Collaborative Strategic Planning On-line

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ABSTRACT

It is widely agreed that the rate of change in many industries is faster than ever before. Strategic decisions are, in addition to top management plans, made on a day-to-day basis closer to the firms markets. In order for the decisions made by individual employees to be strategically coherent it is necessary that the employees develop a shared understanding of some of the basic assumptions and concepts affecting their business environment. This paper presents a computer-based collaboration tool, which is used in the context of strategic planning to facilitate knowledge sharing, knowledge utilization, and learning.

1. Introduction

Internationalization of companies and changes in the external business environment has changed the role of strategic planning. The Strategic planning process can be viewed as a learning process where managers also try to develop a common fact base and agree on some basic assumptions concerning the internal and external environment. The strategic apex in multinational companies is also geographically dispersed which makes frequent face-to-face meetings more difficult.

Management information systems often provide the hard quantitative data needed in strategic planning. Qualitative data e.g. the intuition and knowledge of frontline employees and middle management is, at least explicitly, often not used in the strategic planning process. Effective and successful strategies however require the participation of middle management and also the frontline employees. This is why a bottom-up strategy making is needed to complement the top-down strategic planning. In geographically dispersed companies it is difficult to achieve a coherent bottom-up

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process, but information technology has provided new ways to communicate with each other.

This paper presents a system, which can be used to facilitate management learning, utilization of existing knowledge, and knowledge sharing between the individuals of multinational strategic planning groups. The system has three basic building blocks: (1) a Questionnaire tool, (2) a Dialogue tool, and (3) a Planning tool.

The Questionnaire tool is used to quickly and easily spread strategic questions to local situations. With the help of the Internet the answers are gathered for analysis. The analysis of quantitative answers is fairly straightforward. Qualitative answers are analyzed with a technique based on concept maps. With the help of the questionnaire tool it is possible to collect information and intuition of those who operate close to the markets.

The Dialogue tool is used to provide an environment where strategists can freely share ideas and comment on other people's notes. The dialogue tool is also used to create a common set of concepts and key assumptions concerning the business environment.

The Planning tool is designed for the formal strategic planning process. Here a group of people collaborates over the Internet and try to agree on, and create, the formal corporate or business strategy.

2. Background

2.1 Strategic planning in a changing environment

Globalization has opened up new markets. Many companies operate in different geographical and cultural areas. The group of employees concerned with strategic issues (i.e. the strategic apex, Mintzberg, 1996) might be widely dispersed into different locations in a multinational company. This limits the number of face-to-face meetings the group can have with reasonable amount of time and money invested during a year.

Different companies adopt different ways to make strategy. There is no "one right way" to make it. Strategy can be viewed as a pattern in the decisions that a company makes (Mintzberg & Waters, 1985). These decisions can be carefully designed (planned strategy) or they can simply emerge without prior planning (emergent strategy). This of course means that there can also be a "no strategy" strategy where there is no clear coherent pattern in the behavior of the firm. The planned strategy can

also be thought of as a top-down process and the emergent strategy as bottom-up strategy making (see e.g. Day, 1990).

Leaps and discontinuous trends are making the world and the business environment increasingly more difficult to predict (see e.g. Kettunen, 1991). Long-range plans are of only little use in this kind of a business setting (Ghoshal & Bartlett, 1998). Because of the changes the variety of the business environment is raising and so too must the variety in the businesses trying to survive in this environment, which is stipulated by the law of requisite variety (Ashby, 1956). This means that an organization should expand the range of its possible behaviors, which is also one definition for learning (Huber, 1991). According to Nonaka & Takeuchi (1995) employees can try to reach requisite variety by "combining information differently flexibly and quickly and by providing equal access to information throughout the organization". In a rapidly changing business environment it is necessary to quickly collect, analyze, and use information (Mockler, 1993). This is why we need new tools for strategic planning. These tools should enable the strategists to gather relevant structured and unstructured information and knowledge quickly and easily.

The strategic planning processes are often arranged around a set of meetings, which typically include the chief executive officer and senior corporate team (Kaplan & Beinhocker, 2003). This kind of a process facilitates the formal strategy making process or top-down strategy process where company actions are well planned before implementation. Some authors argue that strategic decisions are often made outside the formal strategic planning process (see e.g. Mintzberg & Waters, 1985, Quinn & Voyer, 1996, Kaplan & Beinhocker, 2003). As companies move to new geographical areas the management team responsible for creating strategies will consist of people with different educational and cultural backgrounds. These international teams are also crucial to the success of international strategies (Davison, 1995).

