect the additional academic members.

In addition, the panel suggests that private industry be represented on the board through non-voting associate memberships. The appointments of representatives of the computer manufacturing and software design community should be made by the full board, but not until after the board has completed its basic organizational planning and the director has been selected.

The geographic location of the center should be determined by the board.

As guidance to the board, the panel has developed proposed operating principles which it believes will assist the board to establish its policies and priorities. These operating principles reflect the panel's concern that the board must exercise caution and restraint to avoid establishing programs that will extend the center beyond its capability to perform responsively. The panel considers the development of a realistic, achievable, and responsive program to be the greatest challenge the board will face.

IV. Operating Principles

The center can use its resources most effectively by monitoring the growth and development in the applications of information systems to the operational and management needs of local officials.

This role for the center, the panel believes, is a logical extension of the USAC effort. USAC successfully encouraged the development of innovative information systems. It and similar programs have successfully expanded the variety of computer products and services available to local governments. New developmental initiatives, although still desirable, are not the primary need of local officials. What is lacking now, in the judgment of the panel, is a means by which existing effective practices can be made readily available to local officials who can use them. Thus, the center should be a focal point for the collection and dissemination of information about the application of computer technology to local governments.

To effectively assist local governments with information technology and to keep local officials abreast of related public policy issues, the panel recommends the following operating principles for the resource center:

1. Primarily, the center should gather and make available facts and analyses about the uses of information system technology in local government. The center should monitor public and private developments related to computer techniques and products applicable to local government needs. The center should make such information available through publications and seminars and in response to inquiries from local officials. The center might detail the range of applications available, whether they are documented and considered transferable, the type of hardware and software used, cost implications, personnel requirements, and the length of time the application has been in use.

2. The center should not develop new products, such as the packaging of software products for sale to local governments, even though they might assist the center to become self-supporting. The panel believes that independent development would divert the center's resources toward areas already served by private firms and would detract from the objectivity necessary to serve local government. The panel recognizes, however, that the center may at some time identify a particular product or service need that is not being met. If such a condition arises, the center should state the need or problem and

encourage industry and/or government to respond.

3. The transfer of information system technology from one local government to another is a promising means for governments to implement systems at low cost and without repeating needless mistakes. Some transfers of system components have been successfully achieved, and, at the same time demonstrated that much needs to be learned about the most effective way to accomplish a transfer. Moreover, most transfers have occurred among local governments with extensive experience in data processing, which suggests that transfer is not a technique that is readily usable at present by many local governments. Therefore, the center should encourage and facilitate the transfer of information technology among local governments and monitor that process to obtain a better understanding of the best methods for achieving transfer. The center should not become directly involved in the transfer process, such as by serving as a technical consultant, although it might identify sources for such support. The center should collaborate closely with consulting firms, businesses, and other organizations engaged in technology transfer to seek their cooperation in developing a broader base of knowledge about the transfer process.

4. In considering the number of staff required for the center, the panel reviewed two approaches. The first called for a small staff of two or three professionals, with most of the work performed through contracts with other organizations. This approach was rejected because the center would not develop a clear identity with local officials if most of its work was carried out by others. The panel decided, instead, to recommend that the center gradually acquire a staff of 10 to 15 highly qualified professionals. The qualifications which should be required of prospective staff members, in order of priority, are:

- (1) Management capability and experience with data processing systems.
- (2) Knowledge of urban problems and critical issues facing local government.
- (3) Knowledge of the computer hardware and software industry.
- (4) Analytical capability in data processing.
- (5) Technical capability in the operation of computers.

5. The center should avoid duplicating services that already are being performed by others. The education and training function is an example. The center can help managers recognize the need to train themselves, their associates, and subordinates. The center may also identify sources of training, but it should not acquire a training staff and facilities of its own. Rather, it should rely on existing education and training organizations to provide such services that are

consistent with its program objectives and priorities. The center's program also is likely to include presentations for elected and appointed officials. Many of these officials are members of national organizations which could be utilized to plan and conduct such meetings.

