: Is decision automation a hot topic? Does using a DSS require statistical expertise?

YES and NO. Decision automation refers to using technologies including computer processing to make decisions and implement programmed decision processes. Decision Support Systems (DSS) are interactive computer-based systems and subsystems intended to help decision makers use communications technologies, data, documents, knowledge and/or models to complete decision process tasks. Regular readers of DSS News knew the answers to these questions! So why do I raise these issues now? Some people still don't understand the decision support systems (DSS) concept and how it relates to decision automation systems (DAS).

Recently, guru, pundit and Information Systems professor Tom Davenport mentioned decision support systems in his column in CIO magazine. That's the good news; the bad news is that he's "muddied the waters" about the DSS concept. I'm writing this column to set the record straight, to possibly attract Tom's attention and to demonstrate the ongoing problem we have with managing DSS knowledge. Tom's October 1, 2004 CIO column was titled Decision Evolution. I came across it while searching for materials about DSS/IS trends and developments for the years ahead. Davenport asserts "Automated systems are helping businesses make decisions more productively and consistently. But they're also making a lot of entry-level jobs obsolete. Executives had better be prepared to manage the transition." OK, this trend is occuring and decision automation deserves more attention from those of us interested in DSS. At DSSResources.COM we published a Thought Leader Interview with Randy Fields titled "Automating 'Administrivia' Decisions" on April 9, 2004 and in May 2004 we started a new website named DecisionAutomation.COM. Decision Automation is a hot IT-oriented topic. Randy Fields argued the impact of automating decision making is going to be on managers. He thinks decision automation systems will reduce the number of managers that organizations need. So the impact of DAS will probably extend well beyond entry-level jobs that involve computation tasks.

So what's my complaint with Tom Davenport's article? He notes correctly that artificial intelligence (AI) and decision support systems (DSS) are the "parents of automated decision making". He asserts DSS were "ultimately disappointing despite lots of favorable hype" and he writes decision support systems "never really flourished, despite being the darling of academics for decades, perhaps because they required too much statistical expertise and too much human analysis for these lean times." We have had disappointments with implementing DSS, but DSS in general have been successful. More importantly, DSS don't require statistical expertise. Perhaps Tom is thinking of data mining or Bayesian analysis tools and calling them DSS. As far as his criticism that DSS require "too much human analysis", that may sometimes happen. Perhaps the problem is a design issue or a function of user frustration, lack of training or impatience. DSS are adjunct, support systems. The intent of DSS developers is to keep humans in the decision loop. The goal of decision automation systems is to replace human decision makers with a technology solution. We need both types of computerized systems.

A decision automation system (DAS) serves a different purpose in a different context than does a decision support system (DSS). Davenport notes "For the most part, these systems are being used for decisions that must be made frequently and very rapidly using information available online. The decision domains are relatively highly structured, with well-understood decision factors." DSS work best in semi-structured decision situations where some human judgements or analyses are needed. Data-driven DSS exist because a person wants or needs to analyze the results of a database query. A model-driven DSS is built to help a decision maker examine the sensitivity of a model or to conduct "what if" analysis and then perhaps finalize an estimate or a forecast. Decision automation

systems exist because information technologies can make some decisions better, faster and at a lower cost than can a human decision maker.

Tom recites a litany of decision automation applications: yield management systems in airlines, optimizing hotel room rates, insurance underwriting and evaluating home equity loan applications. The applications are growing because the cost of deploying technology is declining and because our understanding of structured decision situations is increasing. Building decision automation systems remains a challenging task. Tom correctly notes the need for more people trained to build and maintain decision automation systems. You can read more about decision automation in my July 4, 2004 column in DSS News titled "What is decision automation?"

Davenport concludes "Businesses need to incorporate automated decision making into their strategies and processes or they won't be successful for long. There is simply too much data, and too many decisions to be made on it, for organizations to pass on this technology. Some jobs may be lost, but firms that improve their productivity in this manner will at least remain in business."

I agree with Tom about the importance of automated decision making, he captured my attention. Now please Tom, get your facts about DSS correct. If we are to effectively manage our knowledge about computerized decision support systems, it is important that we all protect the integrity of our concepts. When you see Tom Davenport remind him of the heritage, definition and scope of DSS.

Tom Davenport is a Fellow with the Accenture Institute for High Performance Business and holds the President's Chair in Information Technology and Management at Babson College. Contact him by email at tdavenport@babson.edu or contact leadingthoughts@aol.com.

References

Davenport, T. "Decision Evolution". CIO Magazine, October 1, 2004, http://dssresources-com.c.topica.com/maac15DabcXM5cgnx0nbafpOmV/ .

Power, D. J., "Randy Fields Interview: Automating 'Administrivia' Decisions", DSSResources.COM, 04/09/2004.

Power, D. J., "What is decision automation?", DSS News, Vol. 5, No. 14, July 4, 2004.

The above response is from Power, D., Is decision automation a hot topic? Does using a DSS require statistical expertise? DSS News, Vol. 6, No. 1, January 2, 2005.

Author: Daniel Power
Last update: 2005-08-16 21:54