

Abstract. *The purpose of this paper is to present a conceptual analysis of organizational culture modeling in the framework of system dynamics. Tom Peters and Robert Waterman demonstrated through their seminal research that organizational culture constitutes one of the most important key success factors in any company trying to achieve excellence in its business. Organizational culture is a strong nonlinear integrator of the organizational intellectual capital acting especially on the emotional knowledge field, and contributing significantly to the motivation of employees. Modeling organizational culture is a challenge due to its complexity and nonlinear phenomena.*

Keywords: integrator, modeling, organizational culture, system dynamics.

ORGANIZATIONAL CULTURE MODELING

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1. Introduction

Whether we want it or not, we all are born within a certain culture, we develop and set ourselves within certain cultural horizon and we all are both creators and receivers of culture, in the same time. Thus, in order to understand ourselves, we have to learn first how to analyze culture's signs, values, and symbols, the way they influence our thinking model and behavior, and so on (Lakoff and Johnson, 1999; Schein, 2004). According to Zohar and Marshall (2004, p. 3), that means to consider our spiritual intelligence and spiritual capital, “*Spiritual intelligence is the intelligence with which we access our deepest meanings, values, purposes, and highest motivations. It is how we use these in our thinking processes, in the decisions that we make, and the things that we think it is worthwhile to do.*”

Metaphors and symbols, stories and myths, ceremonies and rituals, norms and rules of the games, the organization's philosophy (attitudes and beliefs), declared and undeclared values, as well as the most profound convictions, all these represent elements of the organizational culture. None of these, individually, means organizational culture, but all of them together reflect the concept of organizational culture. This is not something given to an organization, but rather what that organization actually is.

This organizational culture was initially considered a way of emphasizing integration and internal coordination. Its great importance in an organization's adjustment to environmental conditions was only later acknowledged, such that at the beginning of the new century there was the idea of necessity of a strong, yet flexible organizational culture in designing the behavioral norms and patterns, due to the continual changes that need to be assimilated (Baumard, 2011; Collins and Porras, 2002; Cooper, 2002).

There are numerous attempts to define the concept of organizational culture. Thus, Becker and Geer (as cited by Redman and Wilkinson, 2009) bring into discussion a set of common understandings, while Geertz (1973) emphasizes the fact that one may speak of a certain pattern of meanings passed through from generation to generation that has taken the shape of symbols, a system of inherited conceptions expressed in symbolic shape and through the medium of which people communicate to each other, continuing and developing their own attitudes towards life.

Deal and Kennedy (1982) went further and defined the organizational culture as a system of expressed informal rules that impose a certain general conduct. Griffin and Moorhead (2005) suggest that an organizational culture represents a set of values that help people in an organization in order to better understand which of their actions are considered acceptable or not acceptable. A significant contribution has been done by Hofstede (1991) who defines culture as being a collective mental programming meant to differentiate the members of a group or a certain social category out of the other groups' members or other social categories. Regardless of the perspective, special attention is given to values, beliefs, expectations which are shared within a group and/or organization and that in turn allow the environment to make sense and to induce a certain conduct.

When discussing about the organization's culture it is important not only to observe *physical elements* – the way employees dress, the way the furniture, paintings and photos on the walls are arranged, the openness and generosity of space, but also by noting *communicational elements* – the way discussions take place within the organization, the general conduct, the language, the flexibility and capacity to adapt. Also *patterns of behavior exhibited by employees* (this might included ceremonial events and written and spoken commands), and the *physical manifestations of a company's behavior* such as written rules, office layout, organizational structure, and dress codes can reveal a company's culture. The explanation relies on the many aspects of a culture: a) *historical* (social heritage, tradition passed on to future generations), b) *behavioral* (shared, learned human behavior, a way of life), c) *normative* (ideals, values, rules for living), d) *functional* (the way people solve problems of adapting to the environment and living together), e) *mental* (a complex of ideas, learned habits for social control), f) *structural* (patterned and interrelated ideas, symbols or behaviors), and nevertheless g) *symbolic* (based on arbitrarily assigned meanings shared by an organisation). For that, when an organizational culture's analysis is required, it has to be remembered the *multi and inter disciplinary* character of this field (psychology, sociology, medicine, history, economy). Actually, this is what it makes so difficult the adoption of a unique definition (Reiman and Oedewald, 2002).

Sure is only the fact that an organizational culture is: a) *holistic* (it represents the result of an integration process); b) *connected with the history* (it shows the organization's evolution); c) *anthropologically obtained and socially founded* (it is created and maintained by the organization's members). It is a cumulus of conscious and unconscious elements, which are also rational and irrational, individual and group elements, revealing dynamic connections having a strong impact on the organization's performances (Brătianu, 2007).

Organizational culture is a powerful nonlinear integrator of the intellectual capital, as suggested by Brătianu (2008; 2011). Organizational integrators are considered to be "*powerful fields of forces capable of combining two or more elements into a new entity, based on interdependence and synergy. These elements may have a physical or virtual nature, and they must possess the capacity of interacting in a controlled way*" (Brătianu, 2011, p. 8). The synergy property makes it possible to generate an extra energy or power from the working system. It makes the difference between a linear system and a nonlinear one. In a non-linear system situation, the final output is bigger than the sum of all the individual outputs. The most important nonlinear integrators are: leadership, management, organizational culture, technology and processes.