6. The center should plan to become self-supporting within five years. The panel found that potential federal sponsors of the resource center were not willing to make long-term financial commitments. The panel believes, too, that local officials should regard the center as a local government institution and be willing to support it financially through some type of plan in which members would be entitled to basic services and publications. Fees could be charged for attendance at meetings and seminars sponsored by the center. Financial support beyond dues and fees may become available for performing studies in conjunction with the center's program. The center should not bid on proposed federal contracts, however, as a method to obtain financial assistance. Such activities can distort priorities and siphon off the resources that should be devoted to serving local governments. In short, the center should not exist beyond the value placed on its services by those whom it is meant to serve. While it will need "seed" funding from the federal government to demonstrate its potential, the center should develop its plan upon the premise that such funding will end after a certain fixed time.

V. Program Priorities

The following are the recommended program elements for the center, in order of importance:

Priority 1 - Monitor the use of information system technology in local governments and gather information about new products and applications, new techniques, and other advances in the use of such technology.

The center staff should identify those local governments of all sizes which are at the forefront in utilizing information system technology. A close working relationship should be developed with officials in those governments in order for the center to keep abreast of the experience being gained and to learn the advantages and disadvantages of particular approaches. The panel believes that officials in these governments will be a valuable source of information to the center.

Particular attention will need to be directed toward maintaining liaison with the manufacturers of hardware and the designers of software products. The center should characterize the range of products that are available, explain what the products are designed to do, and list the localities that are using them. It should not attempt to rate competitive products and services.

By working closely with product manufacturers, the center will provide a focal point for industry to obtain information regarding

the type of products and services local governments need. Such information is not generally available at the present time.

The center should also monitor existing as well as new federal initiatives aimed at improving information systems. Such data, while available in the sponsoring agency, is often poorly disseminated among the agencies. Thus, local officials are either unaware that assistance is available or become confused about the nature of the financial resources that may be available.

Priority 2 - The center should disseminate knowledge about information systems to interested local governments.

The mechanisms for making this information available need to be determined by the board of directors in its program planning. Two points deserve emphasis: One, the center, through its contacts with local officials, should be aware of the needs at the local level. Such needs will vary among local governments, depending on the size of population, functions to be carried out, skills in data processing, and other similar considerations.

Second, the dissemination program should be as comprehensive as possible. If, for example, publications are produced to deal with specific topics, they should be an integral part of seminars or training sessions that are presented on the same or related subjects. In other words, a specific plan for information dissemination should be developed after careful study and should be implemented in accordance with a specific plan of action.

Priority 3 - The center should offer counseling and limited technical assistance to local governments.

This priority has the same purpose as Priority 2, but is to be carried out on a more selective basis. The panel believes that in many instances the information made available to local officials may raise additional questions or trigger the need for more detailed information on a specific subject. To the extent possible, the center staff should provide such assistance, identifying existing systems that may be viewed in operation, discussing alternatives with various officials who are, or will be, involved with the information system, identifying sources of direct technical assistance that may be used, and offering advice in response to immediate needs. The center should not become involved in direct technical assistance, nor should the counseling and technical assistance role be allowed to adversely affect the carrying out of the first two priorities.

Priority 4 - The center should conduct research to ascertain the future needs of local officials in the uses of information system technology.

The center staff should analyze thoroughly the changing needs of local officials and the technological developments that seem likely to meet those needs. The panel recognizes that this function may have to wait until the center's operation is well under way. Nonetheless, the center should keep this task in mind in order to formulate a plan

to provide such information.

In conjunction with this research effort and as resources are available, the center can identify ways in which local governments may develop standards which will facilitate the use of information system applications. Standardization is a complex problem because of the variety of traditions, laws, and practices that exist in local governments. Nonetheless, the panel believes that the center can begin to focus attention on the advantages of standardization, at least in certain basic functions, which would simplify the exchange of information technology among local governments.

Priority 5 - The center should consider the impact of new information system technology.

The panel found in its study of the USAC Program that refinements in the application of technology, particularly in the development of software, are occurring at a fast pace. Therefore, local officials need to be kept aware of the promising developments in the field and need to obtain an objective assessment of what those developments may mean in terms of future applications of technology. In addition to the more complex and comprehensive software packages, the development of minicomputers and microprocessors may have a significant impact on the handling of data in the near future. To carry out this function, the center staff should cooperate with the private sector--the manufacturers of computers and the developers of software--in order to keep local officials advised of coming technological developments in terms of their impact on the organization, procedures, and management of government services.

