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Decision-making's impact on organizational learning and information overload ☆

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ABSTRACT

Although an abundance of academic literature positions organizational information processing as antecedent to decision making, little attention is paid to the possibility that decision making can be antecedent to certain elements of organizational information processing. Specifically, does the decision making process impact the type of organizational learning that takes place? Do different approaches to decision making alter the amount and variety of information made available to the organization, that is, the level of information overload? This paper examines incremental and comprehensive decision making to understand the effects of different decision making types on organizational learning and information overload. Incrementalism suggests that decision making should take place in small steps or increments. This approach analyzes only a few scenarios to make decisions resulting in few, if any, major organizational changes. However, comprehensive decision making requires the consideration of all possible scenarios and potential outcomes, resulting in a major overhaul of traditions and procedures within the organization. Consequently, each decision making approach has a different impact on organizational learning and information overload.

1. Introduction

Slater and Narver (1995) define organizational learning as the acquisition of new information by organizational members resulting in the generation of new knowledge or insights which ultimately affect the behavior of organizational members. Organizational processes that result in sharing of knowledge, assumptions, and beliefs among organizational members represent another definition of organizational learning (Shrivastava, 1983). In acquiring new information that propels organizational learning, the amount of this new information at some point becomes excessive and overwhelming, reaching a level of information overload. Bawden et al. (1999) argue that information overload "…occurs when information received becomes a hindrance rather than a help when the information is potentially useful" (p. 249). For example, the growth of many technology firms was so dramatic during the dot.com era that it became difficult to manage the abundance of new information (Reibstein, 2002).

Business decision-making affects the method in which organizational learning occurs. In addition, different types of business decision making have different effects on information overload. These different effects are a result of: (1) volatility in business markets, necessitating quick response to changes in the marketplace (Eisenhardt, 1989; Bourgeios and Eisenhardt, 1988; Steiner, 1979); (2) competitive pressures that require continuous scanning of the environment (Miller and Toulouse, 1998; Eisenhardt, 1989); and (3) uncertainty, which is a hallmark of contemporary business interactions. The gap between information needed and information that is available illustrates ways that uncertainty manifests itself in the marketplace (Fredrickson and Mitchell, 1984; Galbraith, 1973). Because information processing is an important aspect of decision making (Wu and Cavusgil, 2006; Saaty, 1990), this paper addresses the relationship between two organizational information processing concepts, organizational learning and information overload, with respect to their roles in business decision-making. Furthermore, business decision making affects organizational learning and information overload differently than political decision making, particularly with respect to the development of alternative options, as well as the number of alternative options that become part of the decision process.

Political decision making is built on the concept of incrementalism, or as Charles Lindblom states, the process of "muddling through" (Lindblom, 1959; Lindblom, 1979; Weiss and Woodhouse, 1992). The basic idea of incrementalism argues that decision making is more productive when taken in small steps, or increments, rather than initiating dramatic changes in policy; synoptic or comprehensive analysis are terms that describe dramatic policy changes (Lindblom, 1979; Weiss and Woodhouse, 1992). According to Lindblom, incrementalism, or "muddling through," is a more realistic approach to decision making because it takes into account the limitations of human cognitive abilities, as well as resource limitations that exist in addressing complex policy problems (Lindblom, 1959; Lindblom, 1979; Woodhouse and Collingridge, 1993; Simon, 1955).

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However, critics of incrementalism contend that the incremental approach is not appropriate in all policy decision making cases. They point to situations where incrementalism actually impedes decision making, suggesting that comprehensive analysis provides the best method to address certain policy circumstances (Schulman, 1975; Nice, 1987; Lustick, 1980; Birkland, 2005). For instance, according to Schulman (1975), a comprehensive decision making approach was the most appropriate for developing the 1960s space program due to the nature of this vast and complex endeavor. Birkland (2005) agrees, suggesting that an incremental decision making approach would have been less effective in the development of the space program. Birkland (2005) also contends that in times of war (for instance, the attack on Pearl Harbor in 1941), countries adjust economic and diplomatic policies from an incremental to a comprehensive approach in order to respond to the urgent need to substantially increase the military on short notice.

Incrementalism is a well known concept in the business academic literature even though its roots lie in the policy discipline (Idenburg, 1993; Hallgren and Wilson, 2007; Fredrickson and Mitchell, 1984; Miller and Toulouse, 1998; Eisenhardt, 1989). While searching several scholarly databases, very few academic writings were found that examine the information processing consequences of decision making. To that end, this paper addresses the gap in the literature with respect to organizational learning and information overload as consequences of incremental or comprehensive decision making.

The next section reviews the literature on incremental and comprehensive decision making in both political science and business. Comparisons are made as to how each of these two disciplines view the concepts of incrementalism and comprehensive analysis. Following this discussion is a review of organizational learning and information overload, specifically focusing on the relationship between these concepts and different types of business decision-making. Propositions address the impact of different types of decision making on organizational learning and information overload.

