

## *: What factors indicate a special study is more appropriate than a DSS?*

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Personal and organizational factors, cultural factors, decision factors, information factors and psychological factors vary among decision situations. Every decision situation can not and should not be supported with a computerized decision support system (DSS). A major alternative is to conduct a special study using some computer-based analyses. Given that some decision situations are better supported by preparing a one-time special study, what factors indicate that it is more appropriate to prepare a special study than build a decision support system?

Let's clarify the term special study. Some other synonyms that are used for this term include: a quantitative analysis, a financial analysis, a cost-benefit analysis, a simulation study, and/or a management analysis.

Special studies are usually prepared to support decision-making in situations that are especially important and one-time (novel or infrequent). Decision situations that are very unstructured, involve negotiation or bargaining or that are political are also likely candidates for special studies. DSS are generally **NOT** appropriate in these situations. We often develop computerized quantitative models as part of a decision support special study. We sometimes incorrectly identify these applications as DSS.

To justify the cost of building a specific decision support system it is usually necessary that the DSS will be used repeatedly over a period of time either in multiple recurring decision situations or in a single, complex, time consuming decision process that extends over a relatively long period of time.

Data-driven DSS seem most appropriate where managers need frequent access and ad hoc analysis of large data sets. Model-driven DSS are appropriate in recurring decision situation that are semi-structured where a quantitative model or models can inform or support analyses and choices. Knowledge-driven DSS are appropriate where a narrow domain of expertise can be defined and where one or more experts can be identified or where knowledge can be codified to help a less expert decision maker. A document-driven DSS should be built when a very large set of documents has been, is or will be created that needs to be filtered, sorted, searched and analyzed. A communications-driven DSS is most appropriate where two or more people need to be involved in an ad hoc or on-going decision process and either can't meet or find it costly to meet and want to use technology tools to communicate, collaborate, evaluate and support decision analysis or evaluation. Communications-driven DSS can support analysts who are collaboratively preparing a

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special study.

Special studies use data, models, analytics and research to help structure the discussion of issues of decision relevance. Special studies usually provide a detailed, comprehensive and analytical examination of a topic or issue and evaluate decision alternatives.

Personal and organizational factors like organization size and decision maker experience have an impact. An organization cultural that values fact-based decision making increases the use of both DSS and special studies. Decision factors like frequency, novelty and structure make a major difference. Information factors like availability and relevance increase the likelihood of computer analysis and decision support. Finally, psychological factors like risk aversion, thinking style and personality traits impact decision processes and the use of a DSS versus a special study.

### **References**

Power, D., What is a computer supported special decision study? DSS News, Vol. 10, No. 16, August 9, 2009

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