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A PANEL DEBATE ON STRUCTURE-TECHNOLOGY FIT: WHAT IS IT? WHAT GOOD IS IT?

Chair: **Barbara A. Gutek**
The Claremont Graduate School

Panelists: Linda Argote, Carnegie Mellon University
Paul Attawell, State University of New York, Stonybrook
J. D. Eveland, President, Technology Applications Research

The notion that an information system should fit or match an organization's goals, functions, or structure is appealing. Structural contingency theory, which contends that an organization must achieve a fit between its technology and its structure in order to be effective, provides a more complex account of the relationship between information technology and organizational effectiveness than models that posit direct, predictable effects of use of information systems. Thus, using a structural contingency model might allow researchers to explain how in one case the introduction and use of information technology is associated with greater productivity and in another case productivity is not increased.

Although structural contingency theory has appeal, it also has problems. Contingency theory and the concept of "fit" have a thirty-five year history in organizational sociology and psychology; their problems have received considerable scrutiny that is useful to researchers considering the merits of the theory. Our panel will examine three aspects of structural contingency theory with the goal of debating is usefulness for understanding information systems in organizations. The panel is well qualified to discuss this issue. Argote has explicitly used structural contingency theory in previous research in hospital settings and has used aspects of the theory to study the implementation of robotics in a factory. In his studies of computer surveillance of clerks in the insurance industry, Attawell contrasted structural contingency theory with other organizational theories. Eveland's studies of information technology among professionals and executives focuses on knowledge utilization and technology understanding. Gutek, who is interested in the fit between work-group structure and the information technology of the work group, has conducted one set of analyses explicitly testing structural contingency theory and is just underway with a two-year project involving 72 white collar work groups, designed to test eight different models of structural contingency theory.

Rather than having each panelist give a presentation, we will discuss three aspects of the technology-fit issue with at least two of the four panelist addressing each of the following three issues:

1. The first issue the panel will debate is: What is fit? If an organization or work group is supposed to match or fit its technology, what constitutes a good fit? Is fit something that can be predicted ahead of time or is it only recognizable after the fact, e.g., "The auditing department is effective because it has an information system that fits its goals and mode of work." Is fit independent of the concept of effectiveness? If a work group's technology fits its structure, will it necessarily be effective? Is "fit" just another term for effectiveness? Might a good fit be associated with some kinds of effectiveness (e.g., efficiency) but not others (e.g., market share)? In Argote's view, fit is indicated by a strong relationship between structure and technology. She will discuss a particular aspect of structure (centralization) and technology (the uncertainty associated with the work process) and cite research showing that decentralization as a form of structure is more effective when there is uncertainty in the work process. Gutek will present a view of it as an intervening link between characteristics of structure and technology on one hand, and effectiveness on the other.

2. If structure and technology should "fit" together, which takes the leading role? Do and should organizations adopt an information system and then try to fit their structure to it? Conversely, do and should organizations examine their structure and select an information system or implement an information system that fits their structure? Does it make any difference? Attawell will argue that, based on his research, organizations may need to adapt the use of the technology to their existing structure and goals. For example, the choice of using computers as a surveillance mechanism depends not on the computer capability, but on other organizational factors. Eveland will speak on behalf of joint optimization as a strategy. Both technology and structure should be considered when a change is contemplated.

3. When is structural contingency theory useful? Are there circumstances under which we might expect structural contingency theory to provide a good explanation of the data and other circumstances when it is relatively useless? Argote will argue that structural contingency theory is most useful when the information technology has been in place for a while and Gutek will argue that structural contingency theory is more useful in understanding work groups than in understanding information technology in a division or company. Attawell will argue that the theory is relatively useless in its narrow conception but if other structural variables are considered (e.g., business strategy or culture), it has potential. Eveland will contend that the theory is more useful for understanding the past than the future and will argue that structural contingency theory can provide researchers with a false sense of knowledge.