

SECTION 3. General issues in management

Marcus Selart (Norway), Erkki Patokorpi (Norway)

The issue of design in managerial decision making: Leadership and human resources perspectives

Abstract

It is argued that the design of decisions is a process that in many ways is shaped by social factors such as identities, values, and influences. To be able to understand how these factors impact organizational decisions, the focus must be set on the management level. It is the management that shoulders the chief responsibility for designing collective actions, such as decisions. Our propositions indicate that the following measures must be taken in order to improve the quality of organizational decisions: 1. The identity of the people, involved in organizational decision making, affects the quality of decisions and should be taken into account in the design of decisions. 2. The decision maker or designer of decisions should engage the members of an organization to create a shared vision. 3. Getting the members of an organization to express and share common values should improve the decision making process. 4. Being able to socially influence the members of an organization, or other stakeholders involved, as well as letting them participate in the process, should improve the quality of decisions.

Keywords: organizational decision making, uncertainty, innovation, collaboration, social interaction, shared visions, shared values, social identity, social influence.

JEL Classification: M1, M12.

Introduction

Organizations of today are in great need of improving their skills when it comes to decision making, and especially the designing of decisions. By the designing of decisions is meant the preparatory stages of decision making (Nutt, 1984), like, for instance, sense making, the negotiation of social roles, rules and practices, and that designers may not be the formal decision makers but they are designing decisions for others. Traditionally, the relationship between design and decisions has been restricted to the design of decision support systems (e.g., von Winterfeldt & Edwards, 1986; Lewis, 1993). Decision support systems are supposed to provide organizations with one optimal or few best solutions to well-structured problems (e.g., the reordering of supplies). Decision designers are thus mainly occupied with turning ill-structured problems into well-structured ones (Dorst, 2006). The task of the decision maker tends to be reduced to a choice between ready-made alternatives, with no or little consideration of social factors. However, we have lately seen an increased attention towards social factors in decision making by companies on the cutting edge. Moreover, researchers in decision analysis acknowledge that the understanding of social processes is vital for any successful decision analytic effort (Keeney, 1992; Weick, 1993; 1995; Beckert, 2002; Dequech, 2001). As Armand Hatchuel (2001) argues processes, such as social identity, social values, and social influence have to

be taken into account to give a more realistic picture of decision making in organizations. Decision making is a form of collective action, and thus something that should be professionally designed by the management (Hatchuel, 2005).

The disposition of the paper is as follows. First, we give a summary of the theoretical development in the area of organizational decision making. This is followed by a brief section that explains reasons for increased social embeddedness in organizational decision making. Then we illustrate some of the leading arguments in favor of a social process perspective on the issue of designing decisions. Next, we discuss how the design of decisions may be perceived in relation to the above-mentioned three central concepts related to social interaction. Finally, we outline a couple of central implications for management.

1. Limited rationality and decision making

There is an ongoing debate on organizational decision making implying that the nature of decisions in organizations is only loosely coupled with what rational choice models prescribe (March, 1988; Klein et al., 1993; Klein, 1998). It has been suggested by Koopman and Pool (1991) that five basic models exist in the field of organizational decision making. These are: (i) *The Rational Choice Model*; (ii) *The Information Model* (Simon, 1947, 1957; March & Simon, 1958); (iii) *The Structural Model* (March & Simon, 1958; Quinn, 1980); (iv) *The Garbage Can Model* (Cohen, March & Olsen, 1972); and

(v) *The Participation Model* (Vroom & Yetton, 1973; Vroom & Jago, 1988). The first three models build on the application of principles of rational choice to organizational decision making, representing a fairly mechanistic approach to rationality. The latter two models to a higher extent highlight the “irrational” nature of how decisions happen in organizations and also focus more on fundamental group aspects. Smith (1997) goes as far as stating that it is not possible to formulate stable models of the decision process due to the great complexity and variability of managerial decision processes.

All the above-mentioned five models basically assume that what is not in line with the hypotheses of rational individual choice is something less than rational. Although the last four of these models seemingly make room for how people in real life make decisions, they hold on to the *economic man* as the final measure of human rationality. According to Weick (1995), in most cases rather than suffering from ignorance, the decision makers face confusion and need to agree on what is the issue (i.e., the question or the problem) in the first place. As has been stated by Collingwood (1939), questions are logically prior to answers. No amount of information would make our choices rational in the sense of complete rationality when there is either confusion about the issue or fundamental uncertainty. On the contrary, more information only adds to the confusion. The overall implication is that the problem should not be formulated by decision support technology but has to be collaboratively framed, bracketed and punctuated, that is, socially constructed (Mongin, 2002; Egidi, 2005; Lagueux, 2004; Kechidi, 1998; Weick, 1995).

