10

The Software Toolkit Approach for Public Administrators

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Almost any governmental task employing a computer can be accomplished more efficiently with a variety of tools rather than any single tool. Basic tools for inclusion in the software toolkit are word processing, spreadsheets, statistics, and database management programs. Beyond these, presentation graphics, optical character recognition (OCR), and scheduling software can be helpful depending upon the job at hand.

This chapter concerns computer applications and information technology in government. It could have been organized by public administration task such as human resource management or budgeting, but each governmental function uses several software tools that are not unique to that function. Thus a human resource manager uses word processing software and probably a spreadsheet and a database management program. The same could be said of someone involved in budgeting. This example suggests that a tool kit approach that concentrates on software type is a more useful way to organize this subject matter.

Topics covered in this chapter include: word processing and desktop publishing, spreadsheets, statistics packages, database management, presentation software, project planning software, graphics for illustrations, optical character recognition, network applications, and geographic information systems. Since most readers are likely to have substantial word processing experience, it would be unproductive to devote much space to word processing per se. The same applies to

searching the Web. At the opposite extreme, Web page creation programs are too complex to discuss here.[1]

The Document-centric Perspective

Microsoft president Bill Gates and others suggest that thinking in terms of such categories as word processing and spreadsheet software is obsolete. Gates prefers to focus on the document. For example, a memo would typically begin as text produced by word processing but added to it might be data and graphics from a spreadsheet and information from database management software. The authors do not believe that computing has reached the point of seamless integration of traditional software categories that Gates envisions. Word processing, spreadsheet, database management, and presentation software are still sold separately as well as together in suites, and the skills required to master each are substantially different. One Microsoft publication that attempts to explain the use of the Microsoft suite in a document-centric manner hops among traditional software categories, and explains none clearly or adequately (Microsoft, 1995).

A Complete Toolbox

Experience has taught us that to make the most of their time and talents, computer users in government or 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 of greater importance than having the latest version of one.

Word Processing and Desktop Publishing

Word processing software can produce anything from plain text little different in appearance from typewritten material to multi-column layouts with graphic images, photographs, data, and graphics pulled directly from spreadsheets, database management software, and other programs. Their strength lies in making typing and document production accurate and fast. The newer versions of the two major programs in use — Corel WordPerfect (1996) and Microsoft Word (1997) — allow for highlighting of mistyped words and permit the user to enable features that automatically capitalize the first word in a paragraph, place two spaces after a period, and even preset corrections for words frequently mistyped by the user. By marking text, tables of contents, indexes, lists, and the like may be generated automatically. Spelling checkers and a thesaurus are also built into the programs as are grammar checkers, but the latter are not reliable. Other useful tools include table creation with a variety of formatting options, the ability to convert columns to tables, and the ability to automatically shrink or expand a document to a specific page size by having the computer adjust margins, font size, and spacing.

Nonrelational flat file database capabilities are built into these programs. They allow the development of simple sets of data that may then be merged into a variety of documents, customizing them for a variety of purposes. Uses include mailing labels, addresses and salutations in mass mailed letters, simple membership lists, and

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