An Examination of Sources of Support Preferred By End-User Computing Personnel

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End users confront many problems when they employ computers in the solution of business problems. This study of 215 users in twelve organizations was undertaken to determine which sources of support were utilized by end users, whether relationships existed between the type of support utilized and an end user’s job position, personal characteristics, or skill-level. Other end users and software manuals were the primary sources of assistance. Computer store staff, vendor support lines, computer and information center staff, consultants, and online assistance provided less assistance. Except for the preferences for manual usage when using MS-DOS, all other hypotheses regarding user background and support preferences were rejected.

Introduction

End-User Computing

The phenomenal growth of end-user computing has been reported often. Nelson (1989) estimated that four out of five administrative and professional workers are using personal computing to support their work and personal activities. End-user computing reportedly accounts for 50 percent to 75 percent of all computer resources (Arkush and Stanton, 1987; Benjamin, 1984). End-user computing refers to the self-sufficient use of computer technology or the autonomous use of information technology by business and other knowledgeable personnel outside the information systems department (Brancheau and Wetherbe, 1990). Studies by Panko (1988) and Watson and Carr (1987) forecasted that end-user computing would be the dominant form of computing by the end of the decade. Not surprisingly, Arkush and Stanton (1990) found that over five years, the installed base of hardware and software purchased, managed, and owned by end-users increased to the point that in most large companies, 50% to 75% of all MIS applications are owned by end-users. Ein-dor and Segev (1988) found that 40% of the work force of the surveyed organizations were end-users. Munro, Huff, and Moore (1987-88) report that end-user computing has become a key component of many firms’ activities, now ranked second in importance among all information systems activities, just behind information systems planning by information systems managers.

End-users perceive information systems as more useful and better aligned with the needs of their business. They set their own priorities and spend money where they believe value can be achieved (Arkush and Stanton, 1987). End-users do not worry about an intermediary or about a time lag in the receipt of information (Head,
Computer literacy has even led to higher expectations of management information systems (Freiser, 1989). While management is cognizant of the crucial role played by end-users in the organization’s overall computing (Benson, 1983), the need to manage end-user computing efficiently and productively cannot be overlooked.

A compelling issue in managing end-user computing is providing an appropriate support environment. End-user computing requires that an appropriate resource be available to resolve end-user problems. Unless a problem can be surmounted, a project cannot be completed satisfactorily. Unless support is available at critical junctures during application development, end-user computing effectiveness deteriorates.

Support for end-users is difficult to provide, however. End-users exhibit a range of computer training and experience (Nelson and Cheney, 1987; Rockart and Flannery, 1983). Varying backgrounds result in disparate user needs and requirements for support. End-users may be intimidated by, lack an appropriate appreciation for, or lack an awareness of, available information resources. Technical knowledge and personality factors also affect user initiative (Rathswohl, 1990). Confounding the identification of a problem’s solution is the correct selection of a support source from a multiplicity of sources. No one type of assistance is appropriate for all end-users.

Past research provides little guidance in determining what types of support are needed. While there are many articles on end-user computing, most are of an exploratory nature. Little theory development has been reported (Brancheau and Wetherbe, 1990).

Panko (1988) discusses at least three levels of users: (1) novice users; (2) power users; and (3) intermediate users. Other researchers confirm that end-users come from a heterogeneous population, and, therefore, require different training alternatives, methods, and goals to effectively address their needs (Koong and Lai, 1990). In addition, Watson and Carr (1987) observed that when end-users seek support, they need to find a support person with the right mix of education, experience, and personal attributes.

Lee (1986) and Elder, Gardner, and Ruth (1987) reported that clerical or staff workers use computers significantly more hours per week than do most managers or professional end-users. Munro, Huff, and Moore (1988) reported that some end-users know more about software packages than many computing consultants. Turban and Walls (1990) found that end-user computer sophistication could be a major determinant of information center use, and concluded that the level of usage of information centers was situational and varied among organizations and individuals. Montazemi (1988) reported that higher levels of computer knowledge and experience increased the likelihood of end-user computing success. Similarly, Cheney and Nelson (1987) reported that there is a relationship between the training that a user receives and that user’s ability to use the resource.

**Sources of Support**

Studies commonly assert the need to provide adequate support to reap the productivity gains associated with end-user computing. Descriptive studies, critical success factor studies, and models of factors of success have found that end-user success is substantially associated with user satisfaction with end-user computing (Arkush and Stanton, 1987). Sources of support include:

**Software Manuals and Trade Books:** The first and most obvious sources of help are software manuals since they accompany each software package. Users may find trade computer books beneficial because they can select books that address their needs, problems, reading level, and so on. Seventy-eight percent of computer trade books purchasers are people with an “intermediate” knowledge of computers; equal percentages of “beginners” and “advanced” make up the rest (Mayles, 1990).

**Computer Store Staff:** Computer store dealers and other end-user sales outlets once handled support. With an increasing number of software packages and with high employee turnover rates, computer store staff rarely know any one product well (Nayen, Cook, and Jecker, 1990). Computer dealers, strapped by thin profits, cannot finance costly support operations (Lyons, 1990). In addition, computer mail order purchases place the buyer in a disadvantageous support position.

**Vendor Telephone Support Lines:** Telephone help lines have gained popularity (Joyce, 1989). Along with reported successes, end-user complaints about high costs and a lack of detailed product information are also reported. Fain (1988) reported that users are dissatisfied with the quality and availability of vendor telephone support.

**Computer/Information Center Staff:** Support may come from a user support group, a staffed information center, or data-processing professionals. Lee (1986) reported that users spend over twice as much time with resident experts as with any other source of assistance.