Many scholars today (e.g., Weick, 1993; Hatchuel, 2001a; Beckert, 2002) agree that the heart of decision making in organizations, perhaps, not only lies in how the expected utility of different alternatives is calculated. Much evidence points towards the fact that a central feature of the organizational decision process seems to be the fulfilment of identities and the following of rules and routines. In other words, social interaction is a very important element of decision making. Everyday decision makers are often unaware of this fact.

2. Uncertainty, innovation and collaboration

Beckert (2002) discusses three action situations (innovation, action under uncertainty and collaboration) in which rational actors cannot reach utility-maximizing results because reaching superior results entails social embeddedness. By social

embeddedness is meant participation in non-market mechanisms of coordination. The main reason for increased social embeddedness is that the economy, we live in today, is extremely innovation-intensive. Forms of knowledge-building and value formation are subservient to the changing tastes of consumers and the entrepreneurial efforts to comply with them by differentiating products and services. The innovation process has spread out across the whole spectrum of economic structures and actors (Hatchuel et al., 2002; see also Dequech, 2001): “Thus, in the context of innovation-intensive capitalism, Knowledge Management can no longer be seen solely as a process of bringing in new specialists; it must also make provision for changes to collective forms of decision making and prescription within the organization” (p. 12/20). Consequently, innovation, uncertainty and collaboration intermingle, forcing enterprises to develop their decision making processes. Managing social interaction becomes a key factor in organizational decision making.

3. Social interaction as a key factor in organizational decision making

While many higher level aspects of individual cognition are discussed in Simon’s (1996) Design Theory, the issue of social interaction, as a key resource for the design of decisions, remains unexplored (Dequech, 2001; Buskens, 2000; Diekmann and Lindenberg, 2000). According to both Weick (1995) and Hatchuel (2001a; see also Dequech, 2001), it is not sufficient to only look at the design of decisions from the point of view of individual cognition. The design process is, in many ways, also a social process.

Another closely related and important feature of decision processes is to make sense and establish order. It has been suggested by Weick (1993) that organizational researchers should include the aspect of sense making when they analyze decisions. The sensemaking perspective sensitizes us to perceptions, conceptions and practices as social constructs. In an organizational setting the inescapable self-reflectiveness of social life produces self-fulfilling prophecies. These make the way we think, talk and behave towards an object a part of the object itself. In other words, we change the social reality by changing our shared ways of seeing it (Weick, 1995). Sense making is pivotal, especially in the preparatory stages of decision making, when problems or issues are created. In line with Weick (1993), March (1999) is of the opinion that decision making and sensemaking may be looked upon as complementary processes. Sense making is both an input to and a product of the

decision process since decisions shape meanings and are also shaped by them.

As noted by Hatchuel (2001a), the sense making dimension is lacking in Simon's (1996) Design Theory. The bottom line message in Simon's theory is that the design of decisions and creativity should be regarded as special forms of problem solving. However, decision makers are unable to fully control the design process since the impact of future social interaction is difficult to foresee. Hence, the expandable nature of rationality, due to this type of social uncertainty, must not be neglected. Clearly, in many cases designers of decisions are not the "clients" of their own choices but design decisions for others. They must, therefore, constantly look for new forms of social interaction in design, involving end users (i.e., formal decision makers) or other stakeholders. The role of social interaction in the design process is, according to Hatchuel (2001a), twofold. It is both a resource and a designable area.

On the one hand, the design of decisions is dependent on the information and education, required from the "client" (Suh, 1988), which may, thus, be regarded as a resource. On the other hand, economic and organization theories suggest that value creation and creativity are dependent on organizational form and the social interactions that shape economic transactions (Hatchuel, 2001a). Thus, social interaction itself also qualifies as a designable area. The concept of "expandable rationality", which has been coined by Hatchuel, applies to decision situations, for which the possible operations (i.e., choices) cannot be counted. This is often the case in organizational decision situations, as opposed to decision situations in games with specified rules, like chess.

