Strategy Needs Structure
Structure Needs Ontologies – Dynamic Ontologies Carry Meanings

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Keywords: Strategy, Strategic Management, Fuzzy Logic, Applications, Decision Support Systems, Ontologies, Methodology, Statements, Evaluations.

Abstract: In our long-term research we have created a new management and leadership methodology, which can be used for strategic management purposes to manage change and to lead the company resources efficiently and effectively towards the new future. Our research methods are based on management and leadership ontologies, with which we can capture the current and future views of personnel for use in strategy making and strategic management. The evidence we have obtained originates from our research with our ontology-based research instruments and test runs with fuzzy logic based computer applications.

1 INTRODUCTION

People involved in strategic thinking, strategic planning, strategy making and strategy implementation try to predict, delineate and influence the future state of their organization. The work they do deals with the linkage between the organization's scenarios, visions, goals and objectives and the organization's current external and internal world. A prerequisite for the success of their strategy-making activities work is that all the people involved and also other persons in the organization arrive at a shared vision as the basis for development and progress. Often though, the process of strategic thinking and strategy making is fraught with misunderstanding and conflict, especially at the beginning. The participants may lack a shared understanding of the future path of the organization; they may not have a common view of its operating environment or a shared appreciation of the overlying world structure or underlying constructs and concepts of their company characteristics. If, combined with this, management issues in general and the characteristics of the organization in particular are cognitively perceived in different ways by different participants, the strategy-making process becomes even more complex and problematic, especially its implementation. This is true for any organization, public or private. Faced with the aforementioned problems, strategy makers continuously express the need for comprehensive, reliable and commonly assimilable data, information and knowledge, that they can use to monitor, diagnose, analyse and synthesise the current performance of their organization and to estimate its future potential.

2 THE APPLIED STRUCTURE

We have now worked several years to develop executive and decision support systems that will enhance actual decision-making through human visual perception as well as to meanings in texts as well as meta-knowledge formation. These new support systems are based on the ontological reality of organizational constructs, concepts, variables and indicators (cf. Kantola et al., 2010). They are also based on the overall conceptual framework called the Continuous Strategy (Vanharanta 1995).

The Continuous Strategy ontology is a construct or framework for strategic planning processes. The framework is derived from metaphorical insights into "the Company", an "organism" seen as part of the living system. The Continuous Strategy ontology is supported by a chain of construction metaphors: the External World, the Business World, the Company World, the Product World and the Buyer World. These metaphors represent conceptual models, and they are used to construct a coherent

picture of the real world that exists in and around the company.

3 EXAMPLES

For With the following examples, we address collective change and dynamics in a new fashion. We have created many ontology-based management and leadership constructs and concepts and applied those ontologies to Internet-based computer applications. Several case studies have shown that we can successfully reach a collective understanding of current and future situations using these applications, allowing management to obtain deeper information from the grass-roots level rapidly (cf. Ready and Truelove, 2011). This also enables managers to deepen their knowledge of the current position of their company, as well as achieving valuable information concerning its future possible interests.

3.1 The Folium and Talbot Applications

Folium and Talbot are applications (Paajanen, 2006) that are used to help the organization's management in the decision-making process when target development plans are made to improve and support organizational knowledge creation (c.f. Nonaka's SECI process, 1995) and organizational learning (c.f. Tannenbaum's model, 1997), on an objective level. Both areas have a strategic nature. On a practical level, Folium is used within the organization to evaluate features that describe activities, functions and practices concerning organizational knowledge creation, current and future. Talbot, in turn, is used to evaluate features that describe activities, functions and practices concerning organizational learning, current and future. Folium and Talbot contain linguistic indicative statements, which describe the features of knowledge creation and learning organization in practice, and respondents are asked to evaluate their current reality and future vision as they perceive it according to these statements. As a result of the evaluation, a proactive vision is visualised, i.e. the gap between the current reality and future vision. The reasoning from the indicative statement evaluation to the visualised proactive vision is made with fuzzy logic; the statements are semantic entities and the ontology is the information resident in a knowledge base (Zadeh, 1973). Figures 1 and 2 show visual sample results from a technology

company. The concepts in the ontology are shown on the left (in Figure 1 the cut words are: Merging new knowledge, Spreading new knowledge and Spending time). On the right, we see graphs showing how the stakeholders perceived the current reality and future vision levels of these concepts. The current reality level is represented by the thinner blue bars. The level refers to how well this concept is organized at work. The difference between the black curvy lines is the proactive vision (c.f. Creative tension by Senge, 1995) that tells which concepts and how much should be improved at work. The length of the horizontal bars shows how much the stakeholders' perception about these concepts deviate, i.e. it shows the asymmetry in their knowledge and experience. In Figure 2, the Talbot results show learning asymmetry results in a similar way as in the knowledge creation example.

3.2 Evidence from the Test Runs

The sample graphs above show quite clearly:

• A holistic picture of knowledge creation and learning, since we can see what the concepts in the ontology are. This is important in order for stakeholders (workers, managers, administrators, funders, etc.) to see what is relevant.