2. Modeling organizational culture

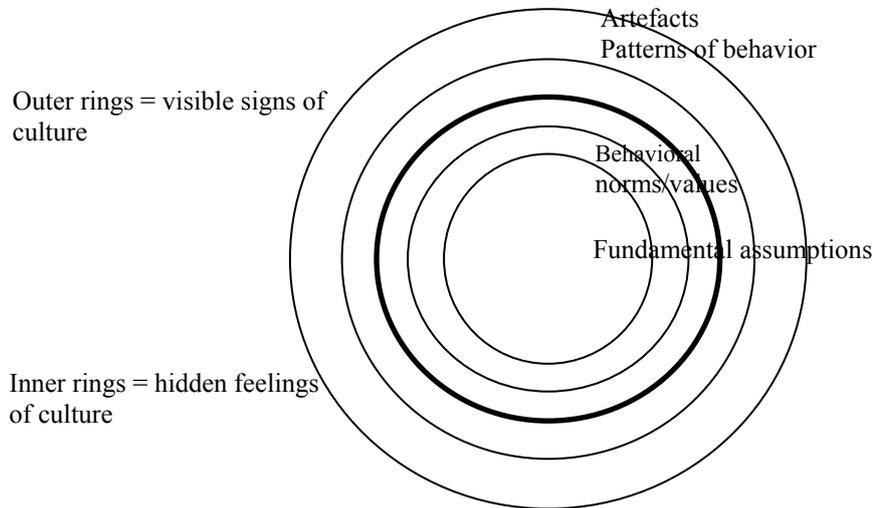
Due to its complexity, organisational culture has been extensively studied over the past few decades. The outcomes have revealed strong connection between the organisational culture and the company's performance (Peters and Waterman, 1982).

Trying to better understand and explain this relation, specialists arrived to the conclusion that no one can buy the heart of an employee but managers may have the proper organisational culture generator of motivation and commitment, and thus to be able to construct consensus among employees. No matter the type of the organisational culture, if it is in harmony with the internal and external environment, it will make employees to identify themselves with their organisation. A strong culture does not necessarily bring immense advantages as well as a weaker culture does not lead everytime to poor performance. While the first one might be inflexible when it comes about changes, binding people together to form a defensive inertial resistance, the latest one could be formed by very individualistic people less likely to form a collective resistance to change.

No matter how contradictory could sound, the most effective culture should be *stable and flexible*. Stability is about unchanged vision, mission and values, while flexibility is related to the company's structure and operations, and its ability to adapt itself both to the internal and external conditions (Khan, et al, 2010). These have been understood and learnt during time, thanks to academics and practitioners in management science who were keen on defining and measuring the organisational culture dimensions and to relate them to the effectiveness and competitiveness of the organisation. A brief analysis highlights that there are three distinct categories of interest:

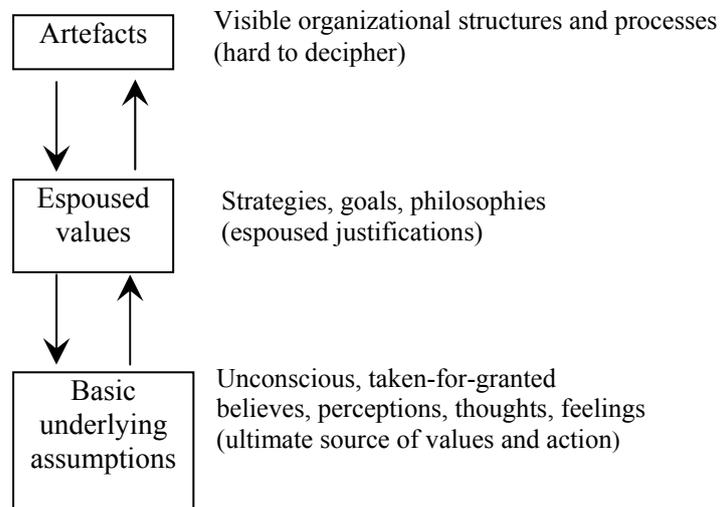
a) There are authors such as the anthropologist Edward B Taylor or the sociologist Max Weber, that focused their researches on finding the key elements composing the organisational culture. Taylor considered that the main elements are: knowledge, beliefs, art, morals, law, custom, and other capabilities and habits acquired by a human as a member of an organisation. Weber brought into attention the charismatic leadership concept, making sociologists to identify other features of organisational culture: norms, folkways, ambiguity, and apparent irrationality (Khan et al., 2010).

b) There are authors that did not limit themselves at explaining the basic elements of the culture, stepping forward to models' creation. Given the generalisation degree of these models, they can be used to analyze all kinds of organizational cultures. Among the best known models are the Rousseau's model (Figure 1), and the Schein's model (Figure 2). Rousseau's model is a multi-layered model structured as concentric rings and divided into outer rings (visible signs of culture) and inner rings (hidden feelings of culture) (O'Reilly et al., 1991). Schein (2004) introduces into his model the time dimension as follows: the first two phases of an organisation life time are thought to be *birth* and *early growth*, both of them being characterized by strong leadership and a results-oriented attitude, then the third phase, *mid-life*, that could bring the organization at an identity crisis, and finally, the *maturity* when the culture may be a constraint on innovation.



Source: (Rousseau, 1990).