Simon, Weick and Hatchuel's major differences of opinion related to decision making may be presented schematically as follows:

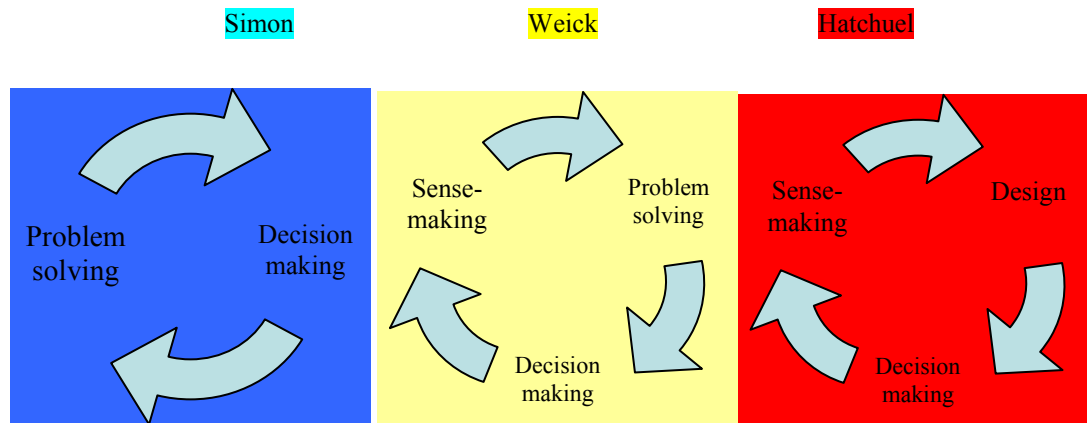


Fig. 1. Conceptual frameworks of the decision making process

The crude diagrams above highlight the fact that Simon starts with problem solving, reducing decision making and creativity to special forms of problem solving. Weick, on the other hand, adds sense making as an integral element of organizational decision processes. Sense making is added because in real organizations problems do not present themselves ready-made but they are socially constructed. Hatchuel replaces problem solving with design as a crucial initial step in decision making. By introducing the concept of "design", Hatchuel is capable of better catching decision making situations in which something radically new is being collectively created. Thus, he refrains himself from making decision making equivalent with simply selecting from a set of already ideally or factually existing alternatives.

According to Tellefsen and Love (2002b), there is an interesting relationship between design of decisions

as a social process and what they refer to as "a constituent market orientation" (see Figure 2 below). When design and associated social processes are undertaken in a business network, success depends on the orientation towards the needs of multiple constituents. Where constituents' needs are not met, people will exit the network, whose social legitimacy is then reduced. Research in this area indicates that it is important for members of an organization to: (i) know the constituents, and how they affect and are affected by one another, and how they value solutions; (ii) develop a common purpose and a common set of solutions that satisfy the diverse wants, goals and agendas of every constituent. The design of a decision must therefore be regarded as a response based on market oriented learning, and that poor market oriented learning results in unsuccessful design.