Strategic planning should not be solely the work of top corporate management. Many authors have acknowledged the need for a bottom-up strategy process to complement the top-down process (e.g. Day, 1990, Nonaka & Takeuchi, 1995, Quinn & Voyer, 1996). Both approaches, top-down process and bottom-up process, are needed to create effective and adaptive strategies. Environmental turbulence has led to the decentralization of strategic decision-making (Grant, 2003). This is why strategic planning should also be a learning process (cf. Ghoshal & Bartlett, 1998) where managers share ideas and challenge their opinions to learn from each other and create "shared understandings of complex business issues" (Senge, 1990). This way

managers are better prepared to make good strategic decisions whenever they are required to do so (cf. Kaplan & Beinhocker, 2003).

Strategic planning is inherently a complex task, since it deals with things to come. Complex and important tasks are often handled by a group (Grant, 1996a), or a team, of individuals. Opportunities and threats in the external environment rise unexpectedly and in unknown proportions. These events must be handled in real-time. This calls for continuous collaboration among the individuals participating in strategic planning and implementation. When these opportunities or threats appear, it is important that managers are ready to take appropriate action (Kaplan & Beinhocker, 2003).

Since the environment is constantly changing strategies should be designed to be adaptive. Strategy process should not be only an annual meeting where the top management discusses future directions, but a continuous process (cf. Vanharanta, 1995). As knowledge is getting more and more attention as the most valuable asset a company has (see e.g. Stewart, 2001), it is important to utilize that asset effectively and try to accumulate that asset. Learning is the only way to make knowledge assets grow.

To solve the problems mentioned above we propose a new tool for continuous strategy creation. The aim of the new tool presented in this paper is to facilitate the learning of those involved in the strategic planning process, i.e. facilitate strategic learning (cf. Kuwada, 1998). The tool is designed to speed up the strategy process. With the help of this tool it is easier to utilize the information and intuition of employees everywhere in the organization.

2.2 Concept maps as a learning tool

Cognitive tools are instruments that are not planned for certain thematic entity but can be used, in principle, for learning about almost any topic. A model example of this kind of a tool is the concept map.

Concept maps are intended to represent meaningful relationships between concepts (Novak & Gowin, 1984). A concept map consists of a set of nodes (the concepts) and arcs (the relationships). There has to be at least two nodes and an arc for a graph to be a concept map.

A concept map is used when a person wants to clarify to herself the concepts of a certain topic. At schools, for example, it is used to clarify the key concepts of the learning task for the students as well as for the teacher. The power of the concept map is, that even a big domain of knowledge can be drawn in quite a small space. Concept

maps can also be used when a student wants to outline how she understands the topic s/he is studying and especially the relationships between the concepts of the topic.

The learning process can be strengthened with the use of concept maps. Meaningful learning occurs when new information is linked with existing concepts (Novak, 1977). With the help of a concept map you can easily see the whole structure of the domain in which the concept belongs to.

Concept maps are also effective when there is the need to represent some entirety in a compact form. The problem with this approach is, though, that people might have different insights into concepts and their meanings. These differences are usually not great enough to prevent communication (Novak, 1977). The other problem is, that the concept map of a certain topic does not have a valid, or right, structure. The author of the map can freely use subjective reasoning when structuring the concepts into a map.

Even with these problems that the concept maps have, they are nevertheless very powerful learning tools. Since viewing the data in different ways can help to gain additional insights into the data, the concept map has certain advantages. Concept maps also offer us strong tools to plan and gather up knowledge and to follow the learning process. With the help of concept maps we can assemble easily understandable figures about certain topics.

Strategic planning often deals with complex and unstructured questions. The answers are often textual and can't be presented in a compact form very easily. Operational issues have to be dealt with also, which limits the time available for strategic thinking and for going through strategically relevant information. Concept maps have the ability to present only the key concepts or central ideas belonging to a certain topic. It is possible to get an overall picture of the topic quickly. More detailed information is naturally lost in the process but in many cases this doesn't create significant problems.

