

ENTERPRISE: PERFORMANCE AND BUSINESS PROCESSES

**MAKING DECISIONS IN AN EVER-
CHANGING ENVIRONMENT - A
RESEARCH AGENDA**

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Abstract: Simon recognized the limitations of the classical normative decision theory and established descriptive theory. His concept of bounded rationality and administrative behavior was a big step ahead, but the world has changed dramatically since then. Multiple, continuous changes have become normal, which brings up new problems on the decision maker's and on the organization's level as well. It became usual that the decision maker is not able to define preferences for lack of knowledge and have to learn or delegate much more frequently than before. In the same time the organization should be more resilient or nimble in this ever-changing environment. The authors outline a research agenda on both levels: some about the continuous learning and frequent delegating, and some about the HRM and IT-management issues of organizational nimbleness.

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Introduction

Herbert Simon's theory of bounded rationality and administrative behavior revolutionized decision science and laid the foundation of descriptive decision theory in contrast with the traditional prescriptive or normative school. Half century passed off since then and meanwhile the typical circumstances of managerial decision making have changed dramatically. It is time to rethink this topic and to propose a new research agenda for refining, updating his theory.

Background

The traditional theory of economists postulates an 'economic man' who deals with the real world in all its complexity in a completely 'rational' way.

This man is assumed to have absolutely complete or at least very thorough knowledge of the relevant aspects of his environment. He is assumed to have a well-organized and stable system of preferences, and an ability to calculate the expected returns of the alternative courses of action that are available to him. He selects the rationally determined best course of action, i.e. the alternative with the maximum return on his preference scale. Herbert Simon (1955, 1957, 1958, 1960, 1963, 1972, 1976, 1979) made it clear that this schematized model of rationality and the economic man is divorced from reality. He proposed the theory of 'bounded rationality' and the model of the 'administrative man'. In the description of bounded rationality Simon (1972) identified three limits of rationality:

1. Risk and uncertainty. Certain parameters of the environment and the consequences of the alternatives can be assumed to be random variables with known distributions. It usually makes the calculations for finding the optimum more difficult
2. Incomplete information about alternatives. The decision maker's searching activity and consequently his knowledge about the alternatives are limited by the amount of resources he devotes to search. It raises the question of how to allocate his resources to search
3. Complexity. Assuming complexity in some environmental parameters can be so great as to prevent the decision maker from calculating the best course of action, because the cost of computational effort can be higher than the expected increased return due to the improved approximation.

While the economic man maximizes, the administrative man satisfices, i.e. looks for a course of action that is satisfactory or 'good enough'. "If the alternatives in a choice situation are not given, but have to be discovered or invented, and if the number of possible alternatives is very large, then a choice has to be made before all or most of them have been looked at. (...) But if all alternatives are not to be examined, some criterion must be used to determine that an adequate, or satisfactory, one has been found. In the psychological literature, criteria that perform this function in decision processes are called aspiration level. The Scottish word 'satisficing' (=satisfying) has been revived to denote problem solving and decision making that sets an aspiration level, searches until an alternative is found that is satisfactory by the aspiration level criterion, and selects that alternative." (Simon, 1972, p.168).

The aspiration level is not necessarily fixed, but may change on the basis of experience during the exploration of alternatives, adjusting gradually to the value of the offers received so far. As the decision maker finds it easy to discover satisfactory alternatives, his aspiration level rises; as he finds it difficult to discover satisfactory alternatives, his aspiration level falls. (Simon, 1955, 1963, 1979).

The problem of uncertain aspiration levels

Simon's model of administrative behavior assumes that the decision makers are able to set their aspiration levels, i.e. they know the important attributes and their possible values. But is this assumption always valid?

Consider the example of a manager in two different cases who wants to raise production and sales volumes. In the first case, he or she wants to increase the manufacturing capacity of the existing business by setting up an additional production line for producing their existing products in higher volumes than before. The company's professional staff is familiar with the existing business so they know perfectly well what the important attributes of this kind of production lines are. In this case they are able to set their aspiration levels and to begin searching for alternatives.

In the second case, the manager wants to enter a new business and set up a production line for manufacturing such kinds of products which are absolutely new for the company (e.g. because the existing one's market is saturated). But the company's professional staff have never dealt with this new business so they are more or less - or even absolutely - unfamiliar with it. In principle one or both of the cases below may be possible:

- they partly or completely know what the important attributes are, but do not know the values which are possible and expectable as minimum or optimum requirements
- they partly or completely do not know what the important attributes are.