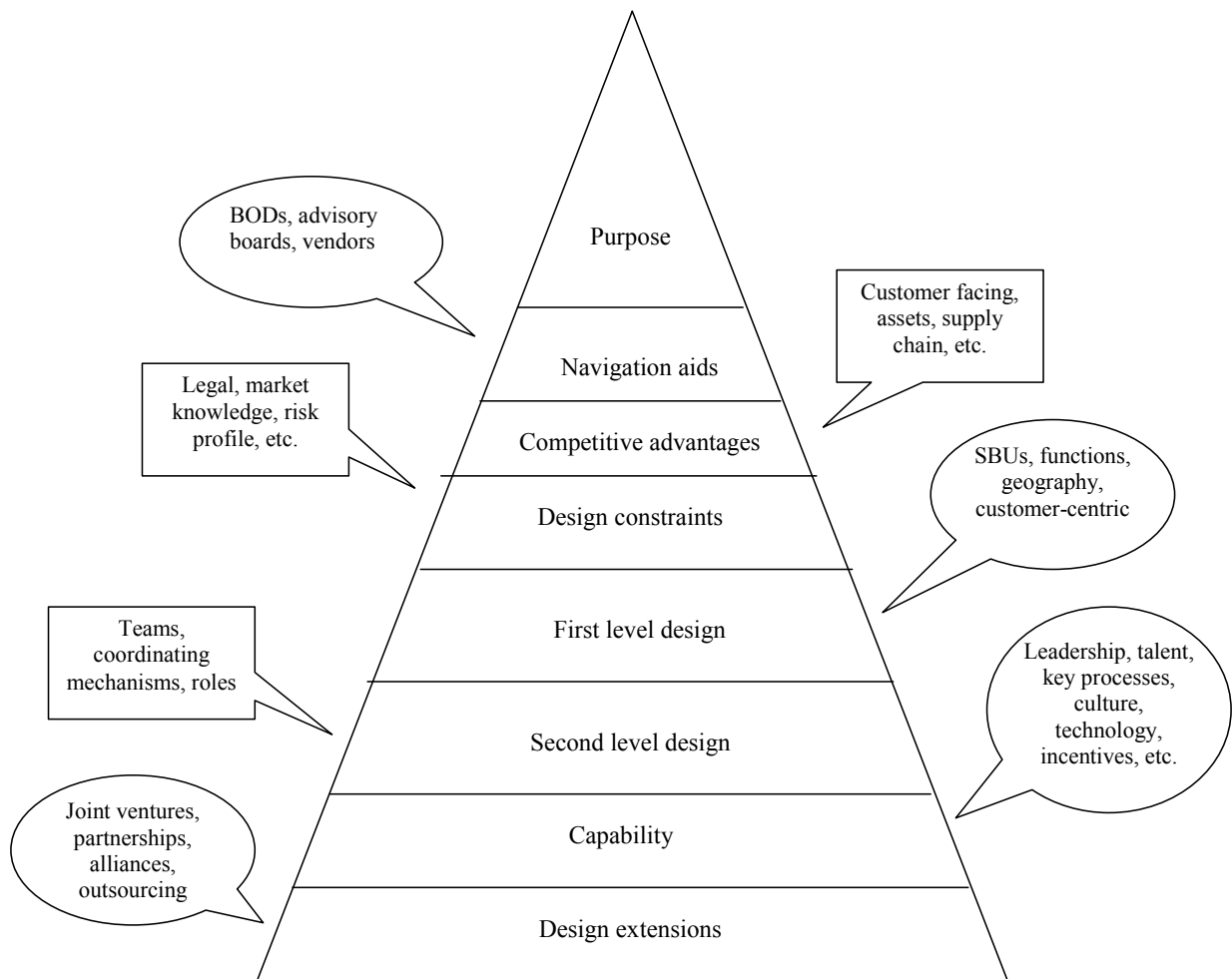


Fig. 2. The design pyramid in marketing situations

The key message to management is, therefore, that to be able to create a winning design process for their company, it is not enough only to offer problem solving procedures (e.g., web sites, journals, data banks, chat rooms and analyses of clients' judgments). Management must, in addition, also propose measures of design assistance (e.g., team working, consultancy, artists, experts etc.) in order to capitalize on the fact that the design process is both a resource and a designable area (Hatchuel, 2001b). This applies to areas such as participative design, collaborative design, computer supported collaborative work, group decision support services, and virtual teamwork (Tellefsen and Love, 2002a). Modelling design, as a social process, will also provide a basis for: (i) improving the way designing is undertaken by individuals and groups to achieve strategic organizational outcomes; (ii) improving management understanding about the ways expertise can be better used to gain competitive advantage and organizational security (Tellefsen & Love, 2002a).

4. Social identity

Neuroscientists (Camerer et al., 2004; Camerer et al., 2005; Singer and Fehr, 2005) believe that we are hardwired to read other minds. We all have a natural capacity to identify with others. It does not automatically follow that we equally and universally do so. Generally, it matters a lot what people think of us because it affects our sense of who we are. Identity matters, and has an impact on us and on the whole process of decision making.

According to March (1994), identity and rule following are key aspects of the organizational decision process. An organization is an arena where identities and rules are exercised. Identities are evoked, rules are followed, and results are monitored. First, identity may be regarded as a matter of "self", that is, something which primarily is discovered or created by the individual. Second, social identity theory (Abrams & Hogg, 1990; Tajfel & Turner, 1979) has begun to play a major role in understanding small group processes. It has, for instance, been suggested that making group identity salient has an impact on the social influence

processes associated with group consensus (Hogg, Turner & Davidson, 1990). When membership in a particular group becomes salient, the self becomes partly defined by the group. Identities may, therefore, also be regarded as arising from the process of socialization into socially defined relationships and roles. This implies that identities primarily are adopted or imposed. The standpoint, thus, suggests that actions are regarded as arising from learned obligations, responsibilities, or commitment to others. According to March (1994), both perspectives are taken in most organizational cultures, although the emphasis may differ from case to case. However, he stresses that it is not primarily the intentions or identities of individual actors that shape the decision processes. It is rather their interaction in terms of the relationship between personal commitment and social justification.