Figure 1. Layers of culture

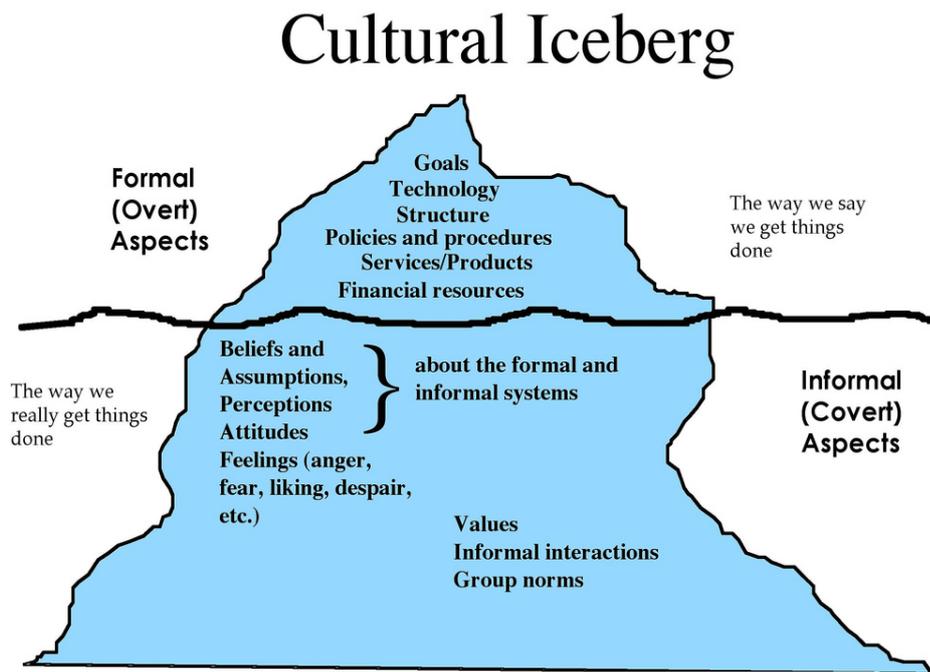


Source: (Schein, 2004).

Figure 2. Uncovering the levels of culture

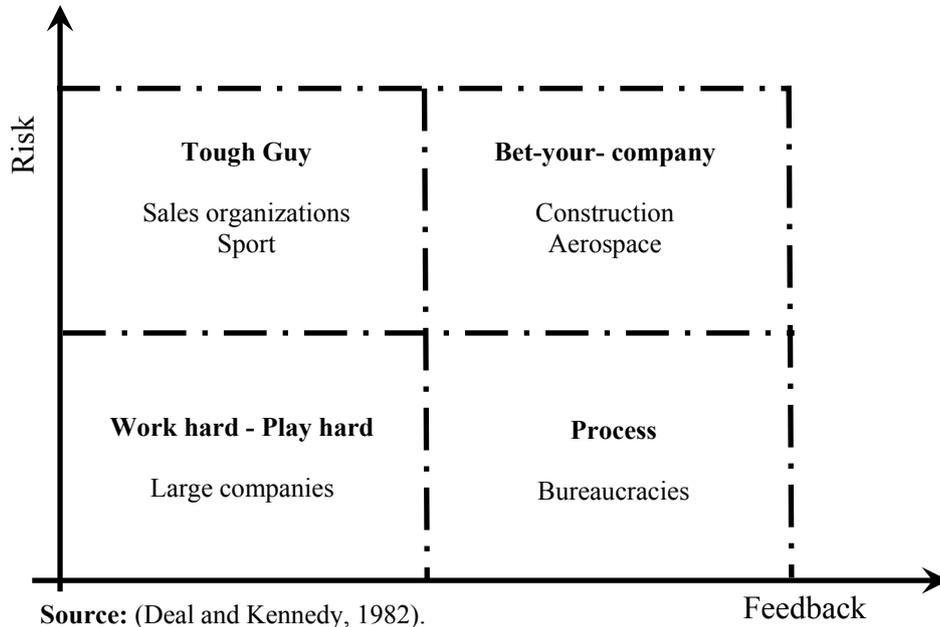
Considering that at the basis of the development of any organization lies intention, Schein questioned the importance of the *vision* of the organization's founder. This vision was meant to impose, discretely or not, the values, desires, aspirations, rules and even code of conduct of the founder onto his first employees. Also, Schein outlines the slow, but not inexistent, process of continuous transformation that this organizational culture undergoes. Thus, there are two stages: the *historical organizational culture* (initially transmitted by the founder) and the *current organizational culture* (culture developed over time on the basis of the historical one). These changes and adaptations occur whilst the organization tries to direct itself towards attaining an *ideal organizational culture* (Schein, 2004).

Another familiar model is the S.N. Herman's iceberg (1970) that makes the difference between the visible/formal aspects of an organization (systems, structures, policies, technologies) – the upper half, and the hidden/informal aspects of an organization (attitudes, beliefs, values, and perceptions) – the lower half below the water line (Figure 3).



Source: (Ieftimescu, 2007).

Figure 3. Herman's iceberg model



Source: (Deal and Kennedy, 1982).