Aspiration levels for the search cannot be set in either of the above-mentioned cases, although the underlying reasons are not the same. In the first case they know what kind of information is missing and must be gathered, but in the second one they do not even know the type of the missing information, consequently they have no idea what to search for.

Modeling uncertain aspiration levels

Kind of distinction between these types of lack of information is not new, it has already been described by Rowe (1977). He used this distinction for characterizing the types of uncertainty of the knowledge of the possible states of nature (or states of the world), i.e. our knowledge of the environment outside of our control but having significant implications for the consequences of our decisions.

Rowe (1977, p.458) defines the degree of uncertainty as "That proportion of information about a total system that is unknown in relation to the total information about the system."

He calls descriptive and measurement uncertainty the two possible types of this kind of vague situations. "Descriptive Uncertainty: Absence of information relating to the identity of the variables that explicitly define a system. The inability to fully describe the 'degrees of freedom' of a system. (...) Measurement Uncertainty: Absence of information relating to the specification of value assigned to each variable in a system. The inability to measure or assign values to variables in a system." (Rowe, 1977, pp.17-18)

In our classification above we adapted Rowe's two types of uncertainty of the knowledge of the possible states of nature - which are outside the control of the decision maker - to the knowledge of the important attributes of the alternatives (i.e. possible courses of actions) the decision maker can choose

from - which are under the control of the decision maker. Rowe’s uncertainty types originally refer to the circumstances after the decision has been made and implemented, while our adapted version refers to the characteristics of the decision making process itself.

The behavior of the groping man

The kind of decision making situation described above is much more frequent nowadays than it was in the times of Simon. In the early 1970s only 5% of corporate America experienced continuous, overlapping change, while in the early 1990s already 75% of them (Conner, 1993, p.44). “... in this age of discontinuity, the companies that last through the coming decades will be those that can respond effectively to the changing demands of their environment. (...) These questions are critical now that change has become the rule rather than the exception for those seeking corporate survival and success.” (Kets de Vries and Balazs, 1998, p.612) “Perhaps the greatest challenge business leaders face today is how to stay competitive amid constant turbulence and disruption.” (Kotter, 2012, p.46) In this ever-changing environment the typical decision making behavior is partially different from the one in Simon’s time.

TABLE 1. SOME BASIC CHARACTERISTICS OF THE THREE TYPES OF DECISION MAKING

	Economic man	Administrative man	Groping man
Knowledge	<ul style="list-style-type: none"> - complete (or very thorough) knowledge of the environment - complete knowledge of the preferences 	<ul style="list-style-type: none"> - incomplete knowledge of the environment - complete knowledge of the preferences 	<ul style="list-style-type: none"> - incomplete knowledge of the environment - incomplete knowledge of the preferences
Aim	<ul style="list-style-type: none"> - optimizing (finding the maximum utility) 	<ul style="list-style-type: none"> - satisficing (finding a solution which fulfills the aspiration level) 	<ul style="list-style-type: none"> - satisficing (finding a solution which fulfills the aspiration level)
Behavior	<ul style="list-style-type: none"> - calculating the optimum (maximizing the utility) 	<ul style="list-style-type: none"> - searching for alternatives and comparing them to the aspiration levels 	<ul style="list-style-type: none"> <i>1st step</i> - learning to become able to define preferences (aspiration levels), and/or - delegating to somebody who is able to define preferences (aspiration levels) <i>2nd step</i> - searching for alternatives and comparing them to the aspiration levels
Limits of rationality	<ul style="list-style-type: none"> - no limitation, or lacking the appropriate optimizing algorithm 	<ul style="list-style-type: none"> - lack of time or resources to gather information about the environment 	<ul style="list-style-type: none"> - lack of time or resources to gather information about the environment - lack of time, resources or trust to define preferences (aspiration levels)

We call the decision maker whose aspiration levels are uncertain or in some cases absolutely lacking the groping man, distinguishing him or her both from the traditional economic man and Simon's administrative man. He or she is not able to optimize like the economic man or not even able to satisfice like the administrative man as long as he or she does not have an aspiration level.