The key message to management is, therefore, that organizational decision making does not only concern future consequences and preferences (logics of consequences) but also involves situations, identities, and rules (logics of appropriateness). By making decisions the organization constantly confirms or redefines its own identity, as well as the identities of its members. It also consolidates or revises rules and patterns of practical action (Zeleny, 2001; Hatchuel, 2001b). Also, there are some processes that are quite the reverse. Individual, group, and organization identities affect how people see themselves and others as individuals and representatives of organizations. The identities, thereby, affect peoples' individual and collective thinking and decision making patterns (Landa, 2005). Thus, we make the following proposition:

P1: The identity of the people, involved in organizational decision making, affects the quality of decisions and should be taken into account in the design of decisions.

5. Social values

5.1. Shared visions. It has for long been argued that involvement of an organization's members in the decision making process contributes to better decisions with greater satisfaction and confidence among the employees (Beach, 1996). A way for management to achieve this is to engage all members of the organization in creating shared visions. A shared vision is not just any idea, but a force in people's hearts, that is, a force of impressive power (Senge, 1990). It is an answer to the question "What do we want to create?" and gives coherence to diverse activities in the organization. When people truly share a vision, they are connected, bound together by a common aspiration. Shared visions develop from personal

visions, and may have their origins at the top management level. A world-class leader understands that the key to energising an organization is to create a vision of the future that embodies the collective values and aspiration of its individuals as a shared mental picture of the future (Johannessen, Olaisen & Olsen, 1999). However, shared visions may also develop from the personal visions of any employee in the organization who is devoted to an innovative idea.

Recently, von Krogh, Ichijo, and Nonaka (2000) described how the management tackles the important issue of improving the communicative climate for sharing visions. First, a knowledge vision has to be instilled. Such a vision requires a strong commitment that can only be achieved by social interaction in order to be effectively communicated. The vision should spur new thinking, ideas, phrasing, and actions as a basis for novel forms of imagination in the organization. It should, furthermore, communicate to all stakeholders what kind of knowledge and values the organization will be seeking. Second, *conversations*, that take place in the business community, may also enable new knowledge creation. Also, in this case, the role of social interaction seems crucial. High trust, open conversation and the justification of new concepts are three important features that have an impact on the design process. Third, the design process may also be influenced by *social interactive skills* that people in an organization have. Such skills have been observed to be crucial for the catalysis, coordination, and marketing of knowledge.

The key message to management is that shared visions provide a forceful means for creating involvement among participants in the decision making process. This may only be achieved by understanding that not only the nature of the vision is important. The means for communicating it effectively both within the organization and to the outside world are also imperative. Thus, we make the following proposition:

P2: The decision maker or designer of decisions should engage the members of an organization to create a shared vision.

5.2. Shared values. Keeney (1992) points out that the rationality of decision processes must be regarded as expandable. According to Keeney, value focused thinking is the key form of motivation by which creativity may be linked to decisions (see also Selart & Boe, 2001). Decision makers should let themselves be guided by objectives, asking themselves "How?", rather than limiting themselves

to a pre-established set of alternatives while making decisions. Value focused thinking implies that the goals and objectives of the decision makers to a high degree should serve as motivators for designing context relevant options. In the negotiation and decision analytic literature, values (or interests) denote what matters in connection to the specific decision at hand and should be distinguished from the positions on which strategically-based stands are taken (Sebenius, 1992). To be able to focus on value maximization in organizations as a driving force, also other peoples' interests must be taken into account by the decision maker. In two-party negotiations, for instance, it is of great importance to be able to build trust and share information in order to achieve an optimal result (Bazerman, 1998). If you succeed in combining your information and values with the information and values of the other party, it becomes a simple arithmetic task to determine the outcome that maximizes joint benefit. Hereby, the sharing of social values becomes a vital prerequisite for the organizational decision process, according to Keeney (1992).

A stakeholder-based process, therefore, often begins with the determination of whose values or concerns matter the most in a decision. Ideally, a small set of objectives, that are important in evaluating a management alternative, is initially defined in the process. For such a process, it is important to include representatives taking different viewpoints (e.g., people from industry, government agencies, or universities). By encouraging participants to express and explore their values fully, well-informed judgments about managerial alternatives may be made and presented to the management. Thus, we make the following proposition:

P3: Getting the members of an organization to express and share common values should improve the decision making process.

