Organizational Factors Affecting the Evaluation of Information Systems Performance

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This paper reports a Delphi study aimed at exploring organizational factors affecting the evaluation of information systems (IS) function performance. Information System Executives (ISEs) and corporate planners identified and rated factors influencing the prioritization of performance evaluation dimensions. The factors included IS function structure, impact of computer downtime, industry, and organization size. The variations in dimension rankings and measurement usage based upon these factors are consistent with the respondents’ perceived value of the factors. A framework is presented to focus the development of pragmatic approaches to IS function performance measurement.

Escalating information systems (IS) expenditures and increasing dependence on IS for maintaining organizational performance in highly competitive environments serve to emphasize the importance of IS function performance. Top IS executives continue to rank gauging MIS effectiveness to be among the top issues facing them in the next three to five years (Dickson, Leitheiser, Nechis and Wetherbe, 1984; Brancheau and Wetherbe, 1987). In line with this executive focus, a survey of IS personnel and academics rated MIS evaluation as the second most critical issue facing IS management (Ball and Harris, 1982). Further review of current IS literature shows that many other authors (Davis and Olson 1985; Dickson and Wetherbe, 1985; Lane and Hall, 1987; Wilkes and Dickson, 1987) increasingly support claims about the importance of assessing the IS organization.

However, measurement of IS function performance is complicated by the diverse goals and competitive environments of today’s organizations. These dissimilar goals and environments appear to preclude the unilateral application of a common set of IS function performance measures. Instead, critical contingencies promote the application of varied approaches and measures across organizations. For example, one might expect evaluation of the IS function to differ in organizations with dissimilar missions or in disparate competitive environments. Or performance may be evaluated differently in manufacturing than in service industries. This latter rationale was actually used by Miller and
Doyle (1987) to stress the need to concentrate study of IS effectiveness to specific industries.

There are additional organizational factors that might affect the selection of evaluation dimensions. For instance, the Raghunathans (1989) found that the formal position of the IS manager in the organizational hierarchy influenced the evaluation of effectiveness of the organization’s IS function. Organizational size, management support, and IS function structure may also affect IS function assessment. For example, Rockness and Zmud (1989) found that the frequency with which critical success factors were mentioned differed in eight firms varying across firm size, organizational environment, IS structure, and information technology (IT) management strategy. Ball and Harris (1982) suggested that needs and critical issues may vary across industry and by organizational size. And recently, Saunders and Jones (1992) proposed that organizational factors such as the organization’s industry and mission affect the selection and prioritization of IS performance dimensions.

**Methods**

**First Round**

**Procedures:** In the first round, IS executives directly responsible for the IS function and corporate planners were asked to rank eleven dimensions of IS performance. Ten dimensions are regularly cited in the IS literature: (1) IS contribution to organizational financial performance—e.g., budget performance, return on investment, costs, (2) IS operational efficiency—e.g., system response time, downtime, (3) adequacy of system development practices—e.g., percentage of projects completed on schedule, (4) managerial and user attitudes toward IS performance, (5) IS personnel competence, (6) IS personnel development, (7) IS planning, (8) information quality, (9) IS impact on strategic direction, and (10) integration with related technologies across other organizational units. An eleventh dimension, the ability of the IS function to identify and assimilate new technologies, was added as a result of a pilot test of the questionnaire among IS executives.

In addition to ranking the eleven dimensions in importance, respondents were also asked to modify the rationale provided for using these dimensions and to suggest any additional dimensions they felt should be included in IS function assessment. Space was provided for their suggestions. Three new dimensions of IS performance emerged from this first round: adequacy of data security administration, end user training and support, and adequacy of contingency planning. Rationales for the dimensions were updated to reflect respondent comments.

Since the critical dimensions were expected to vary by industry (Miller and Doyle, 1987), participants ranked dimensions used by their organization. If respondents thought that their organization’s dimension rankings differed from those of most firms, they were asked, in an open-ended question, to indicate the factors distinguishing the rankings for their firm from the rankings of other organizations.

Participants provided demographic data about their organizations: size (total revenue and number of full-time equivalent employees), IS budget as a percentage of revenues, percentage of budget allo-
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