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Information Systems and the Public Sector and Measurement in Information Systems

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Two important Information Systems topics are addressed in the papers in this section: the Public Sector and Measurement. Each of these areas has been neglected in the MIS literature in the past. The public sector track will be concerned with global political issues as well as specific case analysis. The measurement track will be oriented to information value theory, measurement framework development, and definition of task representation.

INFORMATION SYSTEMS AND THE PUBLIC SECTOR

Rob Kling and Kenneth L. Kraemer's paper, "The Political Character of Computing Developments: Citizen's Interests and Government Services," directly addresses political issues in the public sector. The concept of managerial rationalism predicts vastly different computing usage than does reinforcement politics.

Data from over 700 city and county governments in the United States were collected to determine which perspective more closely reflects actual practice. The data show a general support for "prevailing community biases" of basic needs, efficiency, and law enforcement. Also, biases of reform administrators are well served. Based upon the data, the political model is apparently more accurate.

Joyce Glasser's papers, "Organizational Aspects of System Failure: A Case Study at the Los Angeles Police Department," discusses the Pattern Recognition and Information Correlation System (PATRIC) which was to be an aid to detectives in solving crimes. This case study depicts how important technological improvements are actually better off ignored if success in expensive implementation cannot be guaranteed.

The system was discarded due to socio-political issues before becoming fully operational. Variables that were ignored in implementation include the political environment of the police department, inadequacy of the existing data structures and processes, integration costs and difficulties, and the importance of trained personnel. The role of PATRIC was misunderstood, and inadequate staffing further confused the parties involved.

MEASUREMENT IN INFORMATION SYSTEMS

Michael E. Treacy's paper, "Toward a Behaviorally Grounded Theory of Information Value," provides insight into economic information models. Faulty previous assumptions are examined, and modifications are made to five areas: the decision process, human judgment under uncertainty, the choice of actions, multiple information signal resolution, and multiple decisions over time.

Each area of modification is discussed. Basic alterations to assumptions do not lead to abandonment of existing theories of information evaluation. Rather, they lead to a contingency use of evaluation theories. In this way, no "universal" theory is force-fit into a given situation. A "tailored" set of theories fitted to the situation is much more useful.

Jon A. Turner's paper, "A Method for Measuring Some Properties of Information Systems," offers field study researchers a scheme for representing system properties and sharing system measurement. The measurement framework is separated into properties of: processing organization, technical complexity, organizational complexity, functional completeness, and type.

Processing organization is concerned with work flows. Technical complexity is a measure of size and structure. Functional completeness is the degree to which the system includes applications for the users. Organizational complexity deals with the user environment. System type is concerned with actual processing functions that are performed.

An example of application of the measurement method in a Mutual Savings Bank situation illustrates the properties. Results from this example are encouraging.

Richard D. Hackathorn and Robert A. Fetter's paper, "Toward a Formal Definition of Task Representation," is concerned with formalizing a language for describing decision making tasks, in light of knowledge representation research. They illustrate the large gap between theoretical and actual business practice; order and rationality are presently very rare. Ambiguity in decision situations causes this gap, and task representation can lead to greater understanding of these situations.

Simple Associative Networks (SAN) are proposed as a graphic tool for representation of organizational activity. Four SAN levels (implementation, logical, epistemological, and conceptual) are described, and the notation is introduced. Complexity is handled by using a Petri Net approach.

Collectively these papers provide excellent foundations for two research areas that deserve more attention and effort.