

A THEORETICAL MODEL OF MANAGERIAL DECISION MAKING AND THE ACCUMULATION OF INFORMATION

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ABSTRACT

There exists a philosophical difference between how management practitioners and theorists perceive the processes by which managers gather and use information [22]. The result is a gap between the design and the use of information systems [24]. Research focused on management behavior can begin to uncover why it may be difficult to design systems for line-manager use. As a 20-year manager, I have come to appreciate managers, specifically line-managers, as a unique information user-group. This paper suggests a theoretical model that incorporates *information accumulation* into the decision-making process of line-managers. The model suggests how and why *information accumulation* is a behavior that is integrated into managerial decision-making.

BACKGROUND AND THEORETICAL FRAMEWORK

The Standish group reported that only 30% of information system (IS) projects are considered successful [24]. Schultze and Boland's [24] study supports the existence of a gap between information systems (IS) and the use of those systems as a result of management practices. They suggest that IS developers use a practice-oriented approach that focuses on what users actually do rather than what they say they do. I suggest that one of the factors that influence the *gap* is a misunderstanding regarding *information need*. Brown and Duguid [7] suggest, "people learn in response to need. When people cannot see the need for what's being taught, they ignore it, reject it, or fail to assimilate it in any meaningful way" (p. 136). I suggest that an explicit need may not always precede the learning or assimilation of new information. Brown and Duguid [7] also discuss *stolen knowledge* where information *provokes* the need. This concept of information *provoking* the need aligns with the ideas embedded in the proposed model (figure 1). Ultimately, it is suggested that the problematic situation of managers do not always offer a defined and straightforward need [13] as defined as a gap in knowledge [12]. It is often an *ongoing* need driven by the information environment [14].

Simon's [26] [27] *rational action theory* suggests that managers intend to be rational in their decision-making, but problems are simply too complex. Simon [25] recognized the limits to human computation and the natural tendency to

heavily simplify complex situations. The proposed model (figure 1) suggests that managers continually accumulate information, even *before* a problem emerges or an information need is identified. By accumulating information, the manager establishes a *savings account* of stored information that is available to be drawn upon during the decision process. This *savings account* of stored information permits the manager to simplify complex situations and to make seemingly rational decisions *without* the formal search process that is often expected by management theorists.

Mintzberg [23] and other theorists [16] [19] [20] who study manager characteristics cite the fragmented pattern of a manager's day in which he or she will focus on a variety of tasks, yet is unable to spend sufficient time with any one of them. The emerging question: how is the manager able to control his or her environment to achieve what must be achieved?

A factor that is especially important to the proposed model is that managers want to be *in the know*. They do not want to ask for help when they need it, but rather want to have the information under their own control. Ashford and Cummings' [1] work on feedback-seeking behavior helps to illustrate the resistance managers have to asking for information due to the potential "face loss" costs.

Power also plays a role in how a manager may behave on the job. I suggest that the nature of information as a commodity [11] as well as the role of power in the organization [21] will encourage the manager to personally *own* the information that he or she may need to make decisions. At the same time, managers recognize how important it is to cooperate with others at work. They clearly understand that by cooperating, their individual situations can be improved [3].

The managers' desire to be *in the know* coupled with the inherent time constraints of for-profit business environments play a role in encouraging the *information accumulation behavior* to emerge because no matter what a manager *is* doing, he "is plagued by what he might do and what he must do" [23, p. 35]. As a result, managers will spend a substantial percentage of their time in personal contact with people both inside and outside of the organization often ignoring the formal chain of command [23] [16]. Through

cooperating [2] [3] [8], socializing and politicking [16] [19] [20], managers will grab and store information that they come in contact with, even though an explicit business-need for the information does not yet exist.

The proposed model (figure 1) suggests that the behavior of *information accumulation* facilitates the manager's success in making decisions *on-the-spot* and being perceived as a manager who is well connected and *in the know*, as well as being able to work within the time constraints that are inherent in the manager's information environment.