Figure 4. Organisational culture model

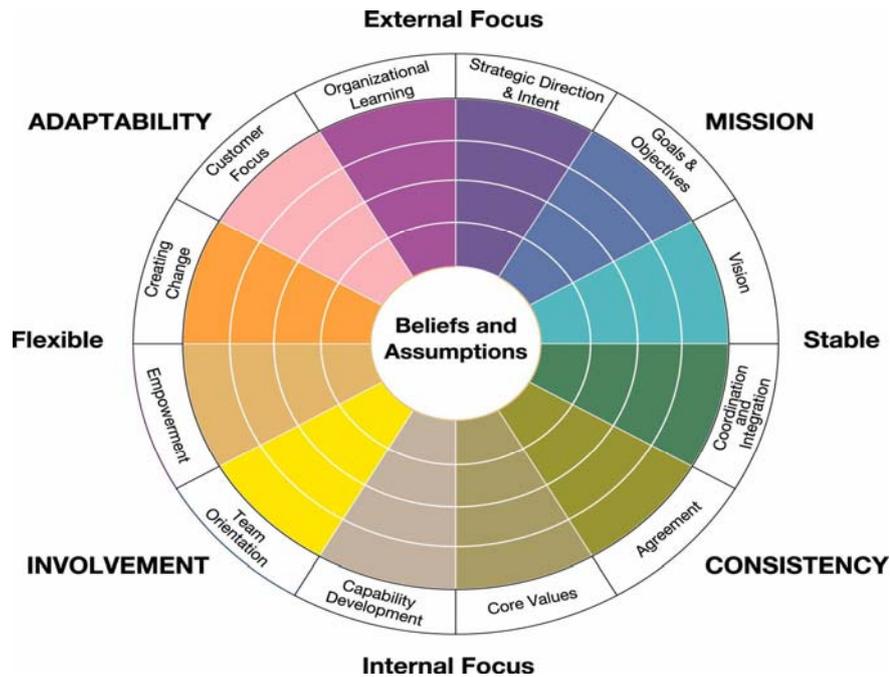
In Figure 4 is illustrated the model proposed by Deal and Kennedy (1982), based on a two dimensional perspective given by the risk accepted and the feedback received. In Table 1 there is the known typology developed by Harrison and Handy (Handy, 1999).

Table 1

Harrison and Handy's typologies of organisational culture

Structure	Handy's culture	Harrison's culture	Model
Hierarchy	Role (Apollo)	Role	
Matrix	Task (Athena)	Task	
Web	Club (Zeus)	Power	
Scatter	Existential (Dionysus)	Atomistic	

c) There are also authors developing models which intend to assess the *outcomes* of the existent organisational culture. Among them, Denison searches to determine the level of consistency versus adaptability, and top-down vision versus bottom-up involvement (Figure 5), two paradoxes that each company is constantly seeking to balance (Denison and Mishra, 1995).

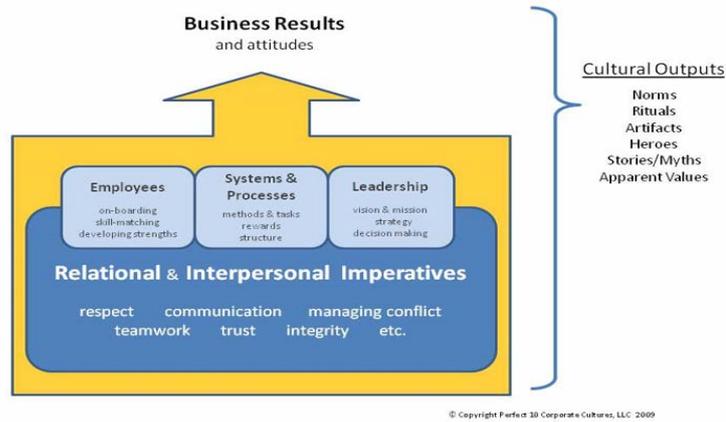


Source: (Mobley et al., 2005).

Figure 5. The Denison Organisational Culture Model - Organisational Culture Inventory

Back in 1987, starting from 12 behavioral norms grouped into 3 culture types (constructive cluster based on achievement, self-actualizing, humanistic-encouraging, affiliative, passive or defensive cluster based on approval, conventional, dependent, avoidance, and aggressive/defensive cluster based on oppositional, power, competitive, perfectionist), Robert, Cooke and Lafferty developed at Human Synergistics International another tool used for organisational consulting and change purposes – Organisational Culture Inventory (OCI), as illustrated in Figure 6 (Balthazard, Cooke and Potter, 2006).

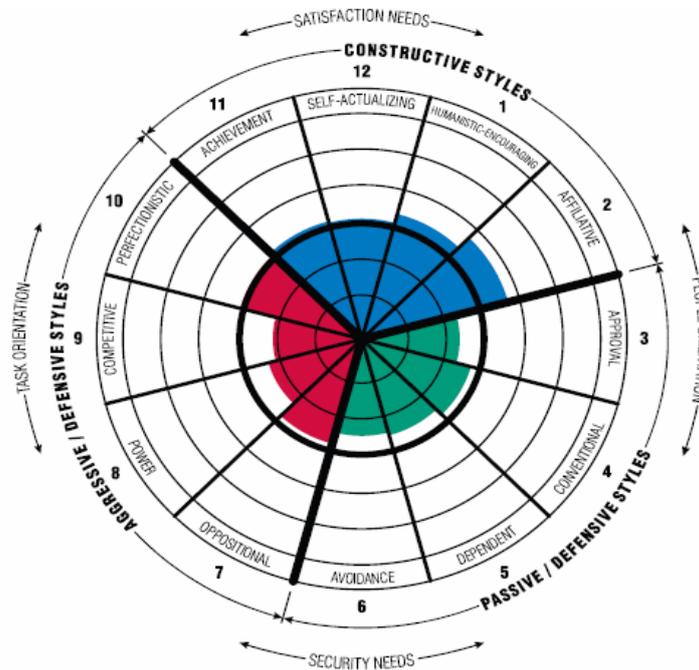
Organizational Performance & Culture Model