3. Questionnaire tool

3.1 Questioning

When faced with a problem the obvious thing to do is to ask from a colleague or someone who we assume might have the answer to our problem. It would be even better to ask a group of people having the best knowledge and then form an opinion of the matter, since we bring in more knowledge and different perspectives. This can be a rather time-consuming task especially if the people you want to ask from are

geographically far apart and/or the group is rather large. The aim here is to strengthen the bottom-up strategic initiatives coming from those closest to the customers, competition, and technology (see. e.g. Bartlett & Ghoshal, 2002).

A web-based questionnaire system can also facilitate the externalization, internalization, and combination of knowledge (SECI-model, see Nonaka & Takeuchi, 1995). With the help of this system the gathering of knowledge is fast and easy. Socialization means transferring person's tacit knowledge to another person's tacit knowledge, which is difficult without face-to-face interaction (Nonaka & Takeuchi, 1995) and is therefore not considered here.

The questionnaire system enables managers to tap into the knowledge of their peers, subordinates, and superiors regardless of geographical distances. The questionnaire can be targeted for a very narrow group of people or a large number of respondents depending on the nature of the question or the problem.

Web-based questionnaires naturally have the limitations that the potential group of respondents is limited to those who have an internet-connection and a browser in their use, but many companies issue most of their employees with personal computers and Internet connections. However, because of this limiting factor this system might not be applicable to every organization.

The overall process begins with the formulation of the problem at hand. After formulating the problem to more or less specific questions the employee records the questions to a databank. The databank holds all questions used so that they can be recycled between different questionnaires. Then follows the creation of the questionnaire. Questions are chosen from the data bank and grouped under a desired number of sections. The sections can be used as a grouping tool and possibly to provide some guidance on subsequent questions. The overall process is presented in figure 1.
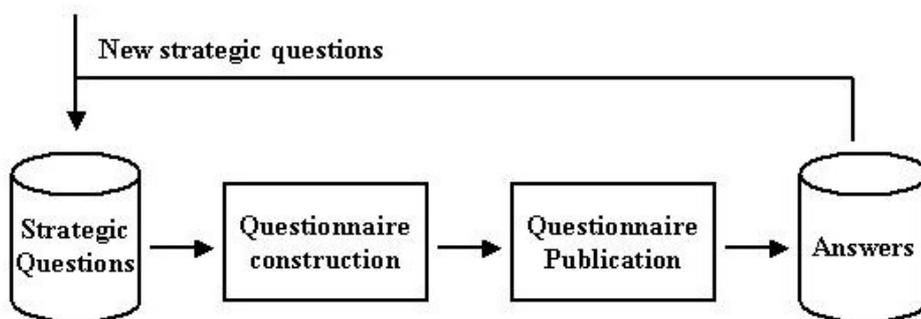

Fig. 1. The process of creating a questionnaire.

After the questionnaire is ready for publication the selected group of respondents should answer the questions by using their Internet browsers. The web address of the questionnaire is sent to the respondents via e-mail. Answering is simple, since e-mail programs usually show URL-addresses with a hyperlink. Clicking the hyperlink opens the default browser with the specified location and the respondent can begin to answer the questions. Answers are then stored in a databank for later analysis.

Normal paper surveys could be used instead of the Internet-based questionnaire process described here. The problem with paper surveys is that they are much more tedious to handle. With computer-based questionnaires answers are recorded automatically for later use. The process does not include any paper handling at all. Internet based questionnaires offer a much more simpler process and less handling than normal paper versions of a questionnaire. The primary reason for the development of this kind of application is particularly the ease and speed of use.

3.2 Analysis of answers

The answers must be analyzed to create an overall picture of the respondents' views on the problem. The method of analysis depends on the type of the question. Questions that are answered with predefined sets of options, or numerically, are fairly easy to analyze. Statistical tools and rules provide the method of analysis to these questions. Statistical analysis with a computer is fairly straightforward.

Business strategies often deal with complex and ambiguous concepts. This is why the questions related to strategic issues are often unstructured. The analysis of textual answers is rather complicated. For the analysis of these answers we use a technique based on concept maps. With the help of concept maps we can classify the answers based on the central ideas found in the answers. Figure 2 presents the basic idea of the analysis tool.

