

: Is DSS or Decision Support a core concept in Information Systems?

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Academic disciplines have core concepts, the fundamental building blocks or areas of study of the discipline. In many settings concepts are defined vaguely as ideas, notions, or abstractions. A scientific discipline requires more formal definitions of core concepts. In the discipline variously called Information Systems, Information Technology or Management Information Systems, one group of core concepts should be types/categories of information systems. Historically, a decision support system (DSS) has been considered a type of information system. Decision support is a capability that information systems and information technology can provide.

This Ask Dan! question was initially prompted by an email to the ISWorld mailing list in the Winter of 2001. The email announced that the Association for Information Systems (AIS) Board of Directors had decided to create Special Interest Groups (SIGs) in broadly defined IS research areas. The announcement noted that many other professional associations had that type of organizing structure.

At about the same time that AIS was requesting proposals for SIGs, I read Frederic Adam and Brian Fitzgerald's paper (2000) titled "The status of the IS field: historical perspective and practical orientation" in *Information Research*. They concluded "IS researchers do not seem to have succeeded in developing a core of concepts and definitions to enable the accumulation of knowledge in IS and to significantly contribute to the improvement of the business application of information systems." The action by AIS to create Special Interest groups helped remedy the problem identified by Adam and Fitzgerald and others. Special interest groups help realize the twin benefits of accumulating knowledge and contributing to Information Systems practice.

What are the broadly defined IS research areas and what are the core concepts? We won't all agree on the labels and we may end up with some overlap, but the process has begun. The 9 "tracks" for AMCIS 2001 were a good starting point for identifying SIGs. Detmar Straub and Diane Strong identified: 1) curriculum and e-learning, 2) data management and decision support, 3) electronic commerce, 4) ERP systems, 5) IS and software design, development and use, 6) information technology applications, 7) information technology management, 8) networks and 9) theoretical foundations and research methods.

At the 2001 Americas Conference on Information Systems (AMCIS 2001), data management and decision support topics were "lumped together" and that may be a good approach to keep the number of SIGs to a manageable number. What is important is to identify a special interest group

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related to "information systems intended to support decision makers". The broad concept of a Decision Support System or DSS is widely used in practice and in research, but its context of use indicates a shifting, somewhat ambiguous definition. Power (1997) titled "What is a DSS?" was a modest attempt to clarify the DSS concept for a practitioner audience. The article begins "Decision support system (DSS) covers a wide variety of systems, tools and technologies."

Power (2001) in "Supporting Decision-Makers: An Expanded Framework" described an expanded framework for categorizing knowledge about Decision Support Systems. The abstract states "A conceptual framework for Decision Support Systems (DSS) is developed based on the dominant technology component or driver of decision support, the targeted users, the specific purpose of the system and the primary deployment technology. Five generic categories based on the dominant technology component are proposed, including Communications-Driven, Data-Driven, Document-Driven, Knowledge-Driven, and Model-Driven Decision Support Systems. Each generic DSS can be targeted to internal or external stakeholders. DSS can have specific or very general purposes. Finally, the DSS deployment technology may be a mainframe computer, a client/server LAN, or a Web-Based architecture. The goal in proposing this expanded DSS framework is to help people understand how to integrate, evaluate and select appropriate means for supporting and informing decision-makers." Power (2004) refines the Informing Science proceedings paper.

Power (1997) explained "A decision support system (DSS) is an interactive computer-based system intended to help managers make decisions. A DSS helps a manager retrieve, summarize and analyze decision relevant data. It may be primarily a data-oriented DSS or a model-oriented DSS (cf., Alter, 1980). It may be an enterprise-wide DSS that supports a large group of managers in a networked, client-server environment with a specialized data warehouse or a desktop, single user DSS on the PC in a manager's office." A DSS may also be an application on a mobile device.

Decision support systems and decision support are core concepts in the field of Information Systems. Over the years it has been important to integrate concepts like business intelligence, knowledge management and analytics into the decision support conceptual domain. Our knowledge expands, technology developments enhance capabilities and new terminology is used by vendors and scholars.

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