Preface

THREE CHALLENGES

There are three challenges for this book: 1) to go beyond the iceberg metaphor and to explore the nature of knowledge; 2) to go beyond the static image of the organizational knowledge and to explore its dynamics; and 3) to integrate organizational knowledge into the strategic vision of the companies.

Challenge #1: Going beyond the Iceberg Metaphor

The first challenge is not so easy due to the general consensus on the iceberg metaphor of knowledge, based on the inspirational ideas of Gilbert Ryle (1949) who split knowledge into know-that knowledge and know-how knowledge, and of Michael Polanyi (1966) who discovered the wonderland of tacit knowledge, and on the prolific work of Ikujiro Nonaka and his colleagues (Nonaka, 1991, 1994; Nonaka & Takeuchi, 1995; Nonaka, Toyama, & Hirata, 2008). According to the iceberg metaphor, knowledge can be conceived as an entity composed of two parts (Nonaka & Takeuchi, 1995, p. viii):

One is explicit knowledge, which can be articulated in formal language including grammatical statements, mathematical expressions, specifications, manuals and so forth. This kind of knowledge thus can be transmitted across individuals formally and easily. This has been the dominant mode of knowledge in the Western philosophical tradition. However, we shall argue, a more important kind of knowledge is tacit knowledge, which is hard to articulate with formal language. It is personal knowledge embedded in individual experience and involves intangible factors such as personal belief, perspective, and the value system.

The book goes beyond this image of knowledge suggesting the energy metaphor (Bratianu, 2011; Bratianu & Andriessen, 2008). According to this metaphor, knowledge is conceived as a field, which means that it is liberated from the tangible support of different objects. Instead of the dyad formed of explicit and tacit knowledge, the new metaphor considers a triad composed of cognitive knowledge, emotional knowledge and spiritual knowledge. The new triad has the dynamic structure of a triple helix (Bratianu, 2013a). Cognitive knowledge represents the rational result of our reasoning, reflecting the Cartesian view synthesized in the famous dictum Cogito, ergo sum! Emotional knowledge represents the content of our emotions and feelings. Spiritual knowledge reflects our values and deep knowledge about our existence. The new metaphorical approach enlarges our understanding of knowledge and opens new directions for interdisciplinary research.
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Emotional knowledge created by emotions and feelings plays an important role in making decisions, and in business behavior. As Hill (2008, p. 2) emphasizes, “Breakthrough in brain science have revealed that people are primarily emotional decision makers.” Moreover, emotional knowledge is central, not peripheral, in determining the marketplace and workplace behavior. Emotions have two basic biological functions (Damasio, 2003, 2012). The first function is to create a specific reaction to the new stimulus or contextual situation in which the organism might be at a certain moment. The second function is to prepare biologically the organism to execute the first function. For instance, if the new context means an unexpected danger, the first function is to generate a fast body reaction of running away, and the second function is to assist biologically the body with the necessary oxygen and blood stream to move fast out of the danger. Thus, we may conclude that emotions contribute directly to the generation of the survival-oriented attitude of any individual.

Spiritual knowledge constitutes the third component of the triple helix of knowledge (Bratianu, 2013a). If rational knowledge reflects our understanding about the physical world we are living in, and emotional knowledge reflects our understanding about our bodily emotions and feelings, spiritual knowledge reflects our understanding about the meaning of our existence. It goes beyond the tangibility of our body and of external environment. Integrating the rational knowledge, emotional knowledge and spiritual knowledge into triple helix of knowledge it will help us to discover the richness and significance of what is of value in this life: “We have to learn to see aspects of the world around us: stones, people, trees, sky. Equally, we have to learn to see meaning and value in the world around us, in our environment, in events, in human actions and lives” (Maxwell, 2007, p. 274).

Challenge #2: Going beyond the Static Image of Organizational Knowledge

Organizational knowledge is a conceptual construct that reflects the integration of the individuals’ knowledge fields of explicit and tacit knowledge, or in concordance with the triple helix metaphor the cognitive, emotional, and spiritual knowledge. Organizational knowledge is a one of the emergent characteristics of the knowledge intensive organizations, and it became in the last decades a strategic resource. The static image of the organizational knowledge based on codification of explicit knowledge and supported by the information systems is not anymore enough in managing the organizational entropy and in transforming knowledge into a strategic resource.

One of the most elaborated models to describe the dynamics of organizational knowledge has been developed by Ikujiro Nonaka (1994), and refined together with his colleagues, most notably with Hirohata Takeuchi (Nonaka & Takeuchi, 1995). This model contains three main components: the SECI knowledge cycle, the dynamic context Ba, and the knowledge vision. The SECI knowledge cycle is composed of four fundamental processes of knowledge conversions: socialization, externalization, combination, and internalization. Socialization is considered the initial process of knowledge dynamics since it is fundamental for people interaction, and people interaction is essential for sharing their tacit knowledge. Knowledge sharing needs a supporting organizational culture based on trust and common values. Japanese companies promote that kind of culture and stimulate knowledge sharing for enhancing innovation. Externalization is the process of conversion of tacit knowledge into explicit knowledge. This is process that happens in the mind of individuals. Tacit knowledge becomes explicit taken the shapes of metaphors, analogies, concepts or models. Externalization is a rather difficult process since individuals must frame and express their formless and wordless tacit knowledge into a formal language. Combination is the process of knowledge exchange between people in a social context by using language. If externalization
is an individual process, combination is a social process. Combination can be enhanced by creative use of advanced information and communication technologies and large-scale databases. *Internalization* is the conversion of explicit knowledge into tacit knowledge, at the individual level. It is the reverse of the externalization process. The new tacit knowledge obtained as a result of internalization is available for starting a new cycle of the SECI spiral through sharing it with other team members.

