: What are the "best" DSS case studies at DSSResources.COM?

by Dan Power

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Professor Roth and I started following DSS/IT developments at Ertl Company in 1997. The Ertl case (Power and Roth, 2003) describes an extended process to use information technologies and a data-driven DSS with a new data warehouse to improve management decision-making. The case covers a period of rapid change in technologies (1990-1998) and one can argue that Ertl had some serious limitations and constraints that reduced the likelihood that the IS/IT projects would be a major success. The vendors and IT staff did however win some recognition for the DSS projects. The case illustrates the challenges of implementing decision support technologies in a traditional, mainframe computing environment. Ertl IS and management staff embarked on a decision support journey and the IS staff were supposed to lead the transformation of the firm and hence improve the profitability of the firm.

In general, students and those of us interested in continuing DSS education should read cases about a wide variety of decision support systems. I try to pick cases using the expanded DSS framework and then start through the list by having students first read a case that showcases a communications-driven DSS. I usually start the discussion of each case by focusing on the type of DSS, the targeted users, the enabling technology, and the purpose of the DSS. Following that overview of the case, the discussion should then focus upon the key issues in that particular case.

An example of a simple, communications-driven DSS is the Naval Bureau of Medicine case by eRoom Staff (2002). The Naval Medical Information Management Center (NMIMC) staff is tasked with providing global information services to personnel within Navy Medicine. NMIMC implemented the eRoom digital workplace solution to create a virtual work environment for Navy Medicine CIOs and their staffs. It provided a central forum where CIOs could trade experiences, make acquisition decisions, discuss upcoming legislation, and manage the lifecycle of ongoing projects and assignments. A major issue is the potential problems of such a large number of participants supported in an asynchronous decision support environment.

Many of the DSSResources.COM cases focus on data-driven DSS. Cases have been published from most of the major vendors including Alphablox (2001), Brio (2001), Business Objects (2001), Cognos (2002), Comshare (2001), DataBeacon (2001), Microsoft (2002), MicroStrategy (2001), ProClarity (2002) and Teradata (2002). A more vendor neutral case is Barton (2003), "The George Washington University Data-Driven Decision Support Project." Peter Barton is Manager, Data Administration, The George Washington University. Eric Vollmer (2002) described the implementation at Anderson Clayton Corporation of a "real-time" business intelligence capability for their customers, i.e. cotton growers. The DSS was built using arcplan software. Whether the system is a good example of "real-time" decision support is questionable, but the screen shot helps readers understand a simple, data-driven DSS.

Case examples of document-driven DSS include Stellent (2004) and Documentum (2003). Stellent Staff (2004) describe the implementation of Stellent Universal Content Management software for

managing the University of Alberta's administrative policies and procedures manual. The Documentum (2003) case focuses on BFG Aerospace. BFG adopted a document-driven DSS called AirFLOW to support the complicated workflow approval procedures for non-routine aircraft maintenance.

Two case examples of spatial DSS help readers distinguish between data and model-driven, spatial DSS. Myron Messak (2003) reported a system he helped develop in Mayfield, NY. The decision support system was built using Geographic Information System (GIS) software to help Fire and Emergency Medical Services personnel. Sugumaran and Meyer (2003) report on WEBSDSS. The web-based spatial decision support system (WEBSDSS) they developed is a prototype focused on watershed levels in the Columbia, Missouri area. A user inputs relative weighing factors for criteria, then the system outputs a map with a graphical display to help choose an area for future development. By changing criteria, the user can perform "what if?" analysis.

A number of cases describe knowledge-driven DSS. My favorite is of course Pontz and Power (2002). Craig Pontz works for the Bureau of Unemployment Compensation Benefits and Allowances, Pennsylvania Department of Labor and Industry. The case describes the Expert Assistance System for Examiners (EASE). Craig was the major author of this web-based DSS developed to help examiners conduct fair and consistent determinations for unemployment claims. Both EXSYS (2002) and Biss (2002) describe other knowledge-driven DSS.

Model-driven DSS are probably not as well represented as they should be in the DSSResources.COM archive. Relevant cases include Young, Rabone, Akenhead and Gregrone (2001), Wasyluk and Saaty (2001), Palisade Staff (2001), Decisioneering Staff (2001), arcplan Staff (2001) and ProModel Staff (2004). The ProModel case describes a computerized simulation model that was used in a special study for MeritCare Health System and that might eventually be used as a DSS. The TechComm Associates Staff (2001) case describes how and why Liberty Brass changed their estimating software from a simple, model-driven, spreadsheet-based approach to a data intensive, engineered cost approach. Wasyluk and Saaty (2001) describe a model-driven, group DSS used for resource allocation at the U.S. Department of Veteran's Affairs.

This Ask Dan! tries to convey the breadth of DSS cases at DSSResources.COM and how they fit into the broad realm of computerized decision support. All of the cases are listed at URL http://www.dssresources.com/cases/index.html.

Once again ... we are always looking for interesting cases to publish. Please contact me with your ideas, materials and suggestions, Daniel.Power@DSSResources.COM.

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