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Proactive vision for strategy making

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Abstract

Strategy makers have expressed the need for computer support systems, which they can readily use to monitor, diagnose, analyze and synthesize the current performance of their organization and estimate its future potential, direction and performance. The computer software industry has attempted to meet this demand for many years; however, in this context, the computer-based executive support and decision support systems developed so far have provided only partial solutions. These systems have supported either specific processes or specific activities. They have not provided executives with the kind of support that would enable them to acquire a holistic understanding of the constructs, concepts, variables, specific issues, and also the relations and interrelationships that must be monitored and mastered in strategic planning and implementation.In this paper, we present a new way to analyze the current and future states of company strategy. We have used the Continuous Strategy ontology as a basic construct thatincorporates many current strategic constructs, concepts, and ideas, culminating in an application that contains an ontology in which we have fixed linguistic statements. Through these statements, users can analyze the current strategic situation as well as future possible improvements to the current strategy. The system operates on the Internet and this is the first prototype application constructed for this purpose. The first test runs are only to demonstrate the ideas. In the future, this application will be tested in real strategy work inbusinesslife.

*Keywords:*Strategic management; Strategic leadership; Decision support systems; Top-down; Bottom-up; Continuous strategy; Framework; Strategy making;Tools

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1. Introduction

Strategy makers have expressed the need for computer support systems, which they can readily use to monitor, diagnose, analyze and synthesize the current performance of their organization and estimate its future potential, direction and performance. The computer software industry has attempted to meet this demand for many years; however, in this context, the computer-based executive support and decision support systems developed so far have provided only partial solutions. These systems have supported either specific processes or specific activities. They have not provided executives with the kind of support that would enable them to acquire a holistic understanding of the constructs, concepts, variables, specific issues, and also the relations and interrelationships that must be monitored and mastered in strategic planning and implementation.

Both executive and decision support systems (ESS & DSS) of the prior art have lacked a continuous statement of direction that would serve as a general framework for strategic management and leadership. They have also lacked a basic strategic construct and built-in concepts to guide the organization towards purposeful progress and integrate its internal as well as external worlds together in strategy making. Now, however, rapid advances in research and technology allow computer-based working environments to incorporate "soft" and "unstructured" abstract concepts, issues and problems, like those encountered in strategic management and leadership generally. In this respect, we have really entered a new era. We can now demand more and we can be more confident that strategy making and planning can also benefit from the new computerized decision support applications. Consequently, this needs new thinking, new planning, new technological software, and new approaches.

To achieve these new goals and objectives in practice, software technology must be developed so that executive support and decision support structures become easy to use and coherent with the real structures of business and the world; system architectures must emulate the reality of both organizational and individual behavior. This will empower strategy makers to gain a holistic view of the organization's activities, its operating environment, as well as the overlying world structure. Metaphors, as tools, can assist us in achieving these ends. The authors have been working for several years to develop executive and decision support systems that enhance actual decision-making through human visual perception, as well as systems for finding meanings in texts and meta knowledge formation, as with neural nets and object-oriented applications [19]. These new support systems are based on the ontological reality of organizational business constructs, concepts, variables, and indicators. They are also based on the overall conceptual framework called the 'Continuous Strategy'[18].

In this paper, we present a new way to analyze the current and future states of company strategy. We have used the Continuous Strategy ontology as a basic construct, to which we have added many current strategic constructs, concepts, and ideas, culminating in an application that contains an ontology in which we have fixed linguistic statements. Through these statements, users can analyze the current strategic situation as well as future possible improvements to the current strategy. The system operates on the Internet (www.evolutellc.com) and this is the first prototype application constructed for this purpose. The first test runs are only to demonstrate the ideas. In the future, this application will be tested in real strategy work withbusiness people as test subjects.