6. Social influence

It has been stated by Cialdini (1993) that there exist six basic principles which people employ to produce acceptance for their ideas – reciprocity, consistency, social proof, liking, authority, and scarcity. To be able to socially influence others, that is, to sell in your alternative to your own organization and to the outside world, is a key feature for successful decision making in work life (Hedelin & Allwood, 2001; see also Fiske 1992). Stakeholders include both internal (owners, board members, senior executives, co-workers, union leaders, lower level staff) and external (customers and deliverers) parties. A key feature of the selling

process is, thus, both to make sure that the decision is formally made and guarantee that it will be successfully implemented (Hedelin & Allwood, 2001). The process of selling a decision alternative implies that new features of it will be discovered in the light of other peoples' perspectives (Hedelin & Allwood, 2001). New and previously unknown characteristics of the alternative may emerge as a result of the confrontation with such 'new' perspectives. The selling process excels the role of just selling a pre-established decision made by the manager to others in many ways. Selling does not limit itself to the marketing of an already established managerial decision. Instead, also the pre-decisional processes at the managerial level form a vital part of the selling notion. *Social interaction*, therefore, becomes a key feature in these pre-decisional processes that shapes the managerial perspective. Thus, we make the following proposition:

P4: Being able to socially influence the members of an organization, or other stakeholders involved, as well as letting them participate in the process, should improve the quality of decisions

Conclusion

It has been argued that the design of decisions is a process that in many ways is shaped by social factors such as identities, values, and influences. In order to understand when, why, and how these factors are affecting the decision making process in organizations, we must focus especially on the management level. It is the management that, in fact, shoulders the chief responsibility for designing collective actions, such as decisions.

According to Hatchuel et al. (2001b), modern business enterprises should be understood as collective action (i.e. social) processes whose aim is to constantly innovate, and simultaneously so doing renew, re-create and transform both its own structures, practices and products. Beckert (1999; see also Dequech, 2001) argues that institutions provide rules which individual agents either follow, fail to follow due to complexity, or deliberately choose not to follow. Entrepreneurial agents may use the rules (i.e. institutionalized practices) as a basis for seeking new rule-breaking opportunities for action. This interdependency of agency and institutional practices is an important trigger of organizational change. In the wake of Milan Zeleny (2001), one could say that firms in order to produce have to constantly reproduce themselves. The general point in Hatchuel's "artefactual" collective action, Beckert's entrepreneurial agency and Zeleny's self-renewing corporations is that firms – in order to survive – have to constantly redefine

their boundaries and transform their structures. Zeleny also claims that all natural systems are social. Recent research on organizations and institutions calls us to pay close attention to complex formal and informal social forces at work also in decision making.

Managers should propose measures of design assistance (e.g., team working, consultancy, artists, experts etc.) to a much higher extent than is the case today. This will improve the way designing is undertaken by individuals and groups in order to improve the strategic organizational outcomes. It will also help improving managers' understanding of the ways expertise could be better used to gain competitive advantage and improve organizational security. Managers also need to realize that organizational decision making concerns both future

consequences and preferences (logics of consequences) as well as situations, identities, and rules (logics of appropriateness). This implies that both outcome and process are important features of decision making in organizations. Managers need to apply shared visions as a forceful means for creating involvement among participants in the decision making process. This means that not only the nature of the vision is important but also the means for communicating it effectively both within the organization and to the outside world. To be able to sell a promising alternative to the organization, managers need to present it to others in the pre-decisional phase. Consequently, "new" perspectives must be elicited from others in order to help managers refine the promising alternative on a continuous basis.

