SURVEY ON INFORMATION TECHNOLOGY (IT) PLANNING AND IMPLEMENTATION ISSUES DATABASE

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INTRODUCTION

As stage of this study involved the creation of an IT issues database, which can be found in appendix three. This database was crafted over the course of a year and a half; the base of its design drew upon a series of interviews which consisted of government executives from Federal, State, and Local agencies, available literature, and an extensive analysis of discussions on the World Wide Web. The initial categorizations for the issues were derived from a review of the literature pertaining to a number of areas crucial to information technology management, including but not limited to following: general management theory, management of information systems, information systems theory, strategic planning, and systems design. The original categorization system was structured around seven issue areas based on interview responses and the initial literature review, ethics and legal issues, architecture—hardware, architecture—software, government records, management issues, personnel issues, and value issues. For the purposes of this study, the database was modified and expanded to make the information contained more understandable and useable as a future resource for IT issues Material and method. Contributors to the database were asked to give a general categorization to the issue and then to describe it more completely. The responses ranged from very specific, technical issues to broader and less well defined ones like "organizational culture."

Response to this database was very good and over 240 issues were entered into the original database. For the purpose of this study a content analysis of the database was performed, duplicate entries were removed, and non-IT related issues were deleted. The database currently stands at over 170 separate IT related issues.113 one of the most important findings from the analysis of the data contained in this database was the formulation of a breakdown of IT issue types. These were then used as a primary categorization tool.114 Sub-categories were derived from the separate IT development and deployment process issues used in this study. (See table 4.1 above for category and issue breakdowns.) The complete database can be found in Appendix 3.

Survey Respondents

As, 132 SMLG executives were surveyed for their response to a series of IT planning and implementation questions. Of those polled 35 were city113 The IT issues database was designed to

be an ongoing project and as such is available for updates on-line and on disk. As such the actual number of issues and their content may vary from the description provided here. 114 The IT issue types derived from this study came from a combination of content analysis of the Issues Database, the literature review, and the open ended interviews conducted in stage two of the study. Managers, 81 were county administrators, and 16 were town managers. Out of the 132 surveyed 58 responded, a 44% return rate. The respondents were made up of a mix of city, town, and county managers and administrators, as shown in Table 4.2. Figure

4.1 provide a breakout of the percent representation of all of the respondents and their municipal affiliation.

Table 1 Respondent Breakdown

Respondent Type	Total Surveyed	Percent of Total Surveyed	Total Respondents	Percent of Total Surveyed	Percent of Total Respondents
Town Managers	16	12%	11	69%	19%
City Managers	35	27%	13	37%	22%
County Administrators	81	61%	34	42%	59%
Total	132	100%	58	144%	100%

As shown in table 1, this survey achieved a 44% return rate. This rate of response is not particularly high however, due to a number of significant factors, it is an acceptable return. As previously discussed in chapter 3, this survey was designed to determine individual perceptions of IT related issues. This type of inquiry requires quite a bit of thought on the part of those responding; significantly increasing the time and effort required completing the questionnaire. In addition, the study targeted executives who typically have less time and inclination for surveys that may or may not impact their organization directly. Finally, a number of those surveyed may not have had the expertise level necessary to even address the questions being asked.

Analysis of General IT Data

A number of the questions which the SMLG executives were asked for a response to were designed specifically to determine important background information about the information technologies available at the municipality and to ascertain some of the more important situations which might shed some light on the issues being discussed.

Organizational IT Usage and In-House MIS Department

The first of the background questions dealt with what kinds of information technologies each organization used (represented in table 2 and figure 1). This information is very useful in

determining at what IT levels the organization is operating at. All of the respondents reported the use of microcomputers in their municipalities, 38 had some form of LAN or WAN, 10 made use of distributed systems, 3 had decision support systems, 38 used GIS or GPS technologies, 26 used some form of cellular technologies, 9 operated an intranet, 29 used mainframes or minicomputers, 43 made use of the internet or email, 35 had some scanner or OCR capability, only 5 had access to in-house CD recorders, and none of the respondents reported making use of any kind of expert systems.

Table 2

Town Manager:	12%
City Manage County	27%
Administrat	61%

Table 3 IT Usage Breakdown

IT Usage Breakdown	I T Respondents	Using IT Percent
Micro-Computers	5 8	100%
LANs and/or WANs 3 8 66%	LANs and/or WANs 3 8 66%	LANs and /or WANs 3 8 66%
Decision Support Systems	3	5%
Distributed Systems	1 0	17%
GIS and /or GPS	3 8	66%
Cellular Technologies	2 6	45%
Intranet	9	16%
Mainframes	2 9	50%
Internet and Email	4 3	74%
Scanners OCR	3 5	60%
Expert Systems	0	0%
CDR	5	9%

While this is certainly not a complete listing of the possible IT's which could be used in any municipality, it does provide a comprehensive view of the kinds of standard IT's which are being used today in organizations of all sizes. In addition to providing General IT usage information, each respondent was asked whether or not their organization had an in-house MIS, IT, or data processing department. Only 27 of the 58 (47%) had a department formalized around the management of information technologies. This data is not surprising considering that only 47 (35%) of the total respondent group of 58 listed any IT professionals on staff. The low numbers reflected here might be due, in part, to the size and scope of the municipalities surveyed for the study. In-house MIS departments are expensive from a variety of perspectives—not the least of which are simple staffing costs. Aside from the obvious expense are factors surrounding expertise levels and the technological needs base of the locality.

Recommendations and Interrelations

Strategic planning for IT is an important key to the effectiveness of the whole implementation process. Local governments, which do not make use of a strategic plan for IT, run the risk of investing in technologies, which, may not prove to be viable in the long term. In addition lack of a plan might foster other problematic issues. Failure to engage in a formal planning process for ITs may ignore many of the factors which could enhance or hinder IT implementation. Interdepartmental coordination may be ignored, resulting in multiple standards, poor integration of systems, duplication of effort and resources, as well as a failure to meet individual and organizational needs. When strategic planning is used, system purchases may be planned over time and advanced planning for costs may facilitate investments which support the eventual goals of the municipality. Planning can also enhance the technological infrastructure through needs assessment and support of IT goals throughout the organization. Strategic planning is critical to the effective design and implementation of information technologies within an organization. While it may seem to be a fundamental concept, "the potential for miss-assignment of tasks between people and ITs in poorly designed systems may be at the bottom of much of the dissatisfaction with IT when viewed from most perspectives within an organization."119 In a large percentage of the market, technologies are described in oversimplified terms with regard to the complexities of implementing ITs. Consequently, the need for careful analysis and planning of IT is underemphasized. Often individuals without a high level of expertise in this area are left with the impression that the effective use of IT is as simple as turning on a light.

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