Chapter VII

Leading-Edge Information Technologies and American Local Governments

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ABSTRACT

In this study, I examine the adoption, penetration and impacts of the adoption of leading-edge information technologies in American local governments. I also discuss future trends with respect to these technologies. Data for this study come from three nationwide surveys of information technology in local governments and a series of case studies in US cities about the adoption of leading-edge information technologies.

My principal findings are that American local governments have adopted a range of these technologies and can be expected to do so in coming years. This is especially true of the adoption of electronic government. Local government characteristics associated with adoption include principally local government size as measured by population. Other characteristics include type and form of government, region of the country, and metropolitan status. Additionally, local governments adopt leading-edge information technologies for both general reasons (e.g., to improve efficiency and effectiveness) and to solve specific problems (e.g., the adoption of automated fingerprint identification systems to solve crimes).

Finally, future trends can expect to see American local governments adopt more leading-edge technologies, in part because local governments believe that they produce largely positive results. These technologies will continue to penetrate local government organizations more deeply, and, thus, provide greater payoffs. Finally, as newer and more sophisticated information technologies are adopted, local governments will necessarily have to provide more integration and support for them.

INTRODUCTION

Nearly all of American local governments of any size routinely use information technology (IT) in their operations. Indeed, local governments deploy IT for a wide array of activities covering most, if not all, of the functional areas of local government—literally from accounting to zoo operations. Survey data from a decade ago found that 97 percent of all cities used computers, including: 100 percent of cities over 50,000 in population; 97 percent of those between 10,000 and 49,999, and 93 percent of those under 10,000 (Kraemer & Norris, 1994). A more recent survey of IT in local governments, this one conducted in 1997, found a similar pattern of computer adoption among US cities. Here again, 97 percent of all cities had adopted computers. This included 100 percent of cities over 50,000; 99 percent of cities between 10,000 and 49,999, and 95 percent of cities under 10,000 (Norris & Demeter, 1999). These adoption data compare with figures from a 1975 survey which found that 98 percent of cities over 100,000 used computers, as did 92 percent of those between 50,000 and 99,999, while only 42 percent of cities between 10,000 and 49,999 used computers (Kraemer & Norris, 1994).

Additionally, a large majority of local governments (over 83 percent) have established sites on the World Wide Web in order to provide information and deliver governmental services. That is, they have adopted electronic government (e-government), defined as the electronic delivery of information and services by governments 24 hours per day, 7 days per week. (Norris, Fletcher, & Holden, 2001; Holden, Norris, & Fletcher, forthcoming).

These surveys and other studies clearly show that both IT and e-government have thoroughly penetrated an entire organizational sector of the American society, local government. However, penetration tells us very little about the innovativeness and sophistication of IT and e-government applications and even less about nascent trends in IT and e-government use among local governments. Although local governments make extensive use of IT in their daily operations and most have also widely adopted e-government, these

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