Computer Operations in Jordan: A Systems Development Study in an LDC

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A computer survey of 101 data processing managers was conducted in Jordan to explore the life cycle of computer systems; sixty-two responses were collected. Six hypotheses were tested by chi-square analysis, two in each of the following systems phases: planning, acquisition, and operation. Four of the six hypotheses were supported. The two hypotheses dealing with the operation phase were not supported. The results of the study provided revealing insight into Jordan’s progress and problems in the areas of system planning, acquisition, and operation. Specifically, the results indicate the importance of feasibility studies and managerial involvement in system planning, acquisition, and operation. In addition, the results indicate the importance of a strong ongoing relationship with local computer company representatives to ensure timely system updates.

Most managers would like information systems to take care of themselves, but they do not. Complex systems require attention lest they deteriorate. They require planning for resources, acquisition of appropriate resources, and monitoring of day-to-day operation. The phenomenon of system change is commonly called the systems life cycle (Hicks, 1984).

Much has been written on the systems life cycle. Most management information systems (MIS) textbooks include at least one chapter on the subject (Brightman, Dimsdale, 1986; Hicks, 1984; Sprague, McNurling, 1986). In the United States, much recent research has dealt with the systems life cycle as a whole or with one of its phases (Colter, 1984; Janson, 1986; Jenkins, 1984; Lederer, Mendelow, 1986; Palvia, 1986; and Sinclair, 1986). However, very little research has been conducted in other countries and especially less developed countries (LDCs) on the systems life cycle, any of its phases, or related issues (Mansour, 1987; Nilsen, 1978; Korpela, E., 1983; Stepanek, James B., 1984; Wofsy and Dickie, 1971). A significant amount of research in LDCs is devoted to such topics as informatics, electronic and computer industries in third world countries, computer applications and general policies, etc. (Clutterbuck, 1982; Hottman, 1984; O’Conner, 1985; Vajada, 1982).
The purpose of this paper is to investigate the computer system life cycle in an LDC, the country of Jordan. Specifically, the study focuses on the planning for (systems analysis), acquisition of (systems design), and operation of computer systems in Jordan.

Method

Data to achieve study objectives were collected by questionnaires which were distributed in 1985 to the entire population of 101 computer-using organizations in Jordan. Sixty-two usable questionnaires were returned for a response rate exceeding 60 percent. The distribution of responses by organization type for the population of 62 is shown in Table 1.

Table 2 categorizes the sample data by size of the organization (i.e., number of employees), by number of years the organization has had a computer installation, by computer budget as a percent of the total organizational budget, and by the administrative location of the computer system within the organization.

The questionnaire, which was completed by the data processing manager, was comprehensive and included seven sections: (1) organizational background, (2) systems technology, (3) systems application, (4) systems acquisition, (5) computer impacts, (6) future plans, and (7) problems encountered in systems design, analysis and operation. For a further discussion of data collected in all seven sections the reader is referred to Mansour (1987). Chi-square analysis was used to test six hypotheses. (See Appendix A).

Statement of Hypotheses and Their Rationales

The hypotheses tested concerned planning, acquisition, and operational issues. This separation would seem to make sense because of the natural sequential progression in the life of an organization’s information system from planning for a new system (or modification of an existing system) to the acquisition of the needed hardware, software, personnel, and supplies, to the day-to-day operations of these acquired resources.

This paper will test six hypotheses relating to the three information system life cycle phases, with two for each phase.

Systems Planning

Hypothesis 1 - The lack of a feasibility study will result in an increase in the number of computer system problems encountered by the organization.

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<thead>
<tr>
<th>Table 1: Distribution of Sample Data</th>
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<tr>
<td>Organization Type</td>
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<tr>
<td>Service</td>
</tr>
<tr>
<td>Financial</td>
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<tr>
<td>Educational</td>
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<td>Manufacturing</td>
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<td>Government</td>
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