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Source: <http://www.perfect10cc.com/speaking-opportunities.aspx>

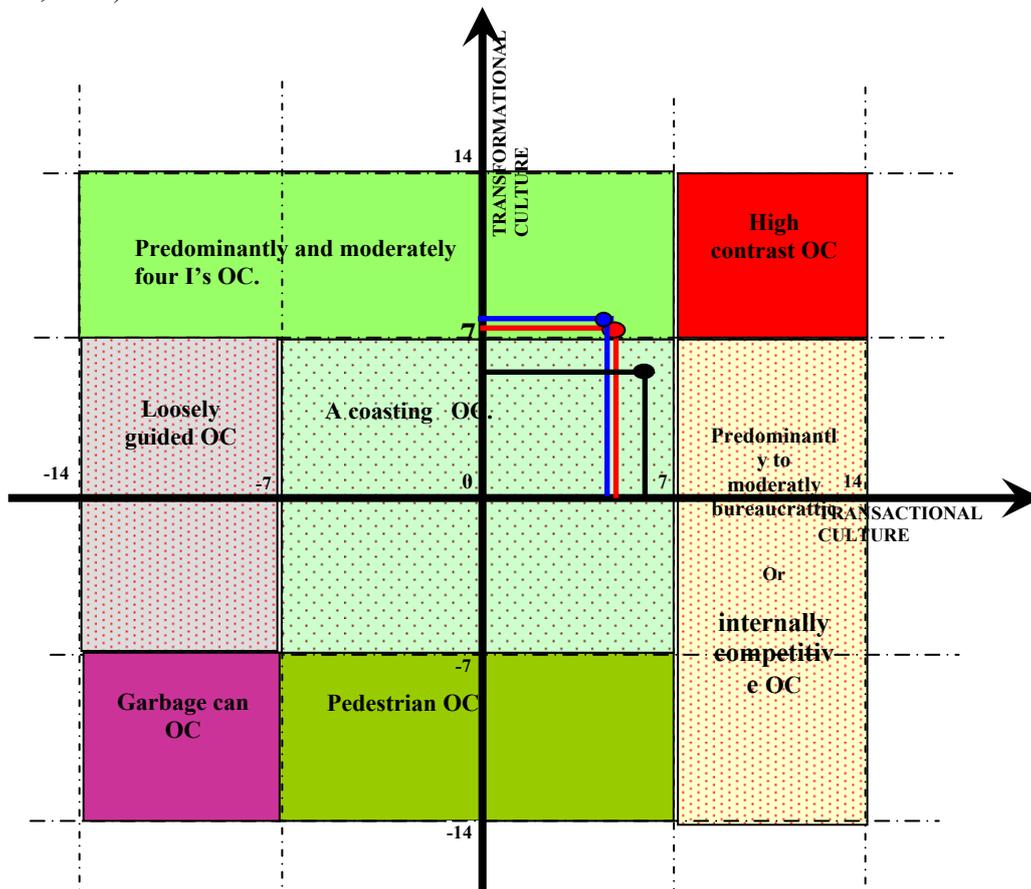
Figure 6. Perfect 10 Corporate Culture's organizational culture model



Source: <http://www.humansynergistics.com/>.

Figure 7. Cooke and Lafferty's Organisational Culture Inventory

In 1992, Bernard Bass and Bruce Avolio brought into the light a totally different organisational culture (OC) model divided into: 1) coasting OC; 2) loosely guided OC; 3) predominantly to moderately bureaucratic or internally competitive OC; 4) pedestrian OC; 5) garbage can OC; 6) high contrast OC; 7) predominantly and moderately 4 I's OC (Figure 8). They created also an instrument to work with (Organisational Description Questionnaire) in order to better understand an organisation status at a certain point in time (Bass and Avolio, 1992). In 2009, MacIntosh and Doherty stressed the importance of other 11 dimensions of an organisation: organisational presence, member success, connectedness, formalisation, creativity, sales, organisational integrity, health and fitness, service, work ethic, atmosphere. The result of their researches took the form of CIFO instrument (Culture Index for Fitness Organisations) which basically is meant to emphasize the influence of organisational culture on job satisfaction and employees' intention to leave (Khan et al., 2010).



Source: (Bass and Avolio, 1992).

Figure 8. Bass and Avolio's model of organisational culture

Year 2011 brought Cameron and Quinn's work results: Competing Values Framework Model. The focus of this model is on: a) flexibility and discretion vs stability and control, and b) internal focus and integration vs external focus and differentiation of a company. The assessing instrument developed by the two researchers is the *Organisational Culture Assessment Instrument* (Cameron and Quinn, 2011).

