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Panel 9: Problem Framing: Emerging Issues in DSS Research

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PANEL 9

Problem Framing: Emerging Issues in DSS Research

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Panelists: Joyce Elam, University of Texas
Omar El Sawy, University of Southern California
Benn Konsynski, University of Arizona
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Decision support systems (DSS) are commonly understood to be interactive computer-based systems that are designed to help managers cope with ill-defined situations. In the past, most DSSs have helped decision makers deal with issues that have been relatively easy to structure. These have not always been the issues that have been of most interest to them.

This panel will address various research issues related to isolating and structuring the problems in which effective problem framing accounts for a large part of the performance variance in problem solving. While the members of the panel agree that DSS must be extended in order to help managers formulate problems, they differ in their perceptions of the criticality of issues to be considered.

Joyce Elam is convinced that initial research efforts should be directed toward methods and feasibility of supporting decision makers in the task of framing multiple problem representations. She believes that ill-defined situations require creative problem formulations. In other words, asking the right questions can be more important than answering them. She has found that problem formulation appears to grow in importance as the need for alternative solutions increases. She will argue that the key to creative thinking in ill-defined situations is the manager's ability to develop and explore alternative problem formulations and that DSS must facilitate this process.

Omar El Sawy believes that successful problem framing is critically dependent on initially enlarging the problem space through effective environmental scanning and multiple scenario generation, similar to what is practiced in futures research. He will discuss the features of DSS that have divergent rather than convergent support capabilities and are suitable for problem framing. He will address the types of DSS capabilities and underlying technologies that can be used to support "How about?" and "What else?" as well as the more traditional "What if?"

Benn Konsynski's position is that research into problem-framing DSS must begin with an investigation of dialogue management. He will propose an approach that begins by exploring the human computer dialogue through which decision makers frame problems. Convinced that, for the most part, DSS dialogues are static and offer little help in structuring problems, he will discuss the proper apportionment of the cognitive responsibilities between manager and system.

Charles Stabell suggests that, in order to develop more effective support for problem framing, we need to have a better understanding of how managers frame problems. In particular, he believes that to develop active support for problem framing, we need to consider and understand under what conditions, in what context, and for what purpose a manager might choose to use such a tool. He will address the issue by reviewing some ongoing research on key determinants of problem framing. In particular, he will discuss the "operational code" approach to studying managerial choice behavior; the approach considers the manager's fundamental beliefs about life in organizations, the role of managers, and the basis for effective decision making.

Sue Weber believes that we can best help managers frame problems in ill-structured situations by providing them with pattern- matching tools. These tools would help a manager gradually to accumulate patterns, extract the invariant features from these patterns, and map patterns and relations. Recognizing and then accepting a new problem formulation often requires considerable time and practice. Consequently, she calls for a problem-framing DSS that would support a manager in storing, retrieving, and modifying different mappings over many sessions until understanding and confidence in the formulation is developed.