References

1. Abrams, D., & Hogg, M.A. (1990). *Social Identity Theory: Constructive and Critical Advances*. London: Springer Verlag.
2. Acquisti, A. and Grossklags, J. (2005). "Uncertainty, Ambiguity and Privacy", Fourth Annual Workshop Economics and Information Security (WEIS 2005), MA, 2-3 June, 2005.
3. Bazerman, M. (1998). *Judgment in Managerial Decision Making*. New York: Wiley.
4. Beach, L.R. (1997). *The Psychology of Decision Making: People in Organizations*. London: Sage.
5. Beckert, J., (1999). Agency, entrepreneurs, and institutional change. The role of strategic choice and institutionalized practice in organizations, *Organization Studies*, 20, pp. 777-799.
6. Buskens, V. (2000). Rational Choice in the Netherland at the Start of the New Millennium. The Agora online, Vol. 8, No. 2, pp. 3-7.
7. Camerer C, Loewenstein G & Prelec D., (2005). "Neuroeconomics: How Neuroscience Can Inform Economics", *Journal of Economic Literature* XLII (March), pp. 9-64.
8. Camerer, C., Loewenstein, G., & Prelec, D. (2004). "Neuroeconomics: Why Economics Need Brains." *Scandinavian Journal of Economics*, 106 (3), pp. 555-579.
9. Cialdini, R.B. (1993). *Influence: Science and Practice*. New York: Harper Collins Publishers.
10. Cohen, M.D., March, J.G., & Olsen, J.P. (1972). A garbage can model of organizational choice. *Administrative Science Quarterly*, 17, 1-25.
11. Collingwood, R.G. (1939). *An Autobiography*. Oxford: Clarendon Press.
12. Dequech, D. (2001). Bounded rationality, institutions, and uncertainty. *Journal of Economic Issues*, 35, 4, pp. 911-929.
13. Diekmann, A. and Lindenberg, S., Sociological aspects of cooperation. In N.J. Smelser, and P.B. Baltes (eds.). *International Encyclopedia of the Social & Behavioral Sciences*. New York: Elsevier Science, 2001.
14. Dorst, K. (2006). Design Problems and Design Paradoxes. *Design Issues*, Vol. 22, No. 3, pp. 4-17.
15. Egidi, M. (2005). From Bounded Rationality to Behavioral Economics. Economics Working Paper Archive, Experimental 0507002. Retrieved: 19.03.2007, from <http://econwpa.wustl.edu:80/eps/exp/papers/0507/0507002.pdf>
16. Fiske, S.T. 1992. Thinking is for doing: Portraits of social cognition from daguerrotype to laserphoto. *Journal of Personality and Social Psychology*, 63, pp. 877-889.
17. Hatchuel, A., LeMasson, P., and Weil, B. (2002). From Knowledge Management to Design-Oriented Organisations, *International Social Science Journal*, Vol. 171, no. The Knowledge Society, 2002, pp. 25-37.
18. Hatchuel, A. (2005). Towards an epistemology of collective action: management research as a responsive and actionable discipline. *European Management Review*, Vol. 2, pp. 36-47.
19. Hatchuel, A. (2001a). Towards design theory and expandable rationality: The unfinished program of Herbert Simon. *Journal of Management and Governance* 5, pp. 260-273.
20. Hatchuel, A. (2001b). "The Two Pillars of New Management Research", *British Journal of Management*, 12 (Special Issue), pp. S33-S39.
21. Hatchuel, A. (2004). Histoire des révolutions de la gestion des entreprises. Sitecon. Available at http://sitecon.free.fr/grh_histo.htm last visited 5.3.2007.
22. Hedelin, L., & Allwood, C.M. (2001). Managers' strategic decision processes in large organizations. In C.M. Allwood and M. Selart (Eds.), *Decision Making: Social and Creative Dimensions*. Dordrecht/Boston: Kluwer Academic Publishers.
23. Hogg, M.A., Turner, J.C., & Davidson, B. (1990). Polarized norms and social frames of reference: A test of the self-categorization theory of group polarization. *Basic and Applied Social Psychology*, 11, pp. 77-100.
24. Johannessen, J.-A., Olaisen, J., & Olsen, B. (1999). Managing and organizing innovation in the knowledge economy. *European Journal of Innovation Management*, 2, pp. 116-128.