Therefore the groping man has two possibilities:

- learning about the issue to become able to make a (more or less) rational decision, i.e. gathering and analyzing information about the significant attributes, both their existence (reducing description uncertainty) and their possible and expectable values (measuring uncertainty), to become able to find good solutions; and/or
- giving up being able to decide on their own, delegating the decision to a trusted expert, because it is hopeless to become an expert of the issue within the given time and resource limits.

Table 1 summarizes some of the most important characteristics of the economic, administrative, and groping man's decision making types.

The change-ready organization

It is not enough to examine the behavior of the decision maker in itself: the whole organization should be always ready to change. "People have been writing for at least 20 years about the increasing speed of business and the need for organizations to be quicker and much more agile. But who has been able to pull that off?" (Kotter, 2012, p.58) The organization's ability to change depends both on its leaders' nimbleness and its members' resilience (Conner, 1993, 1998).

Pieters and Young's (2000) model of the Ever Changing Organization (ECO) consists of five elements: environment, stabilizing base, managing for change, continuous improvement, continuous learning. The organization's change-readiness depends on these five key ECO components.

Buono and Kerber (2009, 2010) emphasize three main areas of the development of the organizations' change capacity: the members of the organization, the structure of the organization, and the culture of the organization.

Learning issues

Is it possible for a decision maker to keep up with the continuous learning pressure nowadays, in this huge tide of new knowledge? Toffler (1970) forewarned about the danger of this kind of overload when the first premonitory signs became perceptible. He was right: 'future shock' became reality for now. "As of 2012, about 2.5 exabytes of data are created each day, and that number is doubling every 40 months or so. More data cross the internet every second than were stored in the entire internet just 20 years ago." (McAfee and Brynjolfsson, 2012, p.62) How far can this information processing and learning rush be intensified? What 'price' must the decision maker 'pay' for it? What does make sense to be learned at all? What should one give up to learn

deeply? Does it depend on the age of the decision makers how they can tolerate that:

- they can learn less and less in relative terms about the world around them
- learning takes more and more of their time?

Delegating issues

Should decision makers of our days delegate more and more, becoming a “decision approver” who feels increasingly unknowing and depending on experts’ knowledge? Whom to trust in among the possible experts without being able to judge their expertise, being a layman in their field? This dilemma has always existed, but nowadays decision makers face it far more frequently than several decades ago. It has become a critical issue by these days. How can managers accept that they have to delegate decisions to some experts much more often than some decades ago? Does it depend on the age of the delegating managers?

Issues related both with learning and delegating

In the cases of learning and delegating as well it is not obvious any more that the older person is always the one who can teach or counsel the younger one. More and more knowledge becomes obsolete within shorter time than one’s carrier lasts. Younger persons are very often more competent in several issues because they have already learned those during their studies while the older ones have not done so yet. How can managers accept this role swap between generations, i.e. they have to learn from or delegate decisions to much younger experts more and more often?

Research agenda on the organization’s level

Beside all the questions and issues that emerge on the decision makers’ level, it is also important to pay attention to the ones concerning different functional units or even the whole organization.

Globalization and global competition put a tremendous pressure on organizations (e.g. Luo, 2005) and indirectly on decision makers’ shoulders as well. According to Mendenhall et al. (2003, p. 261) “... globalization, has upset the cart of traditional business rules: the new rules of globalization are often vague, unstable, counterintuitive, and full of exceptions.” Hence decision makers should face newer and newer challenges, types of problems they have never even seen before, which question the changeless relevance and goodness of the so-far-used (and good) decision making methods and processes.

Continuous change also has its effects on the business environment itself, according to Cascio and Aguinis (2008) for instance, even on the organizational structure: “In contrast to the hierarchical organization of the twentieth-century organization, the twenty-first-century organization is far

more likely to look like a web: A flat, intricately-woven form that links partners, employees, external contractors, suppliers, and customers in various collaborations” (2008, p.135). In addition, going global (or even only multinational) via expansions, mergers and/or acquisitions further complicate the situation of decision makers as they (usually) not only initiate changes in terms of the organizational structure but also regarding the division and allocation of power, responsibilities, and resources.

