Chapter XIII
Information Technology Among U.S. Local Governments

Donald F. Norris
University of Maryland, Baltimore County, USA

INTRODUCTION

The purpose of this chapter is to provide an overview of the adoption, uses, and impacts of information technology (IT), including electronic government, among local governments in the United States[1]. In the 1950s, these governments began to adopt IT for a variety of purposes and functions, and they continue to do so today. Since at least the mid 1970s, a small, but prolific group of scholars has conducted a large body of research on various aspects of IT and local government.[2] It is from that research and my own studies into this subject that I have based this chapter (regarding e-government, see also, Norris, 2006).

Given the constraint of space, this chapter can only highlight aspects of this important topic. Readers who wish to delve more deeply into the subject of information technology and local government may wish to avail themselves of the works found in the bibliography as well as references from other, related works which can be found through those works.

BACKGROUND

In the early days of commercially available electronic computing, essentially the 1950s and 1960s, large, expensive mainframe computers dominated the IT landscape. They were the only game in town. As a result, only large organizations with sizeable budgets could afford computers at all. In the public sector, this meant that only the largest governments (e.g., federal agencies, some state governments and their larger agencies, and large city and county governments) were computerized.

This began to change after 1965 when the Digital Equipment Corporation (DEC) developed the minicomputer. Minicomputers differed from mainframes principally in size and cost. Additionally, and unlike mainframes, they did not require large rooms, their own air power supplies and air conditioning, and round the clock technical supervision and support. Minis were also much easier to operate than mainframes, especially if they included "packaged" municipal software. (Packaged software is a type of generic

programming written for a narrow market, such as municipal government, and for targeted functions, like billing and accounting. Organizations that use packaged software do not need staffs of computer programmers.) All of this meant that smaller local governments not only could afford computers (albeit minicomputers), but they could also operate these computers to automate basic governmental functions without the staff required for mainframes.

The next major stage in local government computing began in the early to mid 1980s with the commercial introduction of the microcomputer (aka, the personal computer or the PC). PCs function exactly the same as mainframes or minicomputers (input, process, storage, output), but were and are much smaller, user friendly and less costly (even the early versions) than their larger cousins. Certainly, early PCs had a number of limitations, but by the late 1990s most of those limitations had been overcome by a combination of increased speed and power and the development and maturation of networking. Today, PC networks can and do perform functions that could only be performed by mainframes 25 years ago.

As anyone who is the least bit familiar with computers well knows, every year computers improve in terms of speed, processing, storage capacity, user friendliness and more, and do so while costs decrease (e.g., Moore's Law, Wikipedia, 2006). This trend, combined with the availability of minicomputers and then PCs and networks, helped to diffuse computer technology throughout local government in the United States.

However, the diffusion began slowly. Data from surveys conducted by the International City/County Management Association (ICMA) show that by 1975 only half of all municipal governments in the U.S. of 10,000 persons or more had computers. By 1985, this had increased to 97 percent and then to 99 percent in 1997 (ICMA, 1975, 1985,1997).

PC adoption by local governments began slowly, too, but ramped up quickly. In 1982, only 13 percent of municipalities had PCs (Norris & Webb, 1984). By 1994, this had increased to 92 percent of all cities (Norris & Kraemer, 1996).

Today, it would be fair to say that only the smallest of local governments (and probably very few of them) do not use computers of any kind. (Later in the chapter I will discuss the diffusion of e-government among U.S. local governments.)

REASONS FOR ADOPTION

Why did local governments adopt computer technology? There are at least three reasons associated with local government motivations and rationales for adopting: generic, function specific, and "Keeping up with the Joneses." In addition, adoption tends to be associated with a number of factors internal to local governments and also to local government demographic variables.

As I discovered when examining local government adoption of leading edge information technologies, these governments are interested in generalized results from information technology in areas like efficiency, economy, effectiveness, accuracy, cost savings, revenue enhancement, time saving, reducing staff, and related areas (Norris, 2003). "Although these reasons are often stated quite generally [by local officials], they nevertheless carry meaning. This is another way of saying that local governments do not adopt leading edge information technologies frivolously (p. 158)."

Of equal importance, local governments adopt information technologies to address specific issues or problems. Examples include using IT to replace personnel because of downsizing; to provide better and faster service for power restoration to utility customers; to increase revenues from a billing function; to improve the cost-effectiveness and safety of the arraignment process (remote video arraignment); and to improve computer training at lower unit cost (Norris, 2003). In other words, local officials examine extant processes or problems and decide to adopt specific information technologies to address (that is, to improve or fix) specific processes or problems.

Sometimes, local governments adopt IT because their neighbors have done so. Local officials, from top officials well down the hierarchy, are aware of what neighboring and comparable gov-

11 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/information-technology-among-local-governments/21240

Related Content

I-FGM as a Real Time Information Retrieval Tool for E-Governance
Eugent Santos Jr., Eunice E. Santos, Hien Nguyen, Long Pan, John Korahand Huadong Xia (2008).
International Journal of Electronic Government Research (pp. 14-35).
www.irma-international.org/article/fgm-real-time-information-retrieval/2043

The Use of Information and Communication Technologies for Health Service Delivery in Namibia: Perceptions, Technology Choices, and Policy Implications for Sub-Saharan Africa
Meke I. Shivuteand Blessing M. Maumbe (2010). *E-Agriculture and E-Government for Global Policy Development: Implications and Future Directions (pp. 191-206).*
www.irma-international.org/chapter/use-information-communication-technologies-health/38150

E-Government Initiatives: Review Studies on Different Countries
Mahmud Akhter Shareefand Norm Archer (2012). *E-Government Service Maturity and Development: Cultural, Organizational and Technological Perspectives (pp. 40-76).*
www.irma-international.org/chapter/government-initiatives-review-studies-different/55780

E-Government Implementation Perspective: Setting Objective and Strategy
Mahmud Akhter Shareef, Vinod Kumar, Uma Kumar, Abdul Hannan Chowdhuryand Subhas C. Misra (2010).
International Journal of Electronic Government Research (pp. 59-77).
www.irma-international.org/article/government-implementation-perspective/38964

Accessible E-Government through Universal Design
Ulrike Peter (2008). *Electronic Government: Concepts, Methodologies, Tools, and Applications (pp. 608-612).*
www.irma-international.org/chapter/accessible-government-through-universal-design/9738