Chapter XIX

Measuring the Impact of Information Systems on Organizational Behavior

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Information systems design’s traditional concentration on short-term, readily quantifiable functional factors has resulted in the development of systems that are usually quite capable of manipulating data in the desired manner to produce the required output, but often fail to promote the general behavioral climate objectives of the organization. Failure to consider such behavioral objectives in the design process can result in information systems that have an impact on the organization that is intrusive in nature. To design information systems that not only meet functional objectives, but also promote objectives related to the organization’s behavior, their impact on organizational behavior must be understood and quantified. Toward that end, a methodology that can measure the impact of an information system has on the behavioral climate of the organization has been developed and tested. Utilizing pre- and post-implementation assessments of an organization’s behavioral climate, this methodology enables information systems developers to identify specific potential design criteria which, when implemented, will increase the degree to which the organization’s behavioral goals and objectives are met. Consideration of such organizational behavior goals and...
objectives when designing information systems can result in significant progress toward ensuring the acceptance and long-term survival of those information systems.

Information systems, like any other production-oriented system, have as their goal the transformation of raw materials (data) into finished goods (information) in an effective, efficient manner. In the context of information systems, this means meeting informational requirements with a minimum expenditure of available resources. To develop such information systems, design and development strategies ranging from the traditional top-down or bottom-up techniques to Joint Application Design (JAD) to object-oriented have been advanced.

Traditional top-down systems design revolves around the functional decomposition of the business activity under consideration until the resultant sub-activities are of manageable size and complexity. This emphasis on functionality often overshadows other organizational considerations in the information systems design and development process. Along this line, Zmud (1983) noted that in traditional systems design, the use of a set of functional support oriented requirements to aid the design process was considered to be the key to a successful information system, with little consideration given to the impact of the system on the organization.

JAD, one of a number of systems design methods developed to increase user involvement in the design process while ensuring the functionality of the resultant information systems, makes use of a structured mechanism to increase the voice of the user community in the design of the information system. By actively involving the users of the system in the design effort, the focus on business needs they bring to the process should result in a system that is more organizationally relevant than would otherwise be the case.

Although not specifically developed to enhance user interaction in systems design efforts, object-oriented systems design methods tend to model business operations in such a way that users can more easily relate to and understand them. Because the functionality of individual objects, as well as interactions among them, are based on the actual functions and processes of the organizational activities being modeled, the organization’s behavior should, to some extent, be reflected in the information system developed from the design modeled.

Implicit in this recognition of the need to involve system users in information systems design efforts is the understanding that the system is an integral part of the organization within which it exists. As such, it is important that the system fits into the behavioral climate of that organization.
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