2. Incrementalism: policy versus business decision making

Though political science is the birthplace of incrementalism, this concept now transcends the political science realm and appears in such varied disciplines as management, information science, strategy, economics, information technology, and project management (Fredrickson, 1984; Agosto, 2002; Hough and White, 2003; Hallgren and Wilson, 2007; Ansoff, 1991; Eisenhardt, 1989; Simon, 1955). This section compares incremental and comprehensive decision making from their origins in political science, with the interpretation of these different decision making approaches in the business literature.

The classic view of decision making in political science supports "muddling through," or incremental analysis (Lindblom, 1959; Lindblom, 1979). Bendor (1995) agrees, suggesting that radical policy changes are inferior to incrementalism. The bias towards incremental decision making in public policy stems from historical anecdotal evidence that suggests greater organizational achievements when you don't "rock the boat," such as advocating major policy changes all at once. Instead, incrementalism focuses on a series of small steps which, taken in totality, ultimately results in substantial policy changes (Lindblom, 1979; Weiss and Woodhouse, 1992; Quinn, 1982).

Simon (1955), another supporter of incrementalism, introduces a model of rational choice. In this model, decisions result from expected or desired payoffs under various alternative scenarios. Simon's model incorporates the "aspiration level" as the point at which the decision maker ends the search, by accepting the first option that exceeds the pre-determined aspiration level (Bendor, 1995). On the other hand, according to Knott et al. (2003), "the concept of incrementalism adaptation entered the social sciences literature because empirical observations of behavior did not fit with a fully rational approach to decision making" (p. 358).

Lindblom (1959, 1979) divides incrementalism into three categories: The first is *simple incremental analysis*, which puts the strongest limitations on alternative policies, allowing only very small changes to current policies. The second category of incrementalism is *disjointed incrementalism*, which includes simple incremental analysis as its most constrained version. This category of incrementalism, disjointed incrementalism, limits analysis to a few familiar policy alternatives, exploring some of the potential consequences of an alternative under consideration by utilizing a series of trials, errors, and revisions (Woodhouse and Collingridge, 1993). Historical information guides decisions in this category, along with standard operating procedures and projections that center around the current state of affairs (Knott et al., 2003). The third category of incrementalism is *strategic analysis*, or "bounded rationality", which Lindblom (1979) describes as an "… informed and thoughtful choice of methods of problem simplification" (p. 519). According to Forester (1984), in this version of incrementalism the complexity of each circumstance determines the strategy that decision makers adopt.

Despite its advantages, there are critics of the incremental approach in public policy (Dror, 1970; Schulman, 1975; Nice, 1987). Since the 1970s a growing number of public policy scholars actively support the comprehensive view of decision making (Schulman, 1975; Lustick, 1980).

Comprehensive, or synoptic decision making refers to efforts that address complex problems by considering all possible alternatives and outcomes simultaneously (Schulman 1975; Fredrickson and Mitchell, 1984). Lindblom (1959, 1979) labels this form of decision making as the "root" or "big-step" method, while Schulman refers to comprehensiveness as nonincremental or indivisible policies. According to Lindblom (1979), disjointed incrementalism or strategic analysis methods highlight the unattainable goals of comprehensive decision making. Lindblom (1979) asserts that comprehensive decision making results in "…ill-considered, often accidental incompleteness," whereas disjointed incrementalism and strategic analysis represent "…deliberate, designed incompleteness…" (p. 519). On the other hand, Schulman (1975) and others contend that although the occurrence of policies requiring a nonincremental approach is infrequent, these policies would fail in an incremental or piecemeal approach (Nice, 1987; Lustick, 1980; Birkland, 2005). Etzioni (1967) suggests that incremental steps often don't have a specific direction, and many times will go into several directions concurrently. Dror (1970) summarizes this view by offering the example that, despite centuries of discord, formation of the State of Israel was a dramatic demonstration of comprehensive policy making. Dror (1970) further contends that although cases that require a comprehensive approach are scarce, the importance of such situations should not be lost.

The approach to decision making in business practice has proponents of both incremental and comprehensive decision making (Milburn et al., 1983; Bourgeios and Eisenhardt, 1988; Fredrickson and Mitchell, 1984; Eisenhardt, 1989; Agosto, 2002). However, questions remain as to whether an incremental or comprehensive approach provides the best solution for business decision-making. Examples in the literature imply that incremental decision making works better in more stable, predictable environments or those where the consequences of incorrect decision making are not severe. In general, but not in all cases, comprehensive decision making is more appropriate in fast-moving, unstable business environments.

Other references to incremental decision making include "groping along" (Behn, 1988); "bounded rationality" (Agosto, 2002); "strategic simplicity" (Miller and Toulouse, 1998); and "mini-muddling" (Hallgren and Wilson, 2007). Previous scholars empirically test incrementalism in various business situational contexts. For instance, Hallgren and Wilson (2007) observe the impact of incremental decision making when unexpected interruptions occur in the