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The role of information in strategic decision-making

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ABSTRACT

Aspects of the role of information in strategic decision-making by executives in industry are hardly ever mentioned in management research publications. We therefore investigate in this paper the way information is obtained, analysed, judged and applied by executives in industry that have to take strategic decisions. We interviewed executives from thirteen companies in The Netherlands and in Germany about the stages in the decision process that they followed in thirty two recent decisions they had to make.

We found that executives that follow a rational approach collect and use ample information in a structured decision-making process passing through a number of distinct phases in time. In this process, information plays a crucial role in reducing uncertainty. Over all discussions held, the aspect of the quality of the information used by the board was stressed. We could only obtain circumstantial evidence of changes in the decision making process caused by developments in new information acquisition and analysis methods such as use of the Internet becoming common practice. But we can affirm that with more relevant information available, discussions in the boardroom on issues affecting the choices and alternatives can now be better controlled and rational decision-making is thus facilitated.

1. Introduction

Information on the internal and external environment of the organisation is a crucial factor in the process of decision-making by executives in industry. Precisely there, in the availability of information, a revolution has taken place in recent years with new information acquisition and analysis methods such as the Internet becoming common practice. In a previous publication (Citroen, 2009) we have analysed the processes of strategic decision-making and the use of information thereby. In this article we concentrate on this last aspect, namely what information is required and how this information is used by company executives during their strategic decision-making processes.

1.1. Information use in strategic decision-making

Many studies in strategic management take the position that executives reach strategic decisions based on a structured process of careful consideration of circumstances, alternatives and consequences. This approach is known as a ‘rational process’. Information on matters such as competition, markets, technologies and trends in the societal environment affecting the organisation is used as a basis for the judgement on the implications of feasible alternatives for the decision to be made in such a rational process. As such, the use of information contributes to the reduction of uncertainty.

However, aspects of the role of information in the decision-making process receive little attention in management research. For that reason we investigate in this study whether we can add a new viewpoint to this field, specifically that of the role and value of modern information resources and access as a prerequisite for the structuring of the strategic decision-making process. We observe in detail the use of information during the process of a number of actual recent strategic decisions taken by executives in the chemical and food industries. The emphasis is on the process, not on the substance or quality of the resulting decisions.

2. Literature review

2.1. A rational approach to decision-making

An important theme in research into strategic decision-making concerns the process or approach that is followed in making a decision and the structure of this process. In a rational decision-making process, executives reach strategic decisions without a prejudiced opinion about the eventual decision and only after a structured process of careful consideration of circumstances, alternative lines of thought and consequences of the decision made. Information on matters such as competition, markets, technologies and trends in the societal environment affecting the organisation are needed to judge the implications of the feasible alternatives for the decision

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to be made (Baum & Wally, 2003; Corner, Kinicki, & Keats, 1994; Hammond, Keeney, & Raiffa, 2006; Noorderhaven, 1995, p. 29; Nutt, 2005; Weirich, 2004, pp. 97, 211). Making rational decisions thus presupposes that information is available that enables an executive director or a board of directors to make the best possible decision under the circumstances. Rationality involves choosing which information to order and analyse and which not to (Choo, 2006, p. 104; Citroen & Hooghoff, 2003; Hussey, 1997, p. 18; Schwenk, 1986). The structured approach of the decision-making process is characterised by the fact that the decision is reached after dealing in due consideration with a number of distinct phases that are programmed in time and that can be observed and studied in a rational and objective way.

Conditions for such a rational and structured process have been formulated by several authors, e.g. Drucker (1967), Mintzberg, Raisinghani, and Théorêt (1976), Nutt (1999), Koopman and Pool (1997, pp. 7, 17) and Johnson, Scholes, and Whittington (2005, pp. 42, 385):

1. the issue or problem is properly identified and the objectives of the decision are well defined by the decision-makers,
2. the decision-makers actively search for information on potential alternatives,
3. they carefully weigh the advantages and the disadvantages of these alternatives and the chances of success for each of them,
4. even when a preliminary solution is in sight, new information or expert judgement is accepted, studied and analysed, even if it contradicts earlier ideas and preferences,
5. before a final decision is made, positive and negative consequences of all alternatives are re-examined,
6. provisions for implementation of the decision are prepared, (including a contingency plan that might be required if the implementation fails),
7. a procedure is defined for follow up of the decision to judge if the purpose has been achieved or has to be reconsidered.

