

: *What are concerns about end-user DSS development?*

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End-user development of decision support systems (DSS) puts the responsibility for building and maintaining a DSS on the manager who builds it or supervises its development. Powerful end-user software is available to managers and many managers have the ability and often feel the need to develop their own desktop or departmental DSS. Small scale applications often meet needs faster than enterprise-wide solutions. Nevertheless, end-user built DSS create major concerns for IS/T staff. What are the major concerns?

Managers frequently use spreadsheets, like Microsoft Excel, as a DSS development tool. Using a spreadsheet package, managers can analyze a recurring decision support issue like the impact of different budget options. Following the analysis, managers then select the alternative that best meets their department's needs. Also, managers can develop tools to help them prepare bids, conduct market analyses and make financial projections and forecasts. Also, downloaded data is often analyzed using pivot tables. In some situations, managers use desktop databases like Microsoft Access to store data for specialized reporting for the job or department.

The major advantage of encouraging end-user DSS development is that the person who wants computer support will be involved in creating it. The manager/builder who controls the decision making situation, develops the DSS solution. In this discussion, end-user is an abstraction for the individual or group of persons who will ultimately use the DSS. End-user DSS development can also sometimes result in faster development and cost savings. This is especially true if the manager's time is not considered.

End-user development of complex DSS is usually undesirable. Managers are paid to manage, not to develop Decision Support Systems. At some point DSS specialists can do the work much better and much faster. Also, managers are not trained to test systems, create documentation, provide for back-up and data security and design sophisticated user interfaces. At a minimum, DSS analysts should help managers develop more complex end-user Decision Support projects. DSS analysts can help the manager build, document and test the application. Managers need to emphasize the design and capabilities of the DSS and not become overly involved with extensive DSS development.

End-user DSS development is a controversial topic. Information systems professionals have many concerns including:

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1. End-users may select an inappropriate software product as a development environment.
2. End-users may have limited expertise in the use of the product and the IS/T group may have limited resources to support end-user development.
3. Errors during end-user DSS development are frequent. Even experienced developers can make errors and end-users are likely to overlook the need for checking formulas and auditing the DSS they have developed (Panko, 1998; Panko and Sprague, 1999).
4. Unnecessary databases are sometimes developed by end-users for their DSS. Redundant databases can contain out-dated and inaccurate data.
5. End-user built DSS may have major quality issue because of limited testing and documentation. End-users often perform only limited testing of DSS they develop; and they have limited experience documenting applications.
6. End-user databases may be poorly constructed and difficult to maintain.
7. End-users rarely follow a systematic development process. Important design tasks may be ignored or incomplete.

If an organization's IS/T group gets actively involved in supporting end-user DSS development, many of the above problems can be minimized, reduced or eliminated. Packages used for end-user development can be standardized; end-users can be trained in the use of selected packages; support staff can act as consultants and reviewers; a central database can be maintained for use with end-user applications; and documentation can be encouraged by IS/T staff.

An Information Center can provide support for end-users and the Director of the Information Center may be able to manage end-user computing. Services that an Information Center might provide include: 1) software training, 2) user support including answering specific development questions, 3) installation assistance and advice about new systems, and 4) enforcement of standards and documentation requirements.

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If end-user DSS development is considered acceptable and possibly even desirable, then provide appropriate help and support.

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