

# An Attention-Based View on DSS

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## INTRODUCTION

Commentators on decision support and decision support systems (DSS) have called for serious discussion of the discourses underpinning decision support and DSS (Huber, 1981; Stabell, 1987; Humphreys, 1998). Huber and Humphreys say that decision support and DSS discourses are critical to the advancement of the academic DSS field as well as to DSS practice, but the discourses are too seldom discussed. This article questions the influential “decision-making as choice” view. We suggest that the attention-based view of the firm (Ocasio, 1997) is a promising alternative view of organizational decision-making and that this view can be a basis for DSS design.

More than 50 years ago Herbert Simon suggested that to explain organizational behavior is to explain how organizations distribute and regulate the attention of their decision-makers (Simon, 1947). Simon was emphasizing the duality of structural processes and cognitive processes in structuring of organizational attention. More recent writings have either emphasized cognition and activity or structure. The attention-based view of the firm explicitly links structure, activity, and cognition and the view stresses that organizational decision-making is affected by both the limited attentional capacity of humans and the structural influences on a decision-maker’s attention.

The purpose of the article is twofold. First, as an alternative to the decision-making as choice view, present the attention-based view of the firm. Although the concept of attention has a long tradition in the organization and decision-making literature, it has in the last years been used to develop what is called an attention-based view of the firm (Ocasio, 1997, 2001). Attention is also focused in current management literature: “Understanding and managing attention is now the single most important determinant of business success.” (Davenport & Beck, 2001). Second, given the attention-based view of the firm, discuss what roles advanced information and communication technologies (ICTs) can play in supporting decision-making. DSS is

not a particular ICT in a restricted sense, but primarily a vision and perspective on decision-making—in this article the attention-based view of the firm—and decision support, the role of ICTs as decision support and how to realize this vision in practice. Obviously, there is room for different perspectives on decision-making and decision support and also room for different perspectives on DSS. We will discuss implications of the attention-based view for the use of DSS and decision support portals (DS-Ps) to channel and distribute the attention of organizational decision-makers. ADS-P can be viewed as a personalized front end through which a user (decision-maker) can access “all” information, applications, and services needed to perform decision and knowledge related work and activities.

The remainder of the article is organized as follows: the next section discusses some limitations of the “decision-making as choice” view and argues that it can be fruitful to explore an attention-based view of the firm as a basis for decision support and DSS. It is followed by a section presenting the attention-based view of the firm. Given the attention-based view of the firm, the fourth section focuses on designing and managing DSS. Specifically, we discuss implications for the use of DS-Ps to channel and distribute the attention of decision-makers. The final section presents conclusions and discusses future research.

## ON TRIAL: DSS BASED ON THE “DECISION-MAKING AS CHOICE” VIEW

A common view in the organizational decision-making literature is that the purpose of decision-making is to make rational choices (Brunsson, 1989, 2000; March, 1988, 1994). The “decision-making as choice” view has evolved into rational theories of choice: “Virtually all of modern economics and large parts of the rest of social science, as well as the applied fields that build upon them, embrace the idea that human action is the result of human choice. Standard theories of choice view decision making as intentional, consequential

action based on knowledge of alternatives and their consequences evaluated in terms of a consistent preference ordering” (Cyert & March, 1992).

In part, contrary to the decision-making as choice view, March (1988) argues that one of the oldest ideas in the behavioral theories of organizational decision-making is that time and attention are scarce resources. In microeconomics, this has led to the development of information and transaction cost theories where the cost of obtaining and processing information is an explicit part. Contrary to the microeconomic theories, behavioral theories of organizational decision-making have focused on developing behavioral theories of attention allocation: “That interest leads them [students of behavioral theories of organizational decision-making] to see the organization of attention as a central process out of which decisions arise, rather than simply one aspect of the cost structure” (March, 1988).

In some of the organizational decision-making literature, the attention problems are highlighted and brought into the center of theories and models. It is stressed that time and capabilities for attention are limited. Decision-makers receive too many signals and not every signal can be attended to at once or attended to at all. In many decision situations, many things are relevant to attend to and consider, but it is not possible for the decision-makers to attend to them. Because of these and other limitations, “... theories of decision making are often better described as theories of attention or search than as theories of choice. They are concerned with the way in which scarce attention is allocated” (March, 1994).

One of the insights of Simon’s perspective on administrative behavior was that to explain firm behavior was to actually explain how firms and their structures channel and distribute the attention of the firms’ decision-makers (Simon, 1947). Simon also noted that information and information systems (IS) might have a significant negative impact upon decision-makers’ attention focus: “What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention” (Simon, 1997). If information and IS (incl. DSS) can have a negative impact on decision-makers’ attention it is most likely that they can also have a significant negative impact upon organizational actions and moves and ultimately firm performance.

Attention plays also an important role in strategic renewal. Robert Simons, based on his study of how

managers use IS to drive strategic renewal, states: “While it is difficult to specify the conditions under which the identification or creation of opportunities will occur, we can state that innovations and solutions cannot be created without organizational attention. ... Organizational attention refers to the allocation of information processing capacity within the organization to a defined issue or agenda.” (Simons, 1995).

To summarize: the DSS field has been heavily influenced by the “decision-making as choice” view. Given the critique of this view and that it has had a major impact on the DSS-field, it can be argued that alternative views should be explored as the basis for the design and management of DSS. The next section presents one such alternative view: an attention-based view of the firm.

## AN ATTENTION-BASED VIEW OF THE FIRM

The main argument of the attention-based view of the firm is that firm behavior is the result of how firms channel and distribute the attention of their decision-makers. According to Ocasio (1997), the attention-based view of the firm is based on three interrelated theoretical principles: (1) *focus of attention*, (2) *situated attention*, and (3) *structural distribution of attention*. The *focus of attention principle* says that what a decision-maker is doing depends on what issues and answers the decision-maker focuses. The *situated attention principle* says that what issues and answers a decision-maker focuses, and what she does, depends on the specific context, setting, and situation she finds herself in. The *structural distribution of attention principle* says that what specific context, setting, and situation a decision-maker finds herself in, and how she attends to them, depends on how the firm’s rules, resources, and social relationships regulate and control the distribution and allocation of issues, answers, and decision-makers into specific activities, communications, and procedurals.

Based on the three theoretical principles, Ocasio (1997) presents an attention-based view of the firm as a model of situated attention and firm behavior (Figure 1) The fundamental components of the model are: 1) *the environment of decisions and actions*, (2) *the repertoire of issues and answers*, (3) *procedural and communication channels*—the firm’s situated activities, communications and procedurals, (4) the firm’s *attention*

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