25. Kéchidi M. 1998. Rationalités et contextes de décisions: un retour sur H. Simon, *Revue Internationale de Systémique*, 12 (4-5), pp. 419-440.
26. Keeney, R.L. (1992). *Value-Focused Thinking*. Cambridge, MA: Harvard University Press.
27. Klein, G. (1998). *Sources of Power: How People Make Decisions*. Cambridge MA: The MIT Press.
28. Klein, G., Orasanu, J., Calderwood, R., & Zsombok, C.E. (1993). *Decision Making in Action: Models and Methods*. Norwood: Ablex.
29. Koopman, P., & Pool, J. (1991). Organizational decision making: Models, contingencies, and strategies. In J. Rasmussen, B. Brehmer and J. Leplat (Eds.), *Distributed Decision Making: Cognitive Models for Cooperative Work* (pp. 19-46). Chichester: Wiley
30. Lagueux, M. (2004). The Forgotten Role of the Rationality Principle in Economics. *Journal of Economic Methodology*, 11, pp. 31-51.
31. Landa, Janet T. (2005). "Bounded rationality of Homo Classificus: the law and bioeconomics of social norms as classification." *Chicago-Kent Law Review* 80: 1167-1180.
32. Lewis, M. (1993). Assessing decision heuristics using machine learning. *Decision Support Systems*, 10, 199-212.
33. March, J.G. (1988). *Decisions and Organizations*. Oxford: Blackwell.
34. March, J.G. (1994). *A Primer on Decision Making*. New York: The Free Press.
35. March, J.G. (1999). *The Pursuit of Organizational Intelligence*. Oxford: Blackwell.
36. March, J.G., & Simon, H.A. (1958). *Organizations*. New York: Wiley.
37. Mongin, P. (2002). Le principe de rationalité et l'unité des sciences sociales, *Revue économique*, 53 (2), pp. 301-323.
38. Nutt, P.C. (1984). Types of organizational decision processes. *Administrative Science Quarterly*, 29, pp. 414-450.
39. Quinn, J.B. (1980). *Strategies for Change: Logical Incrementalism*. Homewood, IL: Irwin.
40. Sebenius, J. (1992). Negotiation analysis: A characterization and review. *Management Science*, 18, pp. 18-38.
41. Selart, M., & Boe, O. (2001). On practitioners' usage of creativity heuristics in the decision process. In C.M. Allwood and M. Selart (Eds.), *Decision Making: Social and Creative Dimensions*. Dordrecht/Boston: Kluwer Academic Publishers.
42. Senge, P.M. (1990). *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York: Doubleday Publishers.
43. Sent, E.-M. (2005). Simplifying Herbert Simon. *History of Political Economy* 37(2).
44. Simon, H.A. (1947). *Administrative Behavior*. New York: Free Press.
45. Simon, H.A. (1957). *Models of Man*. New York: Wiley.
46. Simon, H.A. (1996). *The Sciences of the Artificial*. Cambridge MA: The MIT Press.
47. Singer, T. and E. Fehr (2005). The Neuroeconomics of Mind Reading and Empathy. *AEA Papers and Proceedings*, pp. 340-345.
48. Smith, G.F. (1997). Managerial problem solving: A problem-centered approach. In C.E. Zsombok and G.A. Klein (Eds.), *Naturalistic Decision Making: Expertise, Research, and Applications*. Mahwah, NJ: Lawrence Erlbaum.
49. Suh, N. P. (1988). *The Principles of Design*. New York: Wiley.
50. Tajfel, H., & Turner, J.C. (1979). An integrative theory of intergroup conflict. In W.G. Austin & S. Worchel (Eds.), *The Social Psychology of Intergroup Relations* (pp. 33-47). Monterey, CA: Brooks Cole.
51. Tellefsen, B., & Love, T. (2002a). Understanding designing and design management through constituent market orientation and constituent orientation. In D. Durling and J. Shackleton (Eds.), *Common Ground: Design Research Society International Conference Proceedings*.
52. Tellefsen, B., & Love, T. (2002b). Understanding design as a social process through Constituent Market Orientation. *Journal of Design Research* (In Press).
53. von Krogh, G., Ichijo, I., & Nonaka, I. (2000). *Enabling Knowledge Creation*. Oxford: Oxford University Press.
54. von Winterfeldt, D., & Edwards, W. (1986). *Decision Analysis and Behavioral Research*. Cambridge: Cambridge University Press.
55. Vroom, V.H., & Jago, A.G. (1988). *The New Leadership: Managing Participation in Organizations*. Englewood Cliff, NJ: Prentice Hall.
56. Vroom, V.H., & Yetton, P.W. (1973). *Leadership and Decision Making*. Pittsburgh: University of Pittsburgh Press.
57. Weick, K.E. (1993). The collapse of sensemaking in organizations: The Mann Gulch disaster. *Administrative Science Quarterly*, 38, pp. 628-652.
58. Weick, K.E. 1995. Sensemaking in organizations. Thousand Oaks, CA: Sage.
59. Zeleny, M. (2001). Knowledge and self-production processes in social systems. The UNESCO Encyclopedia.