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Strategic thinking in turbulent times

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Abstract. *The purpose of this paper is to present a structural analysis of strategic thinking spectrum in turbulent times. Business excellence cannot be achieved without a well-defined strategic thinking spectrum able to elaborate and implement strategies in a fast changeable and unpredictable business environment. Strategic thinking means to think for a desirable future which can be ahead 4-5 years of the present time and to make decisions to the best of our knowledge for that unknown business environment. Thus, the research question is: How can we conceive the spectrum of strategic thinking such that we shall be able to deal with a complex and unknown future in achieving a competitive advantage? The methodology used to answer this question is based on metaphorical thinking, and multidimensional analysis. I shall consider four main dimensions: time, complexity, uncertainty, and novelty. On each of these dimensions I shall analyze the known thinking models and their attributes with respect to request formulated in the research question. Then, I shall choose those thinking models that correspond to the future characteristics and integrate them in a continuous spectrum. On each dimension I shall consider three basic thinking models. On the time dimension they are: inertial, dynamic and entropic thinking. On the complexity dimension they are: linear, nonlinear and systemic thinking. On the uncertainty dimension they are: deterministic, probabilistic and chaotic thinking. Finally, on the novelty dimension we have: template, intelligent and creative thinking. Considering all requirements for the unknown future, we conclude that strategic thinking spectrum should contain: entropic, nonlinear and systemic, probabilistic and chaotic, intelligent and creative thinking models. Such a spectrum increases the capacity of our understanding and as a consequence it enhances the capability of making adequate decisions in conditions of complexity and uncertainty.*

Keywords: strategy, strategic thinking, competitive advantage, complexity, uncertainty, decision making.

Introduction

Strategic thinking means to think about the future and how to achieve a competitive advantage in times of fast and unpredictable changes. The difficulty of strategic thinking comes from the fact that future does not exist, except in our mind and it represents an unknown domain in terms of technologies and business evolution or disruption. Future is not anymore a simple extrapolation of the present situation and may bring many surprises due to disruptive technologies and innovations (Downes and Nunes, 2014; Murgatroyd, 2015; Syrett and Devine, 2012).

Understanding strategic thinking means understanding future, which is directly related to understanding time. That bring us to metaphorical thinking (Lakoff and Jonson, 1980, 1999) and time perception (Boroditsky, 2000; Grondin, 2010). Differences in the perception of time come mostly out of different interpretations for its *direction* and *motion*, interpretations generated by different cultures and life experiences. Basically, there are two different perspective of time interpretation: ego-moving and time-moving. In the ego-moving perspective, time is stationary and we move through it from present toward the future. In the time-moving perspective, we are stationary and time is moving toward us. In

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both perspectives past is situated behind us, and future is situated in front of us. The complexity dimension reveals how is structured the cause-effect relationship. The uncertainty dimension reflects the nature of events and the way we think about them. Finally, the novelty dimension reflects the degree of novelty in constructing solutions for generic problems (Bratianu, 2007).

The conceptual framework we construct is presented in the following considering thinking models aligned along each of these above dimensions: time, complexity, uncertainty, and novelty. Their analysis is performed with respect to their capacity to explain events in a turbulent world and to elaborate strategies for a desirable future aiming at achieving a competitive advantage (Dima et al., 2016).

Time dimension

The *inertial thinking model* is very simple and does not contain *time*. It is a timeless model. It reflects the inertial nature of things like in physics. This thinking model is necessary since it deals with routines and many unconscious processes, which gives us the feeling of control and security. However, inertial thinking cannot understand change since change is a process done in time. As a consequence, inertial thinking opposes change and people with a dominant inertial thinking will be always resistances to change. Organizational change becomes very difficult if managers have a dominant inertial thinking mode (Burnes, 2009). Since strategic thinking creates strategies which are implemented through organizational change, and inertial thinking opposes change, this mode of thinking cannot be a component of strategic thinking spectrum.

The *dynamic thinking model* includes time as a basic variable. That means that dynamic thinking allows us to understand events and phenomena which develop in time. Dynamic thinking can accommodate change and represents much better reality than inertial thinking. We learn dynamic thinking in schools at physics as a result of the Newton's laws of motion. However, dynamic thinking is based on reversible processes and time appears only with its quantitative dimension. A reversible process has the property of returning back to the starting point, going through the same equilibrium states. Since in a reversible process we can come back to the initial state it means that in our journey there is no future or past. There is a continuous process. That is a strong limitation for understanding real processes, especially social processes which are not reversible, like in physics. Social and organizational processes are reversible. That means that dynamic thinking model cannot be a component of the strategic thinking spectrum.

