: What is the "answer" to my DSS question?

by Daniel J. Power

Editor, DSSResources.COM

Currently, I have a backlog of more than 75 questions that have been emailed to Ask Dan! since September 21, 2005. Usually I send a quick followup to Ask Dan! emails and then use the broader questions as the starting point for a column. This column discusses some of the "short answer" questions. I'm going to address questions in a chronolgical order.

Q: I received the following email from Regina on September 21, 2005. Regina writes: "Are decision markets a useful decision support tool?"

A: The short answer is YES, decision markets can be useful decision support tools in the right circumstances and for an appropriate task. Please check the DSS FAQ for more details. Follow the Ask Dan! FAQ link in the top panel menu on the DSSResources.com homepage. There are more than 100 frequently asked questions like this one answered in the Ask Dan! content management system. I answered this question in DSS News, Vol. 4, No. 16, August 3, 2003. All of the DSS Newsletters are also archived at DSSResources.com.

Q: Roziana asks: "What is the difference between decision support system agents and decision support system technologies?"

A: A DSS agent is an example of a very specialized DSS technology. Using Artificial Intelligence programming, an autonomous agent application is created as part of a broader DSS (often a data-driven DSS). A manager or staff person "programs" the agent to act on his/her behalf and send alerts or even take actions to execute instructions. Most DSS agents are task-specific tools. Perhaps at some point I'll have time to explore this issue more completely.

Q: Beverly wondered: "What are the types of DSS? and How does one develop a DSS?"

A: Please read the Ask Dan! "What is the expanded DSS framework?" and

check Ch. 4 in the DSS hyperbook.

Q: RM writes: "I'm doing my thesis right now entitled 'Family
Planning Methods: An Online Decision Support System'. I'd like to ask
what System Development model is most appropriate to my study? Is it a
spiral incremental design approach?"

A: My experience is that web-based DSS are usually best developed
using an incremental design or rapid prototyping approach. The spiral
design model specifies incremental development. The developer
"iterates through the cycle, starting with the ideas, design, then
the coding and testing." Unlike the "Waterfall" aka Systems
Development Life Cycle model, a spiral or incremental approach allows
the high level design to change and evolve during development.

Q: Sari asks: "Dear Dan, Has the article of A. Gachet concerning a
new framework of DSS been discussed on your web site? The citation is
Gachet, A., "Software Frameworks for Developing Decision Support
Systems - A New Component in the Classification of DSS Development
Tools", Journal of Decision Systems, 12(3/4), 2004, pp. 271-281."

A: Alexandre is a friend and I recommend that colleagues read the
article. Perhaps in some future column I'll discuss Ralph Sprague's
framework and Alexandre's critique in the context of developing DSS.
Each year more that 100 academic articles are published relevant to
DSS and hundreds of popular press articles. I can't comment on them
all.

Q: Jovielyn wonders: "What are the DSS software tools? Briefly
describe each tool's function and give examples of who might use the
product."

A: I assume you are curious about DSS development tools from various
vendors. I recommend that you follow the links in the Vendor
Directory. The directory lists 59 vendors of DSS related products.
Some of the vendors focus on hardware or consulting, but most are DSS
software vendors. Some vendors sell multiple products and most have
product information on their web sites.

Q: Vim's email reads: "What's a group support system?"

A: The first group support system was built by Doug Engelbart at SRI in the late 1960s. The term is a broad label for a wide variety of technologies that are used to support people in synchronous interacting groups or in asynchronous groups. Other related terms include group decision support system (GDSS) and groupware. Check Ask Dan! "What is a Group Decision Support System (GDSS)? How do GDSS work?"

Q: Carol asks: "Can project management be considered a form of DSS?"

A: Project management software is an example of a DSS generator for creating a specific model-driven DSS for use in managing a project.

Q: Norma wonders: "Are DSS stand alone systems? Are such systems less flexible?"

A: Until the advent of the Web and Internet, many model-driven and knowledge-driven DSS in particular were stand alone personal computer-based systems. Such systems are less flexible and are harder to deploy and maintain. Today many of those legacy systems can be implemented as web-based DSS.

Q: Deniz writes: "Dear Dan, please guide me in trying to find which problem properties suggest the use of a rule-based system, model-based system, case-based system using Dempster Shafer theory and fuzzy values. I was trying to understand Dempster Shafer theory better and I thought of coming up with an example. I thought if directors of a company where to find out if the employees are coming late to work then apply this. But I had troubles implementing the theory. Please advise me further. I would really appreciate further advice and guidance. Best Regards."

A: Hi Denis. I don't like the example you chose. I would suggest problems where managers have difficulty expressing their opinions quantitatively.

