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Dennis Galletta
University of Pittsburgh

David Darcy
University of Pittsburgh

Karl Lloyd
University of Pittsburgh

Weidong Xia
University of Pittsburgh

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EFFECTS OF INFORMATION UNCERTAINTY AND EQUIVOCALITY ON DECISION-MAKER INFORMATION SEARCHING AND USAGE

Dennis Galletta

David Darcy

Karl Lloyd

Weidong Xia

Katz Graduate School of Business
University of Pittsburgh

Understanding how individuals search and use information for decision making is critical in the study of decision behavior and in the design of effective decision support systems (Cook and Swain 1993; Todd and Benbasat 1991). Until now, most of the effort in research and practice has been focused on providing information to decision-makers, ignoring the *criteria* for evaluating that information. The purpose of this experimental study is to examine how information uncertainty and equivocality independently and jointly affect individual information processing behavior (which could, in turn, affect performance). The study also provides bridges between IS and other literatures (including information processing, information overload, and multicriteria decision-making). A computer-based process tracing technique (Todd and Benbasat 1987) was used to explore the information processing patterns that occurred while subjects solved a case problem.

Information uncertainty is defined as the absence of information, the difference between the amount of information required to perform the task and the amount of information already possessed (Galbraith 1977). Information equivocality means ambiguity, or the situation where there exist multiple or conflicting interpretations, or ill-defined criteria (Weick 1979). Drawing on the various strategies for coping with uncertainty and equivocality in the literature, individual information search and usage patterns are classified into three categories: rational, confirmatory, and ignorant. Rational use refers to the first time that a subject acquires a piece of information that is missing but needed for making the decision. Confirmatory use refers to any number of times a subject acquires a piece of information that he/she already possesses. Ignorant use means that a subject does not acquire a piece of information that is missing, although it is needed for making the decision. Five hypotheses are suggested by the literature:

Hypothesis 1: Decision-makers will employ different search strategies to resolve information uncertainty and equivocality. Specifically, they will search for factual information to resolve uncertainty, but will search for rules to resolve equivocality.

Hypothesis 2: Uncertainty is positively related to the quantity of rational queries made by individuals in a decision-making task.

Hypothesis 3: Equivocality is positively related to the quantity of confirmatory queries made by individuals in a decision-making task.

Hypothesis 4: Equivocality is positively related to the failure of an individual to acquire needed information for making a decision.

Hypothesis 5: There will be an interactive effect of uncertainty and equivocality on the information seeking processes used by individuals.

Research in Progress

The research methodology was an experiment with a two-by-two factorial design (uncertainty and equivocality). The subjects were 63 volunteer MBA students. The task was to choose one candidate out of 10 whom the subjects thought would best fit a hypothetical managerial job position. Four measures of information search patterns were adapted from prior studies: (1) number of attributes and/or rules accessed; (2) the amount of time spent on searching attributes and/or rules; (3) a set of search pattern indices used to capture the sequencing of information search (Todd and Benbasat 1991); and (4) decision confidence.

Preliminary findings support hypotheses 1 through 4. The process tracing files are currently being analyzed using protocol/content analysis techniques to fully investigate hypothesis 5. The complete results will be available at the presentation.

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