A further increasingly frequent problem is (especially regarding multinational and global companies) how to find balance between remaining local and going global as the latter will likely result in losing the capability to adapt to local circumstances at a desirable extent (e.g. Luo, 2005; Dewhurst, Harris and Heywood, 2012). This train of thought leads to another issue: the sufficient degree of centralization, as “... it also seems likely that, once formally recognized as a center of value creation for the corporation as a whole, the subsidiary may be forced to give up some of its autonomy as the firm seeks to integrate the unit into its global network of innovation, production, and distribution.” (Frost, Birkinshaw and Ensign, 2002, p.1013) In the meantime it is also true that as corporate complexity and related costs grow, they will imply a certain degree of shift towards standardization (Dewhurst, Harris and Heywood, 2012), which will result in never-before-seen decision situations and problems.

While the possible contributors and factors of the constantly changing business environment could be endlessly listed, there is still one, which simply cannot be left out, not even from this confessedly limited list: the constant need for innovation. Or “Call it the innovation imperative” as Cascio and Aguinis (2008, p.137) put it as they argue “If companies are to thrive in this hyper-competitive environment, they must innovate more and faster” and “there is simply not enough time for deliberation or bureaucracy.”

Based on all the above, there are two main areas the authors will like to draw attention to regarding questions concerning the organizational level.

Human resources management

More and more authors (e.g. Huselid, Beatty and Becker, 2009; Fernandez-Aráoz, Groysberg and Nohria, 2011; Strack et al., 2011) argue that human resources management (HRM) should become a strategic partner within the organization, even though this would bring along new decision making situations as well as new problems. Although human resources’ (HR) strategic role is only a stated aim (at most) and not yet reality for most of the companies, in today’s instable economic environment one can easily formulate such questions that reveal what the challenge is about. It is enough to think of how the more and more important process of corporate succession planning can contribute to the sufficient resilience or nimbleness of the organization, and what kind of new practices, approaches or HR strategy is needed to achieve that.

It is thought-provoking to think of how members of the so called Generation Z can be attracted to the company (and the talented ones selected) when they are so different from previous generations (e.g. Generations X and Y) in many

of their basic traits. Not to mention that “workforces are likely to become even more global than they are now” (Cascio and Aguinis, 2008, p. 137).

Information technology management

Similarly to HRM, one can easily find publications (e.g. King and Sethi, 2001; Akmanligil and Palvia, 2004; Miles et al., 2010) covering the issue of the need for information technology (IT) management to become a strategic partner within the organization. As for reaching the sufficiently resilient (nimble) organization it is not enough if IT serves only as an operational function carrying out the pre-decided business concepts, IT should rather function as an enabler. Figuring out how this should be done is not an easy assignment, especially if one wants to get IT experts involved in decision making where the organization itself is rather complex, i.e. operating in more than one country. How decision making can be delegated and whether there is any need and willingness to do so are also valid questions. Furthermore, issues regarding centralization, standardization as well as the need for fully and seamlessly integrated systems bring up additional decision making dilemmas, especially in the relation of a parent company and a subsidiary. Would the centralization of IT services, or rather the standardization of those left decentralized undermine the flexibility and change capacity of multinational companies?

Even though questions concerning the different functions have been handled separately above, one should not forget these questions are all interrelated. It should be understandable without much explanation that different generations within an organization will respond differently to changes of their environment (e.g. to software updates in every 6 months), which also reveals that the previously formulated questions can be easily linked to each other. Namely, for instance, how can an organization become capable of selecting that future employee who will be able to respond well and fast enough to this ever-changing environment and will be able to make - due to lacking information and preferences - now only groping decisions?

Summary

It is without doubt that since Simon's time, the world around us has changed dramatically and keeps on changing with an ever-increasing speed. Both individuals (decision makers) and organizations should adapt somehow to such changes in their environments. However, the process of doing so is a rather complex and complicated one as it requires a great amount of flexibility and also a new kind of decision making style/behavior.

The main aim of this research agenda was to describe this new style, the behavior of the groping man, as well as to outline the circumstances that had led to its formation. This observable shift in the decision making behavior (and process) brings along numerous questions (e.g. ones concerning continuous learning and frequent delegating issues, as well as ones related to the HRM and

IT-management issues of organizational nimbleness) which are yet to be answered and up to further research.