1.1. Continuous Continuum metaphor

The company continuum metaphor is a static and dynamic representation of a continuous company strategy, in which a company is part of the living system, in which the company is presented in terms of capital, work and people. The formation of company activities and company characteristics are formed in the company world, in terms of financing (capital), operations (work) and management (people). The formation of the supply concept in the product world, comes in terms of assets utilized (capital), structure utilized (work) and knowledge utilized (people). The formation of the demand concept in the buyer world, comes in terms of buyer assets (capital), buyer structure (work), and buyer knowledge (people). The formation of the main components of the business world, comes in terms of business assets (capital), business structure (work), and business knowledge (people). In the external world, the formation of the projections comes from the analogies of ecosystem (capital), infrastructure (work) and organized knowledge (people) [18].
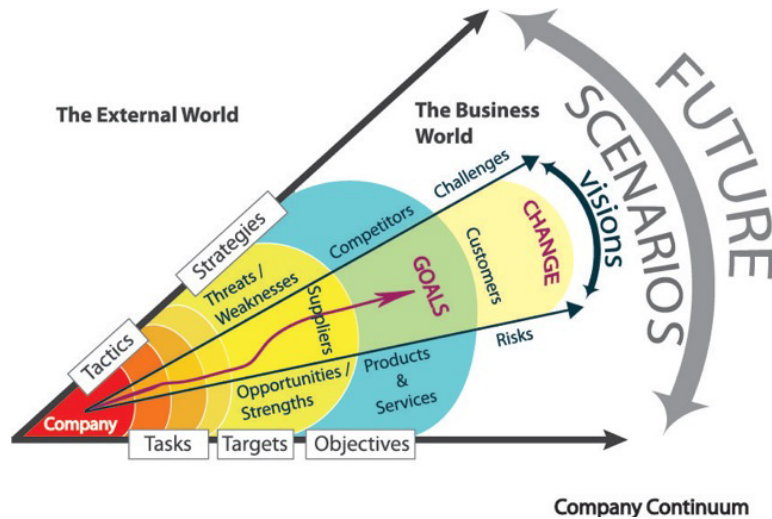
Fig. 1. Company Continuum metaphor as a template (cf. [19])

1.2. Continuous Continuum template

The visual and cognitive static and dynamic perceptions describe the mutual interdependence of the above-mentioned five world metaphors, but they do not really fulfil two important objectives: being easy to perceive in a holistic manner and also easy to understand the dynamic dimension of the content inside of these metaphors. To achieve these two objectives, it was necessary to create a sixth metaphor, i.e. the Company Continuum metaphor as a template [19]. See Figure 1.

The Company Continuum template can be envisaged by users as an integrated working method for use in a management and leadership environment. It is a concept map for navigating and combining the dynamic contents of the metaphors of Company, Product, Buyer, Business and External worldsin the chain. The template visually explains the mutual interdependence of the five metaphors, from macrocosm to microcosm. It shows the users that all company activities are started and maintained within the freedoms and constraints of the supporting frameworks provided by the five-metaphor chain, i.e. by the Continuous Strategy ontology. The template itself has an overall construction. It is self-explanatory and guides users onwards, for example, in the computer context to other templates and applications. From the first sight, the user appreciates the concept of the Company Continuum, of continual change and growth, of navigating through progressive changes in position.

Graphically, the template has two major parts: the External World and the Internal / External Company World. The External World (the shaded background of the template) represents the world we live in and gives us the outer limits for our decision making. The Internal / External Company World (the expanding, lighter area) represents the Business World, the Company World, the Product World, and the Buyer World. Straight bold arrows, representing the passage of time from present to future, indicate the borders between the two major parts of the template. The shaded areas and expanding triangles between these arrows represent the progress of the company characteristics. The Company - with its Capital, Work, and People - has a present position and a future, desired position.

The Business World describes the changes in society, the changes in the specific industry in which business is done, and the changes in related industries. The Company World organizes company characteristics internally and externally according to the company activities, relations and interrelationships. The Product World and The Buyer World describe the important balance between supply and demand.

When used to its full potential, the Company Continuum template allows active users to utilize all five metaphors dynamically, and to integrate them. They can first extract vision(s) from scenarios with the help of the information and knowledge "stored" in the projections of the External World and the Business World. Next, they can organize the goals, objectives, targets and tasks of the company, in accordance with the visions and scenarios, and with the

help of the information and knowledge "stored" in the projections of the Product World and the Buyer World. Continuous knowledge formation and improvement of company characteristics will lead to sustainable progress and growth. Integration of the projections of the metaphor chain will thus result in a new working method, via which active users can see their company as part of the living system and as a company in continuum.