Q: Abdullah states: "I am an SAP consultant and our company is planning on implementing SAP in a power utility provider. The only utility that SAP offers that has anything to do with decision making is SAP Analytics. My question is... 'Would it be a good idea to propose SAP Analytics for a DSS?' and 'Is it going to serve the purpose of a DSS ?' Thanks."

A: I am not an expert on SAP Analytics. If the company is using SAP for ERP and managers want a simple data-driven DSS, I would explore SAP Analytics first and then move on to other products if SAP Analytics couldn't provide the required functionality. Find out what analytics managers need and want.

Q: Pera asks: "Dear Mr. Dan, Do you know where I can download some free or free to try expert system shell software for building expert systems. It must be for Windows platform, something like VP Expert (Rule Based expert system). VP Expert is for the DOS Operating Syistem. Thanks and best regards."

A: I would check Exsys.com. You can download a free 30-day Exsys CORVID software trial package.

Q: Amit requests information on "decision support systems for supply chain management."

A: Systems for forecasting and replenishment used by companies like Wal-Mart are one example. Also, check the recent press releases at DSSResources.com and visit vendors like JDA Software (jda.com). JDA recently acquired Manugistics, a vendor of supply chain optimization software.

Q: Nadeem writes: "Can you answer questions about GPSS? I have a coding problem. Also, can you please suggest where I can find DSS information about Hurricanes Katrina and Rita."

A: Global positioning systems can provide valuable information for use in DSS, but I can't answer your questions or help with coding

problems. As far as predicting hurricanes, I would check NOAA/ U.S. National Weather Service (www.nhc.noaa.gov).

Q: Emmanuel wonders: "How do DSS relate with food science?"

A: I'm not familiar with this application area. Please conduct a more traditional literature review.

Q: Atumah asks: "What is the importance of DSS in urban planning?"

A: My guess is that Urban Planners primarily use computer support for special studies and that there is little application of DSS. Managers in large municipal governments use DSS for a wide variety of tasks.

Q: S. Swaminatahn requests: "What are the components of a DSS?"

A: In Ralph Sprague's framework (1980), the components are: dialogue, database, models and DSS architecture. These components are used in my expanded DSS framework to further classify systems as data-driven, model-driven, knowledge-driven, document-driven and communications-driven DSS.

Q: Arti asks: "Help me understand supporting decision making and types of DSS."

A: Start by reading my article, Power, D. J. "Supporting Decision-Makers: An Expanded Framework". World Wide Web, http://dssresources.com/papers/supportingdm, version 1.0, December 15, 2000.

Q: Jheanelle writes: "what are decision models?"

A: The term decision model refers to quantitative or heuristic models used in model-driven or knowledge-driven DSS.

Q: Edmund states: "Recently I have been planning to develop a DSS to assist in online purchasing of PC Hardware. May I have your ideas about which type of DSS to use for this system. This system will guide the user to select Pc Hardware."

A: I would begin by stating the requirements of the system and then explore the possibility of building a web-based, knowledge-driven DSS to support this task. Also, it may be possible to use a form with options that a user would select. This solution would be more of an order entry system than a DSS. Start with decision-oriented diagnosis, what capability is needed? who will use it?, then work on design.

Q: Nadia wonders: "What is the purpose of the DSS Research Community?"

A: The DSS Research community is trying to create new knowledge, share what we have learned and when possible improve the effectiveness of decision making in organizations, within groups and by individuals serving in many decision roles.

Q: Bernald writes: "Me podría explicar ampliamente los mayores logros del DSS, porfavor Porque debo usar DSS? Si pudiera responder antes del lunes, me ayudaría mucho."

A: DSS can enhance profits by improving performance monitoring, speeding up decision making, increasing the quality of decisions, improving cost estimates and forecasts. In general, I can't answer questions that I receive quickly. If you are a manager with a quick question, I provide phone consulting for an hourly fee. Because of Google language tools, I can understand questions like this one from Bernald. When possible, please submit questions in English.

Q: Nazarudin requests: "I want to know more about weighting methods. Especially the pro and con analysis using weightings."

A: In my DECAID system and in PlanningDSS.com, the software elicits

pro and con arguments for each alternative action and then asks the decision maker to weight the importance of each argument on a 1 to 10 scale where 10 is very important and 1 is unimportant. Then the software adds and subtracts based on whether an argument is pro or con and calculates the summed score for each alternative. Ben Franklin recommended Pro/Con analysis in his autobiography 200 years ago as a decision support tool. My software tries to help a decision maker quantitatively "balance" the pros and cons for each alternative.

