

DSS Foundations: Who should participate in building decision support capabilities?

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Building decision support capabilities requires varied expertise. More complex data, parallel processing and inexpensive hardware has led to major innovations in data-driven decision support. A complex decision support system (DSS) built using either a Systems Development Life Cycle (SDLC) or a prototyping approach requires a team development approach. Once the system is developed a group may also be needed to maintain the system. Some large-scale decision support capabilities are built with teams of 2-3 people or with a larger group of 10 or more. Members of DSS development teams are drawn from many areas in an organization, in addition to the Information Systems/Technology group.

Any decision support development project requires a mix of complementary skills. Usually one does not find all of the needed skills in one person. So in most situations it is necessary to assemble the right mix of contributors for a DSS project team.

The key DSS development roles identified by Sprague (1980), O'Neil et al. (1997) and others are listed below in order of increasing technical expertise. A given individual may be assigned more than one role.

Executive sponsor. This is a senior manager who has access to other senior executives and has the influence to help resolve major resource and political problems. The sponsor is occasionally actively involved in the development tasks, like defining system requirements or application review.

Potential DSS users. This is the person or group responsible for solving the problem and making the decisions that the DSS will support. Users are often non-technical people in functional areas of a business like marketing and finance.

Project manager or decision support analyst. This person is the expert who makes the technical decisions about the software tools(s) to use, the hardware platform(s) to use, the models and/or databases to incorporate into the decision support application, and how they will be integrated with each other. The project manager is generally a person with a great deal of experience who understands both the business problem and the available technologies. We also use the term project lead for this development role.

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Technical support person. This is the person who integrates existing packages into one overall system and carries out custom programming that contributes directly to decision support functionality. His or her responsibility begins with the packages that will comprise part of the DSS and ends with a functional decision support capability for users. Depending upon the project, number of MIS professionals are involved as technical support staff including data warehouse architects, application architects and database developers. A data quality analyst is often involved in building data-driven DSS. The data quality analyst is concerned with data integration, metadata and data scrubbing.

Toolsmith or technical specialist. This role focuses on the tools and technologies that will be used in the construction of the DSS and the packages that will be combined to create the DSS. He or she is an expert on these tools and packages and their effective use. This is the person who creates underlying capabilities, often not visible to the user, but required for the technical support personnel to carry out their more user-oriented jobs effectively. Data administrators, systems administrators, networking specialists and database administrators are often consulted on decision support projects.

The composition of the DSS development team may change during the development cycle so the principle analyst or project manager needs to provide direction and motivation for the team. Also, the executive sponsor needs to maintain an active commitment to the project. Losing a project sponsor can harm and even "doom" a DSS project. Finally, the team members must have complementary skills and be committed to a common vision, purpose, goals and development approach.

A great project team can ensure that the decision support capability is used, that it is used when appropriate, that users perceive it is convenient to use the system, that the decision support system provides appropriate information/responses, and that building the capability created benefits.

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