The *entropic thinking model* represents the most advanced model on time dimension (Bratianu, 2007; Bratianu and Orzea, 2013). The key concept used to describe this model is *entropy*, a concept introduced first in thermodynamics by Rudolf Clausius and then extended in many other fields of science and engineering (Atkins, 2010). Entropy is a measure of irreversibility, and all natural and social processes are irreversible. In this model, time has two dimensions: a *quantitative* dimension represented by measuring duration in seconds, minutes, or hours, and a *qualitative* dimension represented by its orientation. Time has direction, from *past* to *present* and from *present* toward *future*. That means also time orientation:

Past >>> Present >>> Future

This orientation comes from irreversibility of processes, from the real impossibility of coming back any time to the starting point. Scientists emphasize that entropy introduces a

time arrow. Thus, entropic thinking understands change and allows us to think about the future of organization and the future of business. Future exists only in our minds and people able to think about the future and define strategic objectives are visionary people. Strategic thinking is about the future and visionary leaders (Kotter, 2012). Thus, it incorporates entropic thinking.

Complexity dimension

The *linear thinking model* is the simplest model on the complexity dimension representing the crudest approximation of any complex phenomena. It is like in geometry when a curve is approximated by a linear segment. Due to its simplicity and easiness in understanding the complex world, linear thinking is a dominant monochromatic thinking model. The fundamental characteristic of this model is the linear correlation between inputs and outputs of a given process. That means that for any given linear process the output is proportional with the input. The key word here is *proportionality*.

Since linear thinking is dominant in our society, we may say that our life has been linearized through education and different social mechanisms. For instance, time is a linear dimension of our existence. Most of the measuring systems designed for evaluation of different physical properties of real objects and phenomena are linear (i.e. measuring length, surface, volume, temperature etc.). Linear thinking is based on the mathematical properties of linear spaces (Bratianu, 2009). Budgetary salaries are linear, European university diplomas are linear and many other social activities and legislation are in their essence linear. It might be strange but products like Big Mac or Subway sandwiches are based on linear thinking. They are modular products obtained by summation and not by integration. We need linear thinking but not in a dominant way. Linear thinking cannot solve problems that are complex and have a nonlinear structure or nature. For instance, knowledge fields are nonlinear, emotions and feelings are nonlinear, organizational culture and organizational intelligence are nonlinear, change management is nonlinear, innovations are nonlinear and many other important processes with face in our daily life. Future cannot be linear which means that linear thinking cannot offer adequate solutions for future problems. Linear thinking cannot be a component of the strategic thinking spectrum.

The *nonlinear thinking model* is based on nonlinear mathematical correlations between inputs and outputs of complex processes. These correlations can be polynomials, exponentials, trigonometric functions or logarithmic functions. Unlike a Big Mac product obtained as an aggregation of several different food layers with different tastes, a chicken soup is a result of an integration process due to boiling. All initial tastes disappeared into a new integrated taste which is the soup taste. That is a nonlinear process. The thinking model able to understand that is nonlinear (Bratianu, 2007). Knowledge creation and sharing, intellectual capital, emotions and emotional intelligence, values and spiritual intelligence are nonlinear phenomena and their understanding needs nonlinear thinking models (Bratianu, 2011; Gladwell, 2005; Goleman, 1995; Kahneman, 2011; Lefter et all, 2011). In management, complex nonlinear problems cannot be decomposed into several simpler problems and solved sequentially since that approach changes the nature of the problem. Peter Senge (1990, p. 67) explains that issue using a beautiful metaphor: "Incidentally, sometimes people go ahead and divide an elephant in half anyway. You don't have two small elephants then: you have a mess. By a mess, I mean a complicated problem where there is no leverage to be found because the leverage lies in interactions that cannot

be seen from looking only at the piece you are holding". The nonlinear thinking model should be a component of the strategic thinking spectrum.

The *systems thinking model* is the most advanced model on the complexity dimension. The main difference between this model and the previous ones is that we consider processes composed of many activities that interact continuously, having many variables and correlations between inputs and outputs. Most of the activities are nonlinear and some of them may have conflicting behavior. "Living systems have integrity. Their character depends on the whole. The same is true for organizations; to understand the most challenging managerial issues requires seeing the whole system that generates the issue" (Senge, 1990, p. 66). That means to apply systems thinking. Usually, this thinking model is learned in engineering schools since technological systems cannot be designed and produced without an adequate systems thinking. Systems thinking makes use of both rational and intuitive thinking, and this property makes it suitable for constructing a vision for the future. Systems thinking is a part of the strategic thinking spectrum.

Uncertainty dimension

The *deterministic thinking model* is based on the idea that things and events must be well-defined and determined before they happen. That means to be certain. Deterministic thinking is based on certainty, when events can have only two possible states: to happen, when their probability equals one, and not to happen, when their probability equals zero. Deterministic thinking is learned in schools as a result of studying science and the conservation laws of energy, mass, and momentum. For instance, heat will always be transferred from a body with a higher temperature toward the body with a lower temperature. We are sure about that phenomenon due to the second law of thermodynamics. Deterministic thinking is used in creating time tables for trains, airplanes and for different working systems. Engineers design and construct technologies based on deterministic thinking. Thus, deterministic thinking is necessary, but it should not be used in domains where events are not certain. Since events are certain and we know their attributes, the uncertainty is zero. That means that there are no risks in decision making. Human mind prefer this mode of thinking since it is adverse to risks and uncertainty. Since strategic thinking is focused on future and future is full of uncertainties, the monochromatic model of deterministic thinking cannot be a component of the strategic thinking spectrum.