There is friction between the External and Internal Worlds of the company, and this friction has many internal and external factors. A healthy company has good prospects for moving the boundaries in the targeted direction. Anailing company should first concentrate on improving its current position. Both of these movements will be described by changes in company characteristics, as well as by the curved navigation arrow on the template. Company management aims at changing these characteristics through its daily activities, short-term tasks, and long-term strategies. Management has various targets and objectives in sight. The boundaries of the company develop according to these activities.

The people who manage companies make decisions that affect the course of company performance. Continuous awareness of the position of the company with respect to its competitors, markets, suppliers, new entrants, etc., give the management group better possibilities to predict changes. To make a change happen, it is important for management to continuously visualize and describe scenarios and visions, to define goals, objectives and targets, and to direct and lead all tasks and company activities. The Company Continuum template is targeted at making this work easier and facilitating decision making. The template is directly convertible for use in the human-computer interfaces of executive decision making. The fields behind each word and phrase in the template can be activated so that the user can click on them with a mouse, and thus obtain more detailed information and knowledge on each important management issue. The people who manage companies carry the responsibility for, and should be committed to, the development of the company. If they are active users of the metaphor chain and its computer applications, this responsibility and commitment will also become an integral part of the support framework of the metaphors. In other words, the responsibility and commitment will be conditional by the freedoms and constraints of the metaphor framework.

Integration of a top-down overview with a bottom-up market-driven view will result in a holistic perception of the company, its business issues, interrelationships, characteristics, present position and progress in the competitive environment. If this visual perception can, on a continuous basis, be instilled into decision makers as a shared vision, it will give them improved competence in strategic management and will diminish the misunderstanding, isolation and conflict that may otherwise occur. This will result in improved strategies and business activities for the survival, progress and continuity of the company.

2. The ontology of the application

2.1. The name of the application

We have called our application Strategus, originally meaning the leader or commander of an army, a general (cf. http://www.thefreedictionary.com/Strategus). In Ancient Greece, a general, i.e. strategus*(Concise Encyclopedia)*, also worked as a magistrate. "Cleisthenes introduced an annual board of 10 *strategi* in Athens ofcommanders of the army; one or more, all equal, were responsible for each operation. In the 5th century BC, they gained political influence, in part because they were elected and could be re-elected, thus were able to entrench themselves in office. In the Hellenistic Age, they were the supreme magistrates in most federations and leagues. In Egypt (3rd century BC–4th century AD), they were civil governors."(cf. http://www.merriam-webster.com/dictionary/strategus)

2.2. Ontology of Strategus

The whole application is divided into nine main classes: Thinking habits, Strategy making, Added-Value Creation, Future Competitiveness, Business Strategy Measurement, External Strategic Environment, Intellectual Capital, Competitive strategy - Competitive forces, and Tactics. The ontology follows the ideas presented in the Continuous Strategy Template, so that each of the main components can be understood from it. The main arrows in the template are: capital, work, as well as the third dimension, people. These two arrows and the third dimension create a triangle, which forms the area of the active company. This company then moves to a new position in the

template. The main classes are derived from our literature research, which, in turn, has covered famous strategy books listed as references[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17]. From the main classes, 47 subcategories were found to be important through our detailed analysis of the content of the main classes. As an example of this methodology,Future Competitiveness was divided into the following subcategories:sense of direction, understanding thedifference of the future, strategic intent, and future possibilities. All the other eight main classes gained their internal contentin a similar way.

After this, the ontology was filled with statements around each subcategory. As an example of this, we can present here the statements of the concept ofstrategic intent. The statements which belong to the strategic intent were created as follows: 1) I think that current capabilities and resources are manifestly insufficient forthe task. 2) Our mission and purpose leads my colleagues and me to show them respect and loyalty. 3) I have the feeling that everyone in the company knows how their individual contribution links into the company's overall aspiration. 4) I think, in general, that larger or other competing companies are able to use resources better than us. Strategic intent is relatively difficult to define. Here, as shown with the statements, the aim is to catch the idea of how management people see their resources towards the future, i.e. how the resources are allocated forthis activity. Companies must have many initiatives through their resources.

