Chapter IX
Computer Tools for Public-Sector Management

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ABSTRACT

Almost any public-sector task employing a computer can be accomplished more efficiently with a variety of tools rather than any single one. Basic tools include word processing, spreadsheet, statistics, and database-management programs. Beyond these, Web authoring software, presentation software, graphics, project-planning and -management software, decision analysis, and geographic information systems can be helpful depending upon the job at hand.

INTRODUCTION

The use of computer technology in government taps into three sometimes incompatible concepts: government responsiveness to the public, bureaucracy, and technocracy. The tensions between the first two have long been a staple of textbooks and scholarly work in public administration and organization theory (Blau & Meyer, 1971; Borgmann, 1988; Gullick, 1996; Rosenbloom & Kravchuk, 2002). At first, when all computers were mainframes, the technocratic perspective (rule by experts) appeared to bolster Weberian bureaucracies (Ellul, 1964; Freeman, 1974). Even today, computers are often used by bureaucrats to perform routine tasks efficiently or analysts to rationalize policy, and most of this chapter is taken up by descriptions of some of the tools available to them. However, today's computers are employed in far more ways and by many more members of all parts of government than they were a few years ago. The bureaucracy is less centralized just by virtue of the widespread access of government personnel to information and their ability to process that information.

Changes wrought by computers may go beyond bureaucratic decentralization. Eugene J. Akers (2006) speculates that government

organized along Weberian bureaucratic lines is increasingly out of step with public expectations of a transparent and responsive service-oriented government. Similarly, Carl Grafton and Anne Permaloff (2005) depict what they call Jeffersonian budgeting: understandable government budgets available on the Internet with which the news media and the public can hold public officials accountable. In addition, Christa Slaton and Jeremy Arthur (2004) describe ways to facilitate public participation in government administration using computer technology.

This chapter concerns computer applications and information technology in government other than financial accounting software, which deserves a chapter of its own. Topics covered include Web publishing, spreadsheets, statistics packages, database management, presentation software, project-planning and -management software, decision analysis, graphics for illustrations, and geographic information systems. Since most readers are likely to have substantial word-processing experience, it would be unproductive to devote much space to this topic.

A VARIETY OF TOOLS

To make the most of their time and talents, computer users in the public sector or virtually any other setting should have access to more than one tool for nearly any task that extends much beyond typing a short memo. Access to a variety of tools is usually more productive than having the latest version of a single one.

Word-Processing and Web Authoring Software

Word-processing programs are designed primarily for generating print and graphic images on paper; Web authoring programs do the same thing for the Internet. Web pages are generated using HTML (hypertext markup language) sometimes in conjunction with supplemental tools such as Java, a programming language.

When a browser such as Microsoft Explorer reads a file containing HTML code (called tags) and text, it displays the file on the computer monitor according to formatting information in the tags (e.g., whether text is centered or in bold face or whether a separate file containing a graphic image is to be merged with the text). The marketplace offers a variety of text editors primarily designed to generate text with HTML tags (see Kent, 2000, for a list). Ordinary word-processing software can do so as well, but specialized HTML editors contain more features that ease the process of Web-page creation or maintenance.

Most government agencies have adopted particular HTML editors that employees are expected to use. Government agencies often appoint individuals responsible for Web-page work partly to preserve consistency in appearance and also out of concerns for security. The majority of employees will submit text generated with an ordinary word processor along with graphic images to accompany the text to these specialists who will then convert these files into Web pages.

The authors' experience in using government Web sites suggests that they are of three basic types: marketing, informational, and interactive. Marketing sites are designed for such purposes as to attract students to universities and visitors to cities. Marketing sites usually contain photographs scanned from prints or downloaded from a digital camera together with attractively arranged text and various decorative graphics. A certain amount of taste is required to make the marketing part of a Web site attractive, and the assistance of someone with a background in art might be helpful. Peter Kent (2000) lists Web sites that collect badly designed Web sites including one called *Web Pages That Suck: Learn Good Design by Looking at Bad Design*. While the bad Web-site collections dramatize how Web designs