: Is reengineering needed to build an effective DSS?

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No! Some specific business decision processes have serious weaknesses and problems that **can** be solved by
implementing a computerized decision support system. In other
situations, the decision process has flaws that must be significantly redesigned and in some cases the
process must be completely reengineered. Nevertheless, radical reengineering is not required to
build an effective DSS. Also, identification and recognition of the inadequacy of current
computerized decision support does not always explain decision making problems.

Hammer and Champy (1993) defined business process reengineering as the fundamental rethinking

of business processes to achieve dramatic improvements in critical, contemporary
measures of performance, such as cost, quality, and cycle time. Nevertheless we should not focus only
on reengineering decision processes; what we often need is better designed business decision
processes that use information technologies for decision support.

In a now classic Harvard Business review article, Professor Michael Hammer (1990) asserted
companies rarely achieve radical performance improvements when they invest in information
technology. Most companies use computers to speed up, not break away from, business processes
and rules that are out of date. Hammer said the power of computers can only be released
by "reengineering" work. For more information on Hammer's ideas check Hammerandco.com .

A business process is a group of activities that create value for a customer. Let's briefly
examine the process of fulfilling a customer order. Order fulfillment is a process that
consists of many activities, starting with order entry, picking products from inventory, dealing
with back orders, shipping products and dealing with returns. A number of decisions are
made during the process, but they are primarily routine and recurring. Some meta-decisions about
product quality or employee performance are also made periodically. If we reengineer this
overall process our goal is dramatic improvement in the satisfaction of the customer. We
could in turn focus only on the decision to accept or reject a product return and refund or credit
the customer's account. Focusing on this important decision may not create a dramatic improvement

in customer satisfaction, but it may be a significant improvement. Hammer argues that dramatic
improvement means a quantum leap in performance, a tenfold increase in productivity or an 80

percent reduction in cycle time. The cost and risk of reengineering may encourage managers to emphasize a more incremental redesign.

Managers can be logical and intentionally rational in their decision-making and yet make incorrect decisions. Reengineering does not guarantee correct decisions. In general, unless there is an influential champion for reengineering a broad business process, it seems most appropriate to focus narrowly on an important decision process embedded in a broader business process. The following tips for redesigning specific decision processes and developing a new computerized decision support system should help insure that decision makers will benefit from the information technology intervention.

Begin by defining the business decision process. Determine if any type of the five types of DSS can help improve decision making or reduce cycle time. In particular, determine if computerized support can help gather, organize or retrieve information systematically, present possible consequences of actions, or support collaboration. Decision makers must understand how capabilities in a proposed DSS will support decision making.

Also, the greater the time pressure to make a decision, the worse a person's decision is likely to be. Therefore, computerized decision support should help a user obtain rapidly enough information to make a high quality decision in both a high time pressure and in a low time pressure situation. In particular, any tactical DSS should help a user analyze information, help get other people involved when necessary, and help a user explore available options. A decision process analysis should look for such opportunities.

A computerized DSS should help users make timely decisions and communicate them. In general, if managers delay making a decision past some vague critical point, a decision may lose some or all of its effectiveness. If possible a DSS should provide information to help assess the urgency of a decision situation.

A computerized DSS should help a manager cope with ambiguity. Some decision makers suffer from

"analysis paralysis". DSSs should help conduct appropriate analyses, not promote excessive analysis.

A computerized DSS should enhance a decision-maker's confidence. Confident decision-makers are more likely to successfully
deal with opportunities and risks. Managers need to use their decision making skills to make the "best"
decision and then use persuasion skills to sell the decision. DSS should help not hinder these behaviors.

If possible, a computerized DSS should encourage creativity. Conclusions and solutions are often not
clearly identified in decision situations. DSS should not impose too much structure in situations that are poorly structured or ambiguous.

To develop an effective computerized decision support system of any type, managers and analysts must focus on the interface between the decision maker and the computer. A new DSS will impact the
business process, related decision making and the behavior of the decision makers. The actual impact
is primarily a function of the DSS user interface. DSS can only increase efficiency and effectiveness of decision making if the user interface is accepted and responsive to user needs. The interface must be responsive to user needs rather than only efficient. The information that will help a DSS user the most
may not result from a quick, efficient analysis or data retrieval. For example, providing predefined queries
may be efficient, but not responsive to user needs.

Finally, care should be exercised in automating tactical business decisions. In general, important or significant decisions should have some human user involvement. Business decision rules can provide
a means for reducing decision process cycle time and in some cases using rules may improve the quality
of highly structured, routine decisions. In such situations, automate the decision making and streamline
the process. Also, build some systematic review of the automated decisions into the process as a quality
and relevance check. If you automate, build a computerized decision support system to help a person track the quality
of automated decisions.

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Decision processes become outdated and need to be periodically reviewed. "Paving over the cow paths" of historic decision processes
using information technology is generally a mistake. Also, choosing radical process change is often a mistake. In many situations, incremental redesign, improving an existing DSS or introducing limited decision automation can
significantly improve decision quality and reduce decision cycle time.

As always, your comments, suggestions and questions are welcomed.

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