The overall ontology created by the above-mentioned structure with all the statements is a large Excelspreadsheet, which cannot be shown in this article. By testing the application,the test subjects get an idea of the whole structure of Strategus.

3. Tests with the Strategusapplication

3.1. Test environment

The Strategusapplication was tested at the Tampere University of Technology, Pori campus,in Finland. The test subjects were Master's thesis students on the organizational behavior and leadership course. The number of test subjects was 17. 16 of the test subjects were part-time students and could use the application so that they referred to the use inside their own companies.

3.2. Test runs

The test runs were made over a two-week period. Students were asked to give their comments concerning the application content as well how they saw the usability of the application. The application as such worked fairly well, however some of the statements needed tobe converted to make it easier to understand the meaning of the statement as well as the direction targeted with the fuzzy scale.
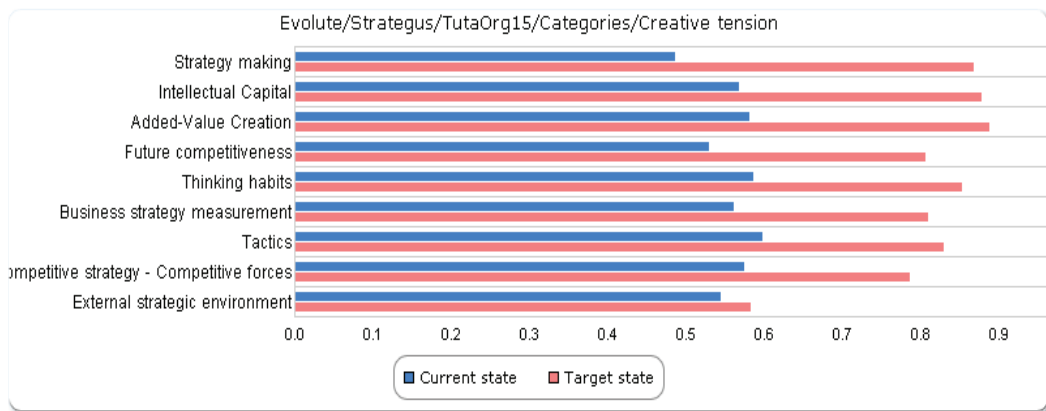