Schein spoke about organisational culture as a result of people's living and working together for a longer period of time. They soon start sharing the same values and opinions related to the organization that they are part of, judging in similar manner what is good and appropriate for its success. Even unconsciously, they develop some thinking and behavioural models strictly correlated with the experience that have gained up to that moment within the organization, and with the organization's strategic objectives as well.

Analyzing what it was presented above, one observation can be made: two main schools of thought detached. One takes the *phenomenological approach* and focuses on understanding the concept and *defining the meaning of culture* (its empirical research defines and measures the organisational culture in a variety of methods: culture strength, traits, congruence, types, shared values, in relation with performance of the company and commitment of the employee). The other one takes the *functionalist approach* and focuses on the *consequences of organisational culture*. It takes for granted that the leadership is its main shaper and builder; however, it differentiates between the *substantive role* (leaders contribute to the substance of an organisation's culture through their actions and behaviors), and *symbolic role* (people in organisations develop their own implicit theories on causality) of the leadership (Tsui et al., 2005), the latest one being closer to the antropological approach which sustains that leaders do not create culture, they are part of that culture. While the first sustains the dependency of the organisational culture on the leader's vision, and his ability of (re)shaping the organisational culture for fitting the market needs, the last one takes into consideration Calder's attribution theory which speaks about attributing causes to effects (Winkler, 2010), and extends it to the organisation level.

Next to the above mentioned perspectives highlighting the strong connection between leadership and the organisational culture, a third one can be noted: contingency perspective which emphasizes the importance of the circumstances, being said that leadership effects occur only under some conditions, during crises or high environmental uncertainty. Another important idea that can be emphasized is that all the previous developed models of organisational culture are presenting a *static* view. Whether if they only define the organisational culture or go further by assessing some of its dimensions, all of them come to the same point: creating an image of that organisational culture at a certain point. Seldom the visual models suggests potential evolution, even if there were few specialits literally sustaining the manifestation of the organisational culture as a process.

If taking into consideration the fact that within the theory of integrators the same organizational culture is considered both *integrator (causal element)* and *system*

to be analyzed (output of causal elements influences), one might deduct its *self-referencing* and *evolving* nature. A self-referencing system is by its nature a *complex adaptive system*. In this situation, for emphasizing the change, the control/decision structures consider not only the elements that directly and/or indirectly influence it, but also the current status of the system itself. A self-referencing system generally causes the appearance of:

a) *Positive causal loops* trying to accelerate the change and to enlarge the distance between the current and initial status of the system. This situation is called *self-generating behavior*;

b) *Negative causal loops* trying to decelerate the change by pulling back the system towards its initial status. This situation is also known as *self-limiting behavior*.

The study of self-referencing processes is even more complicated if the relations set among variables are nonlinear. That means that between causes and effects there are not any more relations of proportionality, and that the principle of superposition does not apply in building up the resulting effect (Brătianu, 2009). Thus, non-linear causal loops lead to a very complex behavior of the system. Assimilating the organizational culture to a complex adaptive system with nonlinear causal loops, it becomes clear that its evolution depends not only on its *actual status*, but also on its *previous status*. That means that the system has a *path dependent* evolution. For instance, in an organization, the nature and level of a person's instruction clearly influence the type and accuracy of his decisions, as well as his overall behavior; at their turn, all these cause the organizational culture dynamics; in the end, if the cultural landmarks suffer a process of change, all the person's abilities and knowledge will be challenged to somehow adapt themselves to the new reality, generally, by one or more methods of instruction.

By now, there are known discussions of organisational culture and change that have contrasted mechanistic management theories, stressing hierarchical command and control mechanisms, with more holistic view of the organization as a complex adaptive system, stressing decentralized flexibility and continuous learning (Zimmerman et al., 1998). These sustain the pervasive role of individuals' mental models, descriptive linguistic conventions, and belief systems as they jointly strive to develop successful and responsive business enterprises.

3. System Dynamics

Organizational culture is a nonlinear integrator (Brătianu et al., 2012) that can be best described and modeled by using system dynamics developed by Forrester (Forrester, 1999a; Forrester, 1999b). According to Forrester, "*system dynamics is a professional field that deals with the complexity of systems. System dynamics is the necessary foundation underlying effective thinking about systems. System dynamics deals with how things change through time, which covers most of what most people find important. System dynamics involves interpreting real life systems into computer*

simulation models that allow one to see how the structure and decision-making policies in a system create its behavior” (Forrester, 1999b, p. 1).

Forrester suggests that complex systems are counterintuitive, due to their complexity and nonlinearity. *“That is, they give indications that suggest corrective action which will often be ineffective or even adverse in its results. Very often one finds that the policies that have been adopted for correcting a difficulty are actually intensifying it rather than producing a solution. Choosing an ineffective or detrimental policy for coping with a complex system is not a matter of random chance. The intuitive processes will select the wrong solution much more often than not. A complex system behaves in many ways quite the opposite of the simple systems from which we have gained our experience”* (Forrester, 1999a, p. 9).

In real life, every organization behaves similar to an *adaptable complex system*, so basically it is an *open self-referencing system*. The idea was brought into the light during the Second World War, throughout some complex techniques of operational research development in USA and Great Britain. After their successful implementation during some military broad operations, they still remained known under the name of *systemic vision*.