The benefits of this approach include the ability of concept maps to crystallize the central ideas and their relationships to each other. The map can be used by several persons for a quick review on the results of the analyzed answers. If the group of respondents is rather large and if the answers are lengthy it is a very time-consuming process for each strategist interested in the results to go through all answers.
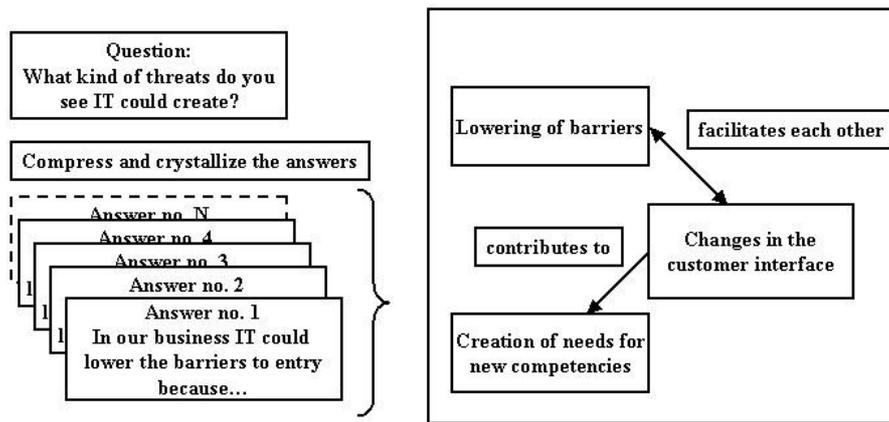
Fig. 2. Analysis of textual answers using concept maps.

Another benefit is that during the analysis there might be discovered some new relationships, or propositions, which may have not been known before. With the help of concept maps the analysis is also a creative process (Novak & Gowin, 1984). The problem of course is that the analysis is very subjective i.e. the person doing the analysis could have a personal bias, which affects the results.

The results of the analysis can be used later in the planning tool when creating the strategy. The results of a questionnaire are visible to everyone participating in the strategic planning. This way the results can be used to back up one's opinions and thoughts presented when planning the strategy, thus facilitating bottom-up strategy initiatives and sharing of knowledge. With the help of concept maps everyone using the results of the analysis doesn't have to go through all, possibly lengthy, written answers. Concept map compresses and crystallizes the answers into a quickly readable format.

4. Dialogue tool

Common knowledge among individual experts is necessary for effective integration of distinct knowledge (Grant, 1996b). The dialogue tool (figure 3) presented here is aimed for creating such a knowledge base as well as agreeing on the basic assumptions concerning the business and defining explicitly the most common concepts used in the context of strategic planning and strategic conversation. The idea here is that people with different cultural and educational backgrounds can discuss from strategic issues with clearly defined concepts. The dialogue tool is meant to complement the planning tool presented later in this paper. The dialogue tool as well as the planning tool both supports collaborative work between the strategists.
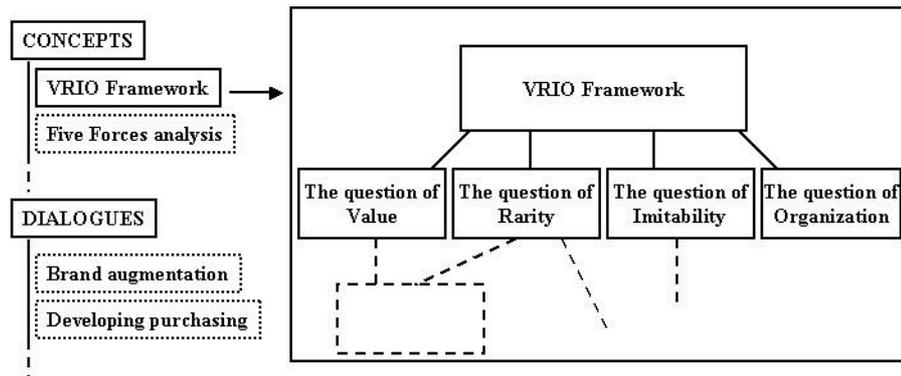
Fig. 3. The dialogue tool.

The dialogue tool can also be used to facilitate a truly open dialogue, where there is no explicit goal that the group must reach for. This kind of a dialogue is not present in negotiations or discussions where participants try to convince others that his/her view on the matter is correct (see e.g. Bohm, 1996, von Krogh & Roos, 1995). Here strategists can freely put their observations, interpretations, and thoughts on display and others can continue or augment and also comment on them.

Each node in a concept map holds three fields of information: (1) the name of the node which is visible in the concept map, (2) the actual information describing this node in full detail, (3) name of the author of the node, or at least some kind of an identification. It is important that the name of the node describes the contents accurately and in a compact form. Otherwise the map looses some of its characteristics, which were the reason we are using them in the first place.

