Abstract

Decision support is not a cure-all or a panacea. Researchers and managers often focus too much on the anticipated positive consequences of using a specific Decision Support System (DSS). Using a computerized system to support decision making can have anticipated and unanticipated negative consequences. This essay is a starting point in assessing unintended negative consequences. There are many opportunities to extend the analysis. The following two statements define issues related to negative outcomes caused by using a computerized decision support capability.

Statement 1: “The best DSS cannot overcome the limitations of a faulty (poor) decision maker. We should not force decision makers to use a DSS, we cannot insure a decision maker will pay attention to DSS responses, or consider DSS responses as part of the decision making process.”

Computerized decision support cannot completely overcome the cognitive and attitude limitations of the person who is using it. We are all “faulty decision makers”. Each of us makes some bad, wrong or incorrect decisions even when supported by a DSS. Some of us are however “better” at making "good" decisions than others. A task specific DSS is intended to increase the quality and effectiveness of a person making a specific decision or set of related decisions. A well-designed decision support capability has the potential to assist those decision makers who can and do use it. Decision support can improve a decision maker's “batting average”.

In some situations a decision maker learns while using a DSS. The decision maker learns about decision criteria, appropriate facts to consider, and/ or process issues that impact a specific decision situation. Computerized DSS encourage and promote “rationality” in decision making. The goals of a DSS are not however always achieved. So what is the correct conclusion? Companies and individuals that don't recognize the limitations of decision support and of decision makers will be surprised when a DSS doesn't improve decision making for some users. Even though it is an unintended negative consequence, some decision makers may actually be hindered by a DSS and a poorly designed DSS can negatively impact even the “best” decision maker. Coercing people to use a computerized decision support capability can lead to resentment and counter-productive behaviors.

Statement 2: “There is a decision support danger: the danger of overdependence on a decision support system (DSS), of blindly following the recommendations of the DSS, or of interacting with it in an entirely mechanical and unimaginative fashion.”

It seems plausible and even reasonable that these “dangers” can and do exist. I am not however aware of empirical research that confirms these “dangers”. We do not know how likely “overdependence” is, or if some users will “blindly follow”, or mechanically interact with some or all types of DSS. I’m assuming “overdependence” means a person cannot make a specific decision without using a DSS. For many DSS, the intent is that users will become “dependent” on using it. If decisions are improved, then the goal of training, reinforcements and rewards should be to promote regular and habitual use of the DSS. Managers and DSS users who recognize the “dangers” are sensitized to them and that makes the “dangers” less likely to occur or less likely to cause harm. DSS are intended to support not replace decision makers so users need to consciously interact with a DSS to use it effectively. A human decision maker is the ultimate authority and must take responsibility for a decision. The “dangers” raised in this question warrant our attention and certainly they should be studied. Any intervention in a complex situation can and probably will lead to results that were not intended as an outcome.

So how would you assess these statements and in particular how would you justify your answers? Can you provide any evidence to support your conclusions?