Later on, several companies such as Bell Telephone Laboratories and RAND Corporation developed and refined these new methods contributing to the development of systems *engineering* and *systems analysis* (Optner, 1973). In the same time, while he was studying stocks' management problems within manufacturing companies, Jay Forrester, professor at Massachusetts Institute of Technology, developed an original method of modeling continuous material's stocks and flows. This method, known as *industrial dynamics*, was then enlarged to other complex problems able to be seen as stocks and flows of inter-correlated elements, becoming the well-known *systems dynamics*. The new perspective developed by Forrester has been used in the forecasting the world development with respect to the natural resources (Mesarovic and Pestel, 1975).

A *system* is defined as an aggregation of several elements interacting continuously over time and forming a coherent whole. All the interdependency relationships form *the system's structure*. The expression *dynamic* speaks about a change over time. Hence, a *dynamic system* is a system with a well-defined evolution with respect to time. Related to the organizational culture and the integrators' theory developed by Brătianu (2008; 2011), the organization's behavior is given by the dynamics of organizational culture's change while it is influenced in an obvious manner by each integrator's behavior apart, as elements of the system itself. A common feature of all the systems is the fact that *the system structure* causes in a substantial part *its own behavior*; this is one of the aspects emphasized by the *system dynamics*. The news is that the system dynamics can do even more than highlighting this strong connection: it also enables the analysis of the link set among physical structure of a physical, biological or even literal system and its behavior. For example, by simply defining the structure of an organization it is possible to pursue the analysis of the system dynamics over time, therefore to identify its probable behavior.

More than that, *system dynamics* can be also used for understanding the way that some structural changes of the system could alter its behavior as a whole. So that, by intentionally altering the normal state of the system followed by the variation of each set of conditions a time, the analyst actually tests the answer of the system.

Then, given the computer, *systems dynamics* enables the fast obtaining of a feedback, if one needs to test the assumption found at the root of a mental model. If powerful and user-friendly software is available, then all it remains is to simulate the assumption. As a result, nowadays almost anybody could explore the nature, as well as the dynamic behavior of complex systems, by only starting with a range of initial conditions and assumptions. This new human ability already has a major impact especially over the study of social systems dynamics (McGarvey and Hannon, 2004). *Computer simulation* represents broadly the imitation of a system behavior, when calculations made by the computer related to a dynamic model are used. Thus, *system dynamics model* is a representation of the system structure; once it is built and provided with all the necessary initial conditions, the computer can simulate all the variable components' behavior over time. The better imitator of the real life, the better is the model. However, the greatest advantage of the computer simulation is that, while it is impossible to scroll backward and/or fast forward for testing and retesting different premises, a computerized model enables the change of the system structure, as well as the analysis of its behavior, no matter how different the initial conditions are.

There are some empirical evidences that, if combined with some real processes study, computer simulation fosters and even accelerates the learning process. One can include here: discussions focused on some subjects, students' direct researches, laboratory experimentations, development and exploration of the model, and also computer simulation for identifying the connection among the model behavior and experimental observations. The main purpose is making people to gain the ability of critically thinking, as well as complex problems solving, which is a precious asset not only for managers and presidents of companies, but also for journalists, pilots, engineers, and so on, because modeling itself leads to a continuous improvement of the judgment and also of the decision making process. While *modeling* speaks about developing the model (and only occasionally its running), *simulation* involves an already existent model. As Ackott and Sasieni said "...models represent the reality, simulation imitates it. Simulation always implies running a model, thus a film of the reality is obtained" (Armstrong, 1993, p. 514).

Speaking about models, as in each theoretical concept case, this also counts several differentiations function of criteria found at basis. Thus, taken into consideration the *degree of coverage*, one can differentiate between *global/complete models* and *partial models (sub-models)*. Here there are two necessary remarks: on the one hand, it is difficult, if not impossible, to discuss about global social system models (this not being also the case of engineering), on the other hand, even a global model is made by partial ones. For an easier handling, it is recommended to *limit the model*. Actually, in reality, the model will limit itself as a consequence of a correct and rigorous determination of the "things" that are going to be *theorized on*. There are very

few situations that enable the social scientists to theorize on real global models. More frequently, those theories presentation includes expressions such as: *under certain conditions, within certain limits, or all the other variables being considered equal*. In this way, it is generally recognized that the theory in case is not encompassing so that there are some limits of its generalization and implementation. Even statistical analysis includes information regarding the generalization power (such as the assumption of random distribution of the residues, lack of correlation of residues, or the appropriate statement of the multiple structural equations models). All of these are no more than other ways of claiming that the explicit data of the model include all the relevant variables, or that the elements left apart do not affect the understanding of the relations among the component variables. Thereby, limits definition is proved to be more a pragmatic and paradigmatic issue, and less a technical one. Its overcoming is quite a difficult task and it is in a direct relation with the analyst's *creativity, mastery, intuition and perspicacity* (Hanneman, 1988).

On the other hand, if related to the *individual cognitive system*, one can speak about *implicit models (mental models)*, defined by Brătianu as cognitive approximations of the infinite and complex reality which we leave in (Brătianu, 2007), and said by Hanneman as being the major aim of all the theories (the achievement of a better understanding and/or explanation of phenomena is intended), and *explicit models*. The latter can be classified into *verbal and figurative models*.

