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IT MANAGEMENT

Measuring Organizational Usage of Information Technology

By: Anand Jeyaraj, Ph.D., Assistant Professor of Information Systems, Wright State University

Organizations make considerable investments in information technology to support their internal and external operations. For instance, a recent research report by Gartner Inc. indicates that worldwide spending on information technology will reach United States \$3.3 trillion for the year 2008.

Despite the recognition of the need for and the criticality of investments in information technology, however, organizations generally struggle with the question regarding the information technology productivity paradox. That is, are organizations reaping the full benefits of their considerable investments in information technology?

A fundamental question underlying the information technology productivity paradox relates to the measurement of information technology usage in organizations. Information technology usage has been measured differently over the years. One approach recorded the frequency (e.g. number of times a day) with which individuals used the information technology. Another approach measured the time spent (e.g. number of hours during a session) with the information technology by individuals.

These measures of information technology usage may be quite inconclusive due to three major reasons: a) lack of distinction on the type of usage, b) lack of attention to features of the information technology, and c) lack of direct computation of usage. The frequency measure does not distinguish between usage resulting from several disjointed sessions (e.g. real-time transactions) or from a few concerted sessions (e.g. batch transactions) with the technology. The time measure does not differentiate between usage resulting from complex tasks (that take more time) or simple tasks (that take less time). Moreover, these measures do not give any indication on the information technology features used by individuals within organizations (e.g. did individuals use all features of the information technology available to them?, did individuals use the same feature several times or different features a few times?, etc.). Finally, these measures are typically not constructed based on direct input from all users but rather from key informants who provide input on behalf of all users of the information technology.

Consequently, it becomes very difficult to determine the payoff resulting from the use of information technology within organizations. Several questions may be raised on the basis of the observations above. First, do organizations make full use of their investments in information technology? That is, are individuals making use of all features of the information technology for which organi-

zations spent their dollars? Second, what is the extent to which the features of the information technology are applicable to all individuals in organizations? That is, are organizations spending their dollars on information technology features that are relevant for a large number of its members? Finally, what would be an appropriate measure of organizational usage of information technology? That is, how best can information technology usage by all individuals aggregated for an organizational measure of usage?

If you are interested in finding more or participating in this research, please contact Anand Jeyaraj at anand.jeyaraj@wright.edu.

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