The *probabilistic thinking model* is based on the idea that uncertainty is the rule and not the exception. In nature, society and life events do not have certain outcomes. Events occurrence has a probabilistic nature and they may happen with some probabilities (Makridakis et al., 2009; Taleb, 2004, 2007). One of the most known models of probabilistic thinking is the weather forecast. We learn from TV programs, newspapers or from our smartphone about the weather but we don't know for sure that the forecast will happen. Making decisions in conditions of uncertainty is more difficult than when everything is sure because uncertainty creates risks and human mind is adverse to them (Kahneman, 2011; Hastie and Dawes, 2001; Knight, 2014). Probabilistic thinking can be developed through education which emphasizes uncertainty and risk taking. The probabilistic thinking model is adequate for dealing with the future and it will be a component of the strategic thinking spectrum. Probabilistic thinking should be used in any business strategy formulation and economic forecasting (Dima and Vasilache, 2013; Miron et al., 2009).

The *chaotic thinking model* is much more complex than all the other models since it aims at understanding the deepest structure of natural and social phenomena. It is based on chaos theories, which have in common the integration of deterministic and probabilistic logics in a quite new and hard to describe manner (Bird, 2003; Gleick, 2008; Stacey, 2001). Basically, chaos means to create order in disorder through interactive processes that have a sensitive dependence on initial conditions. According to Gleick (2008, p. 23), "In science as in life, it is well known that a chain of events can have a point of crisis that could magnify small changes. But chaos meant that such points were everywhere. They were pervasive. In systems like the weather, sensitive dependence on initial conditions was an inescapable consequence of the way small scales intertwined with large". Future is totally unknown but it depends on present, which means that it is sensitive to initial conditions. Understanding the interactive phenomena that can generate chaos one can be better prepared for creating good strategies for the future. Thus, chaotic thinking is a part of the strategic thinking spectrum.

Novelty dimension

The *template thinking model* is the simplest one on this new dimension. It is based on well-established structures or templates one must follow. For instance, writing this paper is done by using a template designed by the conference organizers. This template has two functions: to make my work easier, and to assure a certain degree of uniformity for all the papers. This model does not contain any novelty since it is a way of using known things in a standard way. It is a result of the codification strategy applied to knowledge and decision making. Such a thinking model is very useful in performing managerial routines but it is not capable of coping with future events. Thus, template thinking cannot be a part of the strategic thinking spectrum.

The *intelligent thinking model* is more advanced than the previous one and reflects the processing capability of a decision maker in choosing the best solution for a given operational context. There is no new knowledge creation, but the solutions offered by such a thinking model may bring new ideas as a result of optimizing the whole context. Intelligence is a processing capability and thus it can optimize the available options and find the best out of them based on some decision criteria (Gardner, 2006). Intelligent thinking is very flexible. It searches for many alternatives of the emergent problem and for many possible combinations of all known data, information and knowledge such that from all these combinations to produce the best answer for a given problem and a given context. Intelligent thinking is necessary for creating strategies since it allows us to optimize solutions. Thus, intelligent thinking is a part of the strategic thinking spectrum.

The *creative thinking model* generates new knowledge useful for new products and services (Nonaka and Takeuchi, 1995). The creative thinking is necessary especially when context is changing or there are new initial and boundary conditions for the problem to be solved. Creative thinking makes use of our intuition and imagination much more than of our logical thinking. Thus, creative thinking is associated to nonlinear and probabilistic or even chaotic thinking models. In creative thinking the lateral thinking component is very important (De Bono, 1994). Creative thinking is essential in developing innovation, which can be done incrementally or in a disruptive manner (Christensen, 2003). Incremental innovation is favoured by a culture which is averse to risk, while disruptive innovation is stimulated by a risk taking culture. Companies like Apple, Microsoft, Google, 3M, Facebook,

Alibaba and others became successful for stimulating creative thinking and implementing creative strategies. The creative thinking model must be a component of the strategic thinking spectrum.

Conclusion

The purpose of this paper is to construct a spectrum for strategic thinking, based on the metaphorical analysis and the principles of grounded theory. The framework of present research is based on the following dimensions: time, complexity, uncertainty, and novelty. On each of these dimensions I have defined three thinking models with different characteristics and I analyzed which of them can be useful in developing strategies for the future in turbulent times. The final composition of the spectrum is the following: entropic thinking (time dimension), nonlinear thinking and systems thinking (complexity dimension), probabilistic thinking and chaotic thinking (uncertainty dimension), intelligent thinking and creative thinking (Novelty dimension). Thus, strategic thinking is able to deal with an unknown and unpredictable future in identifying opportunities for business and designing strategies for achieving a competitive advantage.

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