In developing the proposed model two approaches to decision making were considered. The *systematic approach* is an operational approach that establishes a step-by-step process that can, theoretically, be followed by the manager when faced with a problematic situation. The systematic approach aligns with the *intent* of managers to be rational, thorough, and to fully understand the problem situation [26]. The concepts within the Total Quality Management (TQM) philosophy offer a manager a systematic, logical approach to identify, evaluate, and select an alternative when a decision is required [9] [10], but the systematic approach requires that the information need be made explicit and that there is sufficient time to use these tools. These systematic processes, though effective when used, are often pushed aside by managers and substituted for an *intuitive approach* to decision-making where judgment and insight [4] lead to decisions, even if there are gaps in knowledge.

The proposed model reflects how the information that is continuously accumulated by line-managers may be *intuitively* used to quickly solve problems when they emerge. The behavior to accumulate information may also be self-serving, suggesting that an individual's on-the-job self-concept and self-view can influence behavior [6] [15] [28]. An individual's self-image of being a powerful and knowledgeable manager can motivate the accumulation behavior.

And finally we consider the influence of the information environment, about which Kotter [16] identified two management dilemmas: (1) trying to figure out what to do despite uncertainty and an enormous amount of potentially relevant information, and (2) getting things done through people over which there is little control. Katzer and Fletcher also wrote about the bombardment of information that managers must face. They suggested that "even with an over supply of information, managers believe that they do not get all the information they need to do their job. The dilemma is clear: on the one hand, managers receive too much information, while on the other hand, they don't get enough of the right information" [14 p. 227].

I suggest that managers learn how to survive and successfully navigate through an environment that is

bombarded with a great amount of *potentially* relevant information by accumulating bits and pieces of both relevant and *non-relevant* information. These nuggets are stored in a cognitive savings account and can be drawn upon with ease so that action can be taken quickly when a business need does emerge and a decision is required.

THEORETICAL MODEL

From these overlapping concepts I propose a model of information accumulation. The model illustrates how the *information behavior* of information accumulation is incorporated into the decision process of line-managers. The direction of the model's flow (figure 1) begins at the bottom and moves up.

The model begins by recognizing that the collective manager characteristics (1) coupled with the corporate culture (2) influence the emerging information environment (3). The information environment (3) influences the information behaviors of the individual managers who interact within the environment. It is suggested that the roadway toward a decision can follow primarily two paths. The path that runs up the left side of the model resembles a *systematic* approach and assumes that the information need is clearly known, explicit and defined. The path that runs up the right side of the model follows an *intuitive* approach and recognizes that the information need is neither clear nor linear in nature. Emerging from the information environment is a tremendous amount of potentially relevant information.

Systematic Approach. The path within the model more *heavily* followed by theorists (systematic approach) begins with a problem and a need for information (4). The *need* will drive the managers' search for and gathering of information (7) that allows them to problem solve, define or redefine the problem (9). The cooperation (8) of individuals within the business/information environment plays a role in the search, access to, and gathering of needed information. This problem-solving activity and the acquired information will interact with the individual manager's own experience, intuition, and judgment (14). The outcome is a set of alternatives (15) from which the manager selects to make a decision (16).

Intuitive Approach. The path within the model *less* followed by theorists (intuitive approach) suggests that the availability of information, *regardless* of an explicit need for this information, is the stimulus (5) that motivates the accumulation of information (6).

Certain decisions may require a mix from both processes (intuitive and systematic). The developing theory suggests that line-managers have a greater tendency than non-managers to rely heavily on the path (intuitive) that builds a cognitive savings account from accumulated information. This path also benefits from the cooperation of other actors as well as the personal, conscious, or unconscious goals that drive the manager's need to be *in the know*. Non-managers, due to the nature of their role, require less dependence on the cooperation of other actors to gain access to the information they need to carry out their individual roles in the organization. Also, the socializing and politicking driven by and influencing the need to be perceived as being *in the know* is reduced. The non-manager's objective is to seek information for problems that need to be resolved.