Fig. 2.First test results with the Strategus application.
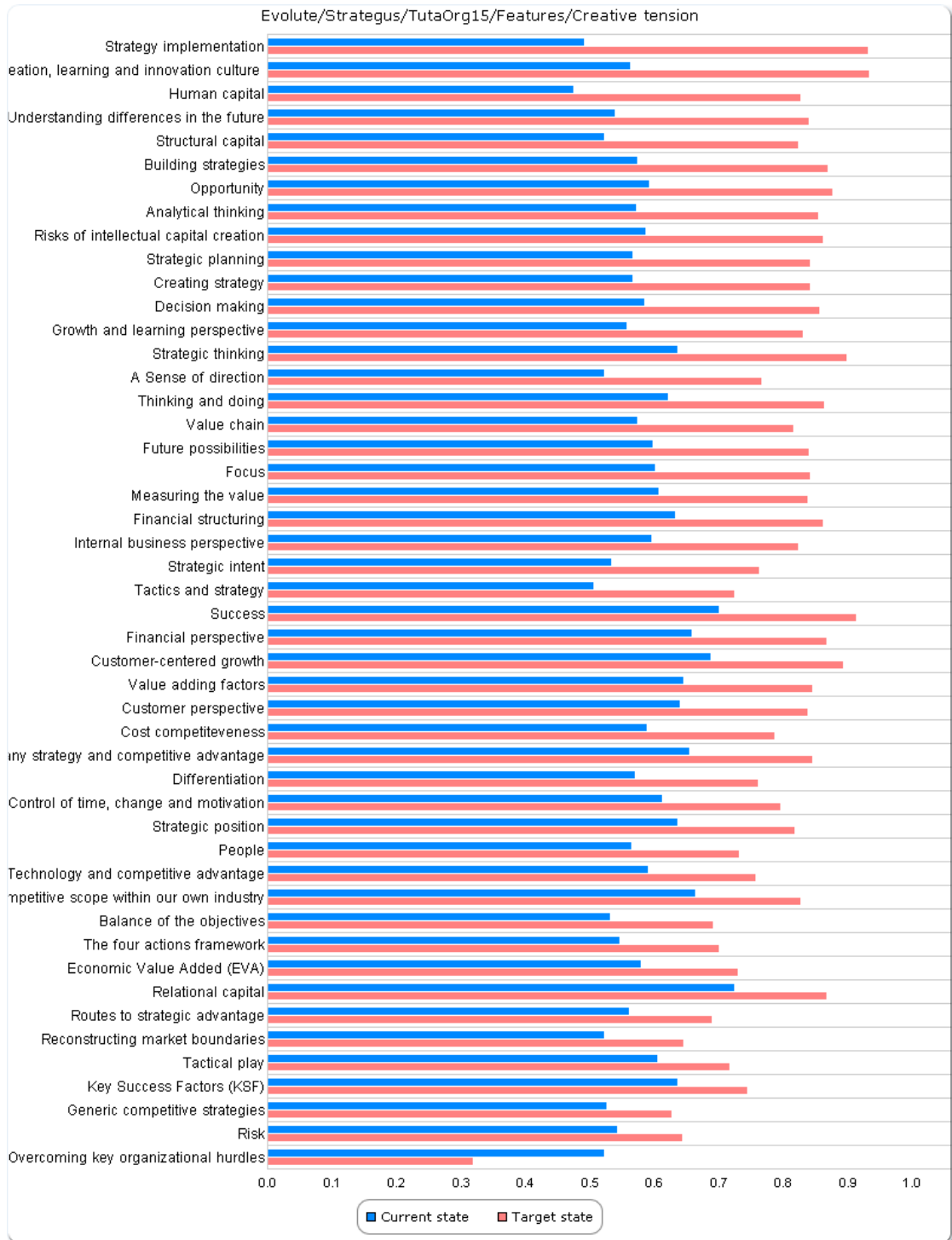
Fig. 3. First detail test results with the Strategus application.

4. Results

All the results were positive, although many small improvements should be made before any commercial application launch. The application operates well, but the content is in some parts misleading, because the statements are difficult to perceive and interpret. However, the operational side is good and the fuzzy logic part operates well. In addition, the students' comments revealed that the content itself is good and the results from the current situation as well as from the targeted future situation seem to be "correct." More validation work is however needed before any real business tests can be started. The test results are presented in Figure 2. The figure contains the main categories: strategy making, thinking habits, added-value creation, intellectual capital, competitive strategy, future competitiveness, business strategy measurement, tactics, and external strategic environment. All these categories show a positive creative tension, i.e. proactive vision.

The data of the test runs cover data from 190 statements with three different evaluations: importance, current, and future. One test contains 190 x 3 data points, i.e. a total of 570. With 17 students, we therefore obtained 9690 data points.

Detail results of the test runs are presented in the Figure 3.In the figure "overcoming key organizational hurdles" and "risk"have negative proactive vision.There is also All other has minor or major proactive vision. In the results we can find that knowledge creation, learning and innovation culture comes two times as well as some of the names are too long. In the next version these errors will be corrected.

5. Discussion

TheStrategus application is in its early phase and needs a lot of work before it can be used in a real business situation. We can however conclude that ontology and meaning-based applications should be applied to strategic planning and strategy implementation, because numerical analysis is always based on past data or on some anticipated future simulation with numbers. By giving the management team the chance to find out the internal ideas, as well as their own internal assumptions of the future and also the importance and weight of specific concepts inside the company, it might be possible to reveal a collective view of strategic planning and strategy making. After all, the future is created through human competence and co-operation. Without a common goal and objectives, new more sustainable and ingenious strategies are impossible to create.This novel way of analyzing, evaluating, and synthesizing current and future strategic directions is new to company management and leadership. Strategus uses meaning and content-based methods, which can give an extra competitive advantage to the companies thatare going to use it after the real business test runs.

Acknowledgments

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