References

- Akmanligil, M., Palvia, P., 2004. "Strategies for global information systems development," *Information & Management*, Vol.42(1), pp.45-59
- Buono, A., Kerber, K., 2009. Building organizational change capacity, Management Consulting Division International Conference, Vienna, Austria
- Buono, A., Kerber, K., 2010. "Creating a sustainable approach to change: Building organizational change capacity," *SAM Advanced Management Journal*, Vol.75(2), pp.4-21
- Cascio, W., Aguinis, H., 2008. "Staffing twenty-first-century organizations," *The Academy of Management Annals*, Vol.2(1), pp.133-65
- Conner, D., 1993. *Managing at the speed of change*, New York: Villard Books
- Conner, D., 1998. *Leading at the edge of chaos*, New York: John Wiley
- Dewhurst, M., Harris, J., Heywood, S., 2012. "The global company's challenge," *McKinsey Quarterly*, Vol.3, pp.76-80
- Frost, T., Birkinshaw, J., Ensign, P., 2002. "Centres of excellence in multinational corporations," *Strategic Management Journal*, Vol.23(11), pp. 997-1018
- Fernandez-Ar  oz, C., Groysberg, B., Nohria N., 2010. "How to hang on to your high potentials," *Harvard Business Review*, Vol.89(10), pp.76-82
- Huselid, M., Beatty, R., Becker, B., 2009. "The differentiated workforce," Harvard Business School Press, Boston. - Quoted by: Schuler, R., Jackson, S., Tarique, I., 2010. "Global talent management and global talent challenges: Strategic opportunities for IHRM" *Journal of World Business*
- Kets de Vries, M., Balazs, K., 1998. "Beyond the quick fix: The psychodynamics of organizational transformation and change," *European Management Journal*, Vol.16(5), pp.611-22
- King, W., Sethi, V., 2001. "Patterns in the organization of transnational information systems," *Information & Management*, Vol.38, pp.201-15
- Kotter, J., 2012. "Accelerate!" *Harvard Business Review*, Vol.90(11), pp.44-58
- Luo, Y., 2005. "Toward cooperation within a multinational enterprise: A perspective from foreign subsidiaries," *Journal of World Business*, Vol.40(1), pp.71-90
- Mendenhall, M., Jensen, R., Black, J., Gregersen, H., 2003. "Seeing the elephant: Human resource challenges in the age of globalization," *Organizational Dynamics*, Vol.32(3), pp.261-74
- McAfee, A., Brynjolfson, E., 2012. "Big data: The management revolution," *Harvard Business Review*, Vol.90(10), pp.60-68
- Miles, R., Snow, C., Fjelstad, D., Miles, G., Lettl, C., 2010. "Designing organizations to meet 21st-century opportunities and challenges," *Organizational Dynamics*, Vol.39(2), pp.93-103
- Pieters, G., Young, D., 2000. *The ever-changing organization: Creating the capacity for continuous change, learning, and improvement*, Boca Raton, Florida: St. Lucie Press
- Rowe, W., 1977. *An anatomy of risk*, New York: Wiley
- Simon, H., 1955. "A Behavioral model of rational choice," *Quarterly Journal of Economics*, Vol.69(1), pp.99-118
- Simon, H., 1957. *Models of man*, New York: Wiley

Simon, H., 1958. "The role of expectations in an adaptive or behavioristic model," In: Bowman, M. (ed.): *Expectations, uncertainty, and business behaviour*, New York: Social Science Research Council, pp. 49-58

Simon, H., 1960. *The new science of management decision*, New York: Harper & Brothers

Simon, H., 1963. "Economics and psychology," - In: Koch, S. (ed.): *Psychology: A study of a science*, New York: McGraw-Hill, Vol.6, pp.685-723

Simon, H., 1972. "Theories of bounded rationality," - In: Radner, C. and Radner, R. (eds.): *Decision and organization*, Amsterdam: North-Holland Publishing Company, pp.161-76

Simon, H., 1976. *Administrative behavior*, (3rd ed.), New York: Free Press

Simon, H., 1979. "Rational decision making in business organizations," *American Economic Review*, Vol.69(4), pp.493-513

Strack, R., Caye, J.-M., Teichmann, C., Haen, P., Frick, G., Bird, S., 2011. *Creating people advantage 2011 - Time to Act: HR certainties in uncertain times*, Boston, MA, USA: The Boston Consulting Group, Inc. and the European Association for People Management

Toffler, A., 1970. *Future shock*, New York: Bantam Books