Taking into consideration that the verbal models include all of an entity's representations made with the aid of words (written and/or said), it can be deduced that they are at the basis of any organizational culture (communicational elements, folklore, etc). Figurative models can be also classified into *iconic models, analogical models and symbolic models* (these are *mathematical models, graphical models and computerized ones*). Any *symbolic decisional model* uses a specific terminology that always includes three basic concepts: variables (exogenous, endogenous and intermediary), parameters, and operators (the symbol of the operation, being it a mathematical, logical or of another type, made on the variables and/or parameters within the model).

Combined, variables, parameters and operators make *expressions* revealing the relations existent between them; in the end, a symbolic model is an assembly of this kind of expressions which are sequentially placed and run (Ieftimescu, 2007). If the all the used variables and parameters are qualitative, than the model itself is a *qualitative one*; on the contrary, if they are quantitative, the model will be a *quantitative (numerical) model*. Going forward and taking into consideration the uncontrollable variables' typology, models can also be *deterministic or probabilistic models*. Moreover, if the *time* as central variable is included also into the model, than one can speak about *dynamic or static models* (Brătianu, 2007; Ieftimescu, 2007; Senge, 1990). Social dynamics is focus more on *change process* (as phenomenon that has to be explained) than on the *structure itself* (made by mathematical description of the connections among them), that means that dynamic models are much more

important than the static ones. However, both dimensions (i.e. static and dynamic, structure and process) are interconnected (Hanneman, 1988). Explicit decisional models can be grouped into three classes: descriptive, predictive and prescriptive (normative), which are quite difficult to be clear distinguished mainly because some includes the others.

1) *Descriptive models* – highlight the most significant features of the decisional situation and of the relations set among its elements (cause-effect diagram, regression and correlation analysis, dispersion analysis, etc).

2) *Predictive models* – allow the prediction of some significant elements composing the studied decisional situation. These elements could be uncontrollable factors (for which some forecasts can be developed based on their evolution history and other synthesized information), or some possible solutions of the decisional problem (based on the controllable factors that offer the possibility of evaluating their possible consequences).

3) *Prescriptive (normative) models* – aims to recommend a certain type of action (meaning a certain combination of controllable factors), in order to solve the decisional problem by taking in consideration all the decision criteria and the other significant elements from within the model (prescriptive mathematical models are actually optimization models).

Simulation, as running an existent model, could be made based on *iconic models* (study of the plane replicate in the aerodynamic tunnel), *based on analogical models* (representing and studying a phenomenon by another which is more understandable or analyzable), and also based on *symbolic models* (mathematical, graphical or computerized representations). Pretty obvious, it is more than difficult to strictly differentiate between them. When it comes about computer simulation, it is practically impossible to do it because it successfully combines analogical models, mathematical and nevertheless graphical ones. Function of the highlighted attributes and the used models, classification of possible simulation processes can continue by making distinction among *discreet and continuous simulations, deterministic and probabilistic simulations, static and dynamic ones, etc.*

System dynamics is a form of continuous simulation. The modeled system is viewed as an assembly of not-interrupted flows of homogeneous substances out of which no separate items can be taken off. As an example, one can think at the water flow through a pipeline. Given this situation, status variables are changing themselves along with the time, the latest one being constantly changed by only one increment. Simulation is important in the managerial decision making due to its capacity of enabling the manager or the analyst to run some experiments based on the system in order to better understand its behavior and take more appropriate decisions. Therefore, simulation is a imitation of the way that a real process or system works over time; the main reasons for using it generally are: a) the necessity of keep asking the system; b) the necessity of expanding and/or compressing time during the analysis; c) cutting costs.

The most popular continuous simulation languages are *Dynamo*, elaborated in its first version by Jay Forrester and his team at MIT, and *STELLA* (*System Thinking Experiential Learning Laboratory with Animation*). As softwares, the most used are *PowerSim* and *ithink* (distributed by PowerSim Software and Isee Systems) (Ieftimescu, 2007). Next to these, there are some other softwares able to perform similar things. What differentiates them, from the users point of view, is the graphical interface, and the needed programming knowledge.

To conclude, future behavior of a dynamic social system (any organization is in fact a dynamic social system), is if not impossible, at least quite difficult to be anticipated. The decision maker has at his hand a variety of possible research methods. Still, all of them need some simplifying hypothesis so that it is recommended to take into consideration all the possible distortions of the reality, as well as each method restrictions.

4. Conclusions

Organizational culture is a complex nonlinear integrator of any organization intellectual capital. Organizational culture reflects the sharing values, beliefs, symbols, ceremonials and traditions in a company. Although it is an intangible asset strongly related to the spiritual capital, which means that it can be seen or touched, organizational culture plays an important role in the company performance and its efforts to excellence.

Organizational culture is not a static entity since it changes in time. However, due to its spiritual nature organizational culture manifests a large inertial force to any changes within the organization and especially to its own change. In order to understand it and its influence upon the organizational behavior many researchers developed models able to reflect the main structural and functional aspects of organizational culture.

The purpose of this paper is to present a conceptual analysis of the most important models from the literature and to suggest a new perspective in organizational culture modeling. This new perspective is given by system dynamics, a research field developed mainly by Jay Forrester from MIT. The paper presents also some considerations about the usefulness of developing computer models able to perform simulations. By these simulations managers can get a better understanding of the organizational culture phenomena from their companies, and as a consequence they can make better decisions.

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