

: *What are the features of a communications-driven DSS?*

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Questions about the features and characteristics of the five types of DSS (Power, 2002) are common in my email. This Ask Dan column examines communications-driven DSS. Kelvin asked "What are some of the features of communication-driven DSS?" Sy wondered "What are some good tools for communication-driven DSS?", Hy asked "How are decisions supported by groupware?", and Emily wanted to know "What are the costs associated with communications-driven DSS?"

Features are identifiable capabilities or properties of an artifact that can be directly observed. Features are a distinctive part or attribute of an artifact that may or may not confer a user benefit. A specific decision support system will not necessarily have all of the features associated with a general category of DSS, but a list of features can help in classifying and understanding computerized DSS.

Many identifiable features are found in products variously known as electronic meeting software, groupware, group DSS, conferencing software, and collaborative software that can be used to create powerful communications-driven DSS. Over the years, the technical possibilities have expanded with the development of video and voice over the Internet protocol. Web-based chat and instant messaging software appeared in the mid 1990s. In the late 1990's, PlaceWare created the first web conferencing capability and Microsoft introduced NetMeeting (cf., Wikipedia).

Communications-driven DSS use network and communications technologies to facilitate collaboration, communication and decision making. Communications technologies are central to supporting decision-making. Technologies include: LANs, WANs, Internet, ISDN, and Virtual Private Networks. Tools used include whiteboards, Video conferencing, and Bulletin Boards.

A communications-driven DSS may support synchronous (same time) or asynchronous (different time) communications and meetings or both types. A specific system may support two-party or multi-party

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communications and decision making. Communications-driven DSS are usually purchased applications. The lowest level of asynchronous communications-driven decision support comes from email. Threaded bulletin boards with polling provide more functionality. For more information see the column "Is email a good decision support tool?" The lowest level of synchronous communications-driven decision support comes from voice telephony. Dedicated video conferencing provides more functionality.

The architecture for communications-driven DSS may involve a distributed deployment model or a centralized video conferencing deployment. The focus may be on desktop, team oriented systems, distributed "boardrooms", or web-based deployments. The major constraint when video conferencing is included in the architecture is the bandwidth and capacity of the system.

Over the years, I have used a wide variety of groupware, GDSS and conferencing products and I spent about six months working part-time on a consulting project involving interactive video. The following alphabetical list of features is based upon my experiences.

1) Agenda creation. Decision meetings are more productive with an agenda of issues and tasks. Ideally a communications-driven DSS will facilitate creating and following an agenda.

2) Annotation, participants can highlight or mark items on the shared display. In a decision meeting all participants should feel that they can contribute to the group decisions and outputs.

3) Application and document sharing. During a meeting participants should be able to easily share analyses, documents, etc.

4) Bulletin boards or forums. Exchanging ideas by posting messages to a web-based bulleting board or forum can be a useful asynchronous decision support tool.

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5) Chat or text interaction, real-time text-only conversation between two or more people online. In a decision meeting chat can create a secondary communication channel. In some situations however this feature can actually hinder decision making.

6) Meeting scheduling and management. A communications-driven DSS should help team leaders easily and quickly organize meetings. Also, the system should automatically send invitations and confirm participation of those invited.

7) Polls. During a meeting, it can be useful for the team leader to conduct a vote on a topic or gather opinions.

8) Record meetings. Communications-driven DSS should have some capability to record inputs and ideally a team leader should be able to record the entire meeting for replay and review. Ideally there should be a feature so that a meeting space can "persist" from one session to another. In some situations participants should be able to return to a virtual meeting supported by a communications-driven DSS and find their notes, files and applications as they left them at the end of the prior session.

9) Slide presentations. It is common in decision meetings for participants to make presentations and this should be possible in virtual meetings facilitated with technology.

10) Video interaction. Seeing participants during a virtual meeting expands the social interaction and can facilitate team building and acceptance of a shared decision. During video interaction, users should be able to see all participants and each user should be able to choose who to "look at" during the interaction.

11) Voice interaction. When bandwidth or cost limits the possibilities for video and voice interaction, a synchronous meeting will be more productive with voice rather than text interaction. Synchronous decision meeting software should facilitate interaction.

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12) Web joint browsing. The world wide web is a rich information source that should be available during virtual decision making meetings.

13) Whiteboard, an area on a display screen that multiple users can write or draw upon. In physical meetings, a blackboard or whiteboard is a powerful general tool for sharing information. In virtual meetings, this same capability should be a feature of a communications-driven DSS.

Vendors claim video conferencing software can raise productivity, reduce travel expenses, build stronger relationships with remote staff, and use limited resources more effectively. A communications-driven DSS should have these benefits and should reduce the cycle time for shared decision making, increase accountability, improve acceptance of shared decisions and facilitate implementation of decisions in a distributed organization.

The cost of deploying a low end synchronous communications-driven DSS can be as little as the cost of a Webcam for each participant to many thousands of dollars for more sophisticated deployments. Bulletin boards can be inexpensively deployed for asynchronous decision support. To budget deploying a communications-driven DSS, break down the fixed acquisition costs of software and hardware from the recurring and usage-based costs.

The following are some useful web links: HP Halo (<http://www.hp.com/halo/index.html>), Marratech AB (<http://www.marratech.com>), Neotechsoft (<http://www.neotechsoft.co.kr/English>), Polycom (<http://www.polycom.com/home>), Tixeo (<http://www.tixeo.com>), and WSI eConferenceCenter (<http://www.e-conferencecenter.com>).

As always your comments, questions and suggestions are welcomed.

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