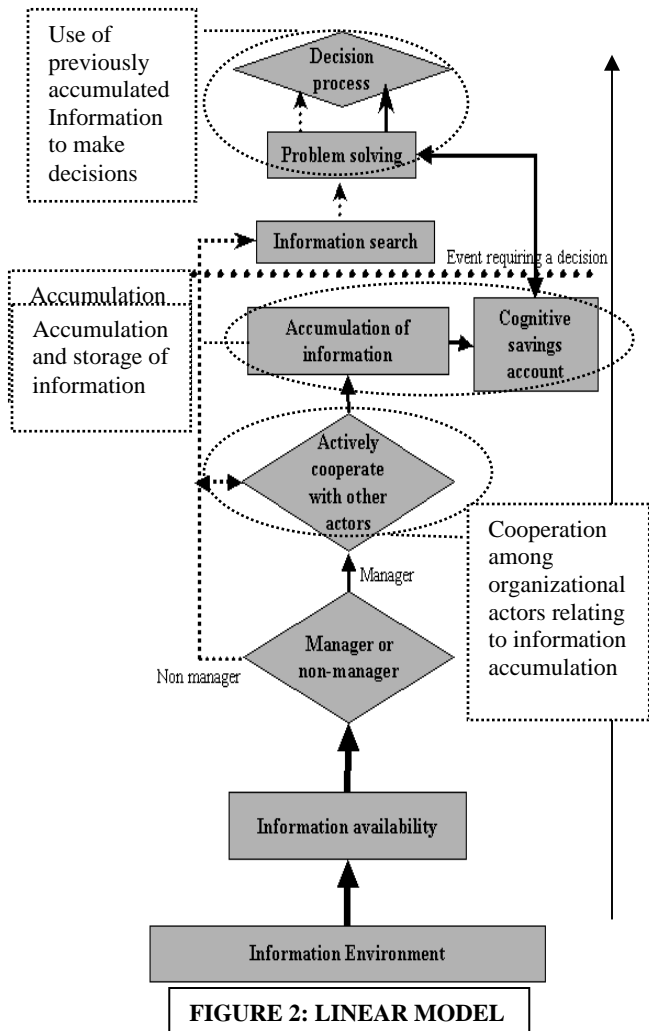
FUNCTIONAL MODEL

From the larger theoretical model (figure 1) a more streamlined model was constructed that begins to permit hypothesis generation (figure 2). Once again the model flow starts at the bottom and moves up. From the information environment, information emerges. The employee's role within the information environment (manager vs. non-manager) will determine what path he or she takes more often relating to information available on-the-job.

The path of solid arrows represents the suggested path of line-managers and the dashed path of arrows represents the path of non-managers. It is suggested that line-managers will have a greater tendency to actively cooperate with other actors in the organization to *accumulate* available information although the need for that information has not yet been made explicit, and to store this accumulated information in a cognitive savings account. Once an event emerges (dotted line) that requires a decision, the line-manager will draw from the cognitive savings account to solve the problem, and move into the decision process. There is no active search for information to close any knowledge gaps.

The non-managers, on the other hand, will have a greater tendency to actively search for needed information after the event requiring a decision occurs. The cooperation with other actors in the organization will occur to a lesser degree than with line-managers.

From this model three areas initially emerge that can lead to hypothesis generation and testing that may quantitatively illustrate the differences between managers and non-managers, (1) cooperation among organizational actors relating to information accumulation, (2) the accumulation of information on the job, and, (3) the use of the previously accumulated information to make decisions.



CONCLUSION

This model can help researchers consider the information behaviors of a unique user-group – line managers. Different management styles may certainly exist that can define a range of behaviors for the *accumulation of information*. For example, certain management roles may have a greater tendency as result of the mix and influence of the corporate culture, the information environment, and the characteristics of managers, to *accumulate information* for which there is no explicit business-related need, while others managers may have a greater tendency to seek information primarily to solve problems while doing a better job of filtering irrelevant information. Although individual differences exist, it is suggested and embedded in this model that the manager user-group overall will behave differently than non-managers interacting within the same business environment.

The high-level prediction is that this tendency to accumulate information and store it in a cognitive savings

account enables managers to behave as they do: making rapid decisions, jumping from task to task and problem to problem [5] [23] [16] [17] [18], foregoing the formal information search process that other professionals and non-managers may take when seeking to solve a problem, and ultimately thriving within the complex information environment of a for-profit business.

Simon [26] stated that the study of organizations should focus on the gap between the rational and non-rational aspects of human social behavior. This model illustrates one viewpoint of how managers maneuver through and survive within the complex business environment.

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