• Asymmetry in terms of knowledge creation and organizational learning. There are multiple perceptions of knowledge creation and organizational learning, at least, according to the work roles, stakeholder roles and individuals.

• A bottom-up view of important strategic issues: current state and proactive future state. Requirements to management and leadership are revealed. It would not be possible to guess something similar than for example Figure 1 and 2 tell to managers and leaders. That is why this is a great way to provide really easy and useful tools for strategic management and leadership.

4 CONCLUSIONS

The software industry has attempted to meet the demand described here for many years. In this context the executive support and decision support systems so far developed have provided only partial solutions. Such systems have supported either specific activities or specific processes; they have not provided executives with the kind of support that would enable them to acquire a collective, holistic understanding of the issues, concepts and constructs
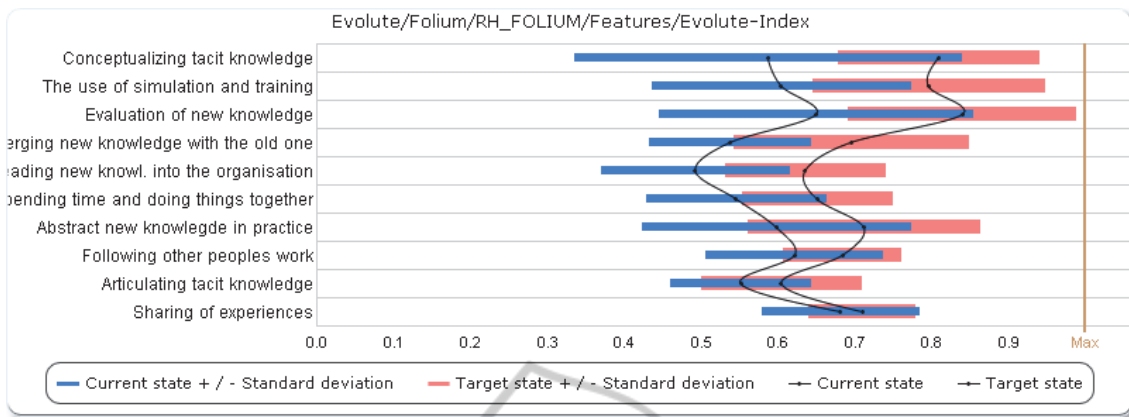
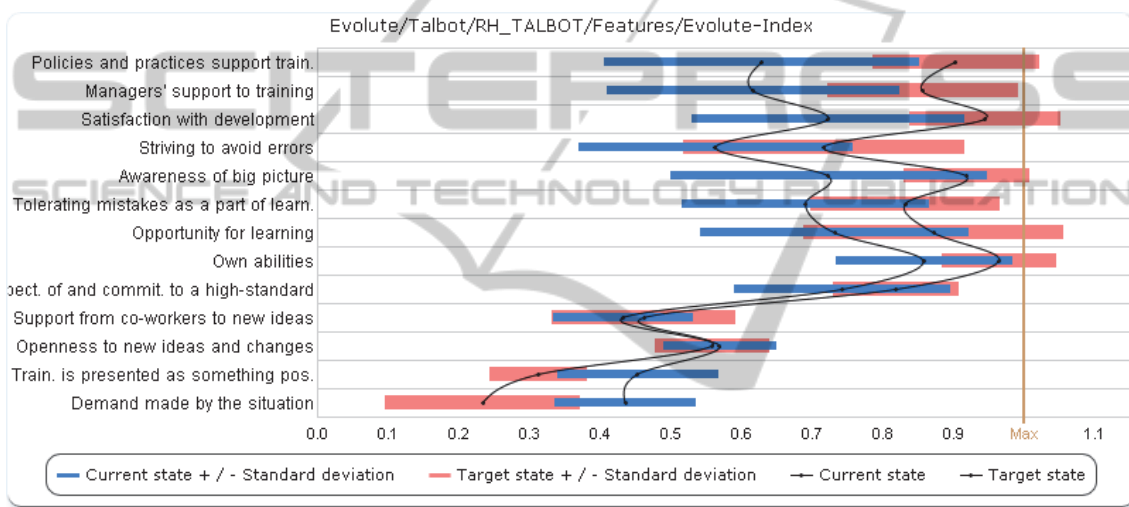Figure 1: Folium results – Knowledge creation asymmetry and creative tension (Evolute database, 2012).

Figure 2: Talbot results – Learning asymmetry and creative tension (Evolute database, 2012).

and also the relations and interrelationships that must be mastered in strategic management. We show that by using their employees, businesses can be more effective and responsive to daily fluctuations and changes. The change intelligence capability in the employees' conscious experience can be turned to active competence in the workplace. Our work can help bring the employees closer to the theoretical side of management and leadership and thus help their managers and leaders run the organization more effectively.

ACKNOWLEDGEMENTS

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