In some cases that can still be considered a rational process, not all of these conditions have to apply fully, e.g. when only one valid option for a decision can be identified.

2.2. Information as a factor in strategic decision-making

In management research publications the role of information in the process of decision-making is seldom recognised, discussed or analysed as such, probably because management information is considered a production factor that is readily available and its accessibility is 'taken for granted' in many studies on company performance. Although input of information is often mentioned in order to be able to consider parameters such as the business environment, internal and external issues and changing conditions during the decision-making process, information is seldom seen as a determining factor. As a consequence, the characteristics of information in strategic management such as the quality, the sources and the actual use of available information during the process of strategic decision-making are not recognised as important issues (e.g. Drucker, 1973; Hammond et al., 2006; Mintzberg, 1973; Porter & Millar, 1985; Porter, 1985; Simon, 1960).

Examples of authors that stem from the information management field that treat the subject of information for management decisions are Allen (1990), Meadow and Yuan (1997), Choo (2002, 2006), Rowley (1998), de Alwis, Majid, and Chaudhry (2006), Aharoni et al. (2010) and Kroll and Forsman (2010). Choo (2002, p. 8) states that "*An organization behaves as an open system that takes in information, material and energy from the external environment, transforms these resources into knowledge, processes and structures that produce goods or services which are then consumed somewhere in the world. An organization uses information strategically to make sense of changes in its setting, to create new knowledge for innovation and to make decisions about its course of action*".

The subject matter of the information that is relevant to strategic decisions consists of such items as internal organisation, market structures, competitors, customers' attitudes, technologies, regulations and public affairs. For these areas, opportunities, threats and risks of the market place and the business environment, best practice, and most importantly, current developments and trends in those features are essential (Auster & Choo, 1996; Brenner, 2005; Citroen & Hooghoff, 2003; Citroen & van Loen, 1994; Eisenhardt & Martin, 2000; Li, Yatrakis, Turner, Yen, & Hsu, 2003; Mintzberg, Ahlstrand, & Lampel, 1998; Nonaka, 1991; Oppenheim, Stenson, & Wilson, 2003). Formalised routines improve the flow of information throughout the organisation, including information to strategic decision-makers and thereby speed up strategic decision-making according to Baum and Wally (2003) in their study of firm performance.

A rational approach to decision-making does not by itself imply that every titbit of information must be located, accessed, retrieved, analysed and utilised before a decision can be reached as there are limits to the amount of information that can be collected in a rational decision-making process. Founding a theory or a decision on truly complete information is impossible in principle because this would require "*infinite regress, whereby every argument makes an inference from assumptions and verifying each assumption calls for additional information*" (Popper, 1935, s.4, 1963, p. 21). Accordingly, there are always limits to the amount of information that can be collected that is relevant to an issue, limits of resources needed for the search process and limits to the time available. Utility maximisation and awareness of diminishing returns stipulate that equilibrium be reached between the cost and the time of obtaining additional information on which to base the decision-making process and the expected benefit of this additional information in order to prevent a regress about 'deciding how to decide' (Noorderhaven, 1995, p. 29; Weirich, 2004, p. 98; Winter, 1964 in Weirich, 2004, p. 221).

2.3. Information and communication technology (ICT)

As computers find applications for practically every business process in the present-day company, this evolution has had a great influence on the way company executives need to operate nowadays. If we restrict ourselves to the more strategic issues, the decision-making process has completely changed over the last decade by the way information has become available and travels over communication services that are common now. The potential influence of ICT on strategic decision-making can be summarised as (Aguila-Obra del, Padilla-Melendez, & Serarols-Tarres, 2007; Hedelin & Allwood, 2002; IBM, 2008; Kendrick, 2007; Laudon & Laudon, 2006, pp. 21, 29, 457; Li, 2002; Molloy & Schwenk, 1995; Sajor-Wood, 2000; Teng & Calhoun, 1996; Ticoll, Shuman, Twombly, Finken, & Yeo, 2001):

- accelerating the process and thus being able to use the assigned time in a more efficient manner and concluding the decision-making process before the set deadline,
- diminishing uncertainty by enabling the evaluation of more decision alternatives,
- better forecasting accuracy and decision-making time horizon,
- more unanimous decision-making processes through better internal and external communication and thus
- being able to conclude an accurate decision-making process where previously this decision had to be postponed because of lack of information.

There is little research into the use of the Internet as an information source for strategic decision-making. Sajor-Wood in her