The relationship between two interconnected nodes have the same properties as the nodes have. Again, the name of the arc, which is visible in the map, should describe accurately the detailed description of the arc.

5. Planning tool

The idea behind the planning tool (figure 4) is that strategists can engage in a real-time discussion on what the strategy should be, regardless of time zones and dates. The management team can discuss on the implications of internal and external factors on strategy. Everyone can bring his/her own expertise and knowledge to the same space where the discussion is being conducted. All this is done in real-time with possibly several participants discussing simultaneously, i.e. collaborating over the

Internet. The planning tool also works as "organizational memory" (Huber, 1991) where discussions and opinions are being recorded for later reference.
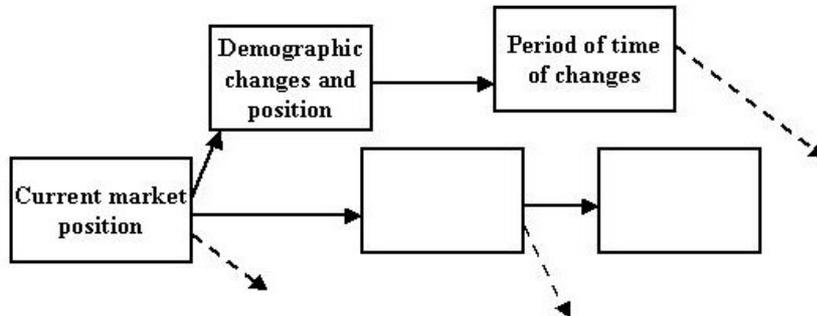

Fig. 4. Strategic planning tool.

With the help of the questionnaire tool and the dialogue tool the strategic planning group should have the necessary information and common concepts ready to engage in the actual planning. In a sense, the two previous tools act as enablers of a meaningful discussion with common concepts and well-argued opinions.

The planning tool suites very well for scenario planning and visioning. Scenario planning means that the strategy team develops alternative views of the future and plans appropriate strategies for each situation (see e.g. de Geus, 1997, O'Brien, 2004). Scenario planning is especially useful in situations where the future is highly unpredictable.

The aim here is not to try to teach everything to everyone but to provide a place where knowledge is integrated. As Grant (1996a) notes, specialization must bring some benefits, otherwise the existence of organizations comprising of multiple individuals would be unnecessary. The goal is that everyone brings in their own expertise for the use of the group and this knowledge is integrated in the environment to form the strategy.

The planning tool has similar characteristics as a concept map has, but there are some differences. Here, the discussion should be progressive, i.e. every node should take the conversation a bit closer to the goal, which in this case is the mutually agreed strategy. The discussion can diverge into different directions or branches, but all these branches should come together at the end. Differences in opinions should be agreed upon and some decisions taken. This is why there has to be a way to merge nodes and reconcile the differences in these nodes. If two nodes have parts that can't be

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reasonably reconciled it is also possible to merge only the parts that can be agreed upon and leave the differing portions of the nodes intact.

6. Future Work

Some preliminary tests with the tool have been carried out in three international companies based in Finland. These companies operate in telecommunication, metals, and construction industries. The main goal for these tests has been to get an idea of the technical status of the application presented in this paper. We can now conclude that the first verifications have been successful, but the overall construct still needs more testing. The idea is that we follow the spiral model to develop the application. We already have some parts of the whole application ready for validation tests.

In the validation we will apply the application to real strategic planning processes of different partner companies. For this to be possible we still have some work to do to resolve some of the technical issues related to the application and its effective use in a corporate environment.

7. Conclusions

We feel that the tools presented in this paper create significant opportunities to make the strategic planning process more effective. The tools help companies to better utilize the bottom-up strategy initiatives. It is also possible to raise the level of understanding of top managers, which is essential in the top-down strategic planning process.

The tools free strategists from place and time. Strategies can be made anywhere and anytime as long as there is an internet-connection available. Collaboration between strategists can be enhanced, which gives every strategist the opportunity to take an active role in the creation of strategies. Strategists can easily and quickly ask questions from anyone in the organization thus activating the knowledge and intuition of lower level employees. The results of analyzed answers can later be used in the strategic planning process by anybody involved in the strategy process in a compact and easily readable format.

The overall system requires empirical testing in real business environment before we can say anything definite about its applicability. Empirical testing is needed to confirm or reject the expected benefits. If the expected benefits do not realize it is also important to find out why this happened.

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