Q: Karuna notes: "We are developing a DSS for project scheduling using meta heuristics. Please provide the reference material regarding this and previously built DSS in this context."

A: This is not my area of expertise. You should do a full scale literature review using a journal article database.

Q: Graziella asks: "How are DSS used?"

A: The goal has been to have users like managers interact with a specific DSS to analyze situations and help make decisions. So a manger may run a query, examine performance metrics on a dashboard, perform sensitivity analysis with a model-driven DSS or use a knowledge-driven DSS to evaluate an unemployment claim.

Q: Khalid writes: "Respected Sir, we would like to order your book as a disc copy, please advise us how to get the required copy. Your early response is highly appreciated."

A: My DSS book published in 2002 by Quorum/Greenwood is not available as an ebook or PDF. My 2005 DSS FAQ is available for download at iUniverse.COM. The DSS hyperbook (2000) in the subscriber zone at DSSResources.com contains most of the content that eventually was published in Power (2002). The cost is only USD $10 for a 2 month subscription to the subscriber zone.

Q: Geenie wonders: "How does a DSS help in environmental research and management?"

A: I don't track that application area. Sorry I can't help. There are many specialized application areas for DSS. I primarily focus on Business Management applications.

Q: Anne asks: "My neighbor and long time friend has a small pastry and candy business. She has about 5 stores in the area. She wants to branch out in one big step. Go global on the Internet at first and then perhaps have more real stores as well. Her business is computerized and she has everything that she needs except a DSS. I have tried to convince her she needs a DSS in order to take a step that big to no avail. Please help! Give me something to wow her so she doesn't fall on her face. Thanks in advance."

A: There is nothing that will WOW her. Tell her "Computerized decision support should be considered when managers are in decision situations characterized by one or more of the following factors: complexity, uncertainty, multiple groups with a stake in the decision outcome (multiple stakeholders), a large amount of information (especially company data), and/or rapid change in information (Power, 2002)." Based upon what you have written, her operation is not large enough for a sophisticated data-driven DSS. I would start with a needs analysis and audit her current decision process for opportunities to speed decision making or improve performance monitoring.

Q: I'm running out of energy, so only one last email from Anastasia. "Hello, I would like to congratulate you on the great work you are doing with your website. I was wondering if you can give me any directions where to look for DSS interface design material. The Chapter 5 you have on the website is very helpful, but I need more information. Can you help me out? Thank you for your time and your efforts."

A: Thanks for the positive feedback. It makes writing Ask Dan! worthwhile. I have been expanding the articles on innovative user interfaces at DSSResources.com. Currently, you should check four articles: 1) Alper, Brown and Wagner, 2) Kirtland, 3) Shneiderman and 4) Vasiliu. There is also an Ask Dan! "What DSS interface design is 'best' for eliciting values?" from DSS News, Vol. 4, No. 11, May 25, 2003.

Well, this Ask Dan! column briefly answered 29 questions that I have received in my emails. I'm still backlogged, but this column may help provide quick answers to a wide variety of questions. When in doubt about DSS, check the DSS FAQ at DSSResources.com.

As always your comments, feedback and suggestions are welcomed.

References

Alper, C., K. Brown and G. R. Wagner, "New Software for Visualizing the Past, Present and Future", DSSResources.COM, 09/23/2006.

Gachet, A., "Software Frameworks for Developing Decision Support Systems - A New Component in the Classification of DSS Development Tools", Journal of Decision Systems, 12(3/4), 2004, pp. 271-281.

Kirtland, A., "Executive Dashboards", DSSResources.COM, 01/20/2006.

Power, D. J., "Supporting Decision-Makers: An Expanded Framework", World Wide Web, URL http://dssresources.com/papers/supportingdm, version 1.0, December 15, 2000.

Power, D. J., Decision Support Systems: Concepts and Resources for Managers, Quorum Books/Greenwood Publishing, 2002.

Power, D. J., "What DSS interface design is 'best' for eliciting values?", DSS News, Vol. 4, No. 11, May 25, 2003.

Power, D. J., "Are decision markets a useful decision support tool?", DSS News, Vol. 4, No. 16, August 3, 2003.

: What is the "answer" to my DSS question?

Power, D. J., Decision Support Systems: Frequently Asked Questions, iUniverse.COM, 2005.

Shneiderman, B., "Using Treemap Visualizations for Decision Support", DSSResources.COM, 06/23/2006.

Vasiliu, A., "Dashboards and Scorecards: Linking Management Reporting to Execution", DSSResources.COM, 04/30/2006.

Author: Daniel Power
Last update: 2006-10-22 17:07