In a space defined by the *epistemology* and *ontology* dimensions the SECI cycle generates a *knowledge spiral*. On the epistemology dimension we have the conversion processes between tacit knowledge and explicit knowledge at the individual level. On the ontological dimension we have the knowledge conversion processes in a social context, from individuals to groups, and from groups to the whole organization. In this way, the knowledge creation process is amplified and transformed into organizational knowledge. Knowledge creation is a context dependent process, in terms of space, time, configuration and social constituents. Knowledge creation needs a certain physical, environmental, social and cultural context in which human interaction to take place. Nonaka answered to this need by introducing the concept of *Ba*:

*We define Ba as a shared context in motion, in which knowledge is shared, created, and utilized. Ba is the foundation for knowledge-creating activity. It is the place where one engages in dialectical dialogue and practice to implement the vision and driving objectives of the firm. (Nonaka, Toyama & Hirata, 2008, p.34)*

The third component of the Nonakian model is knowledge vision. I will address this issue in the next challenge. One of the major limitations of the SECI model is that it is based on the iceberg metaphor, which means to count only the tacit and explicit knowledge. We can enlarge the organizational knowledge dynamics by changing the iceberg metaphor with the energy metaphor (Bratianu, 2011; Bratianu & Andriessen, 2008). Thus, all individual cognitive, emotional and spiritual knowledge fields will be integrated into cognitive, emotional, and spiritual organizational fields. The integration energy comes from the organizational integrators.

An *integrator is a powerful field 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 posses the capacity of interacting in a controlled way. (Bratianu, 2008, p. 237)*.

The synergy property makes it possible to generate an extra energy or power from the working system. That makes the difference between a linear and a nonlinear integrator. However, the synergy effect is not a certainty. It depends on the power and effectiveness of the nonlinear integrator (Bratianu, 2013b). The most important nonlinear integrators are: management, leadership, and organizational culture. While management acts mostly on the cognitive knowledge, leadership and organizational culture act predominantly on emotional and spiritual knowledge. The role of these integrators is not only to integrate individual knowledge fields into the organizational one, but also to generate the transformation of one form of knowledge into another one, as mechanical energy is transformed into thermal energy or electrical energy in different energy systems. The energy metaphor can help us understand all of these transformations by using the thermodynamics laws instead of the Newtonian ones.

Organizational knowledge dynamics can be seen from another perspective, given metaphorically by the conservation laws of energy systems. Unlike energy, knowledge can be created and destroyed. Thus, at the organizational level we may consider a knowledge balance: For keeping organizational knowledge
at about the same level it is necessary that knowledge creation and knowledge acquisition from the external environment to be equally to the knowledge lost through forgetting and leaving people. From this perspective, the fundamental processes for knowledge management are the following: knowledge creation, knowledge acquisition, knowledge sharing, knowledge retention, and knowledge loss.

**Challenge #3: Integrating Organizational Knowledge into the Strategic Vision of the Company**

In the last decades, knowledge became for many knowledge intensive organizations a strategic resource (Davenport & Prusak, 2000; Jashapara, 2011; Nonaka & Takeuchi, 1995; O’Dell & Hubert, 2011; Spender, 2014). However, knowledge is not by definition a strategic resource leading to a competitive advantage. To become a strategic resource knowledge must fulfill the following criteria: 1) to be unique or rare; 2) to be valuable; 3) to be difficult for those who want to imitate it; 4) there should be no substitution of knowledge. Thus, knowledge creation should have outcomes that satisfy these requirements. The first requirement guides top management in finding a solution to the innovator’s dilemma (Christensen, 2003), which means to choose between an incremental innovation strategy and a disruptive innovation strategy that fits best with the vision of the company. The second criterion reflects the potential of the new knowledge to satisfy the needs of the customers. The third criterion has a practical value. Competitors always try to imitate the best products on the market. From this perspective, patents are necessary for establishing intellectual property rights, but they are based on explicit knowledge that can be imitated rather easily. Tacit knowledge is much more difficult to be imitated, as the experience of the Japanese companies proved it. The forth criterion is about substitutes, those products that can satisfy similar needs. Companies can satisfy this criterion if they create knowledge that cannot be replaced by other knowledge.

It is important for any company to have a well-defined vision in which to integrate all their strategies for knowledge creation, acquisition, retention, and sharing. That means to elaborate a knowledge vision able to become a driving force for the knowledge management, and a powerful integrator for the organizational knowledge. This challenge should be able to overcome the limitation of the iceberg metaphor that is at the center the Nonakian philosophy, by developing a new organizational knowledge dynamics based on the energy metaphor and the triple helix of knowledge. Organizational knowledge can be a sustainable competitive advantage if the knowledge management will operate with the new model of the cognitive, emotional, and spiritual field dynamics. Cognitive knowledge will be used in economical analyses and strategies based on the Porterian paradigm of competitive advantage. Emotional knowledge will be used in creating new systems for employee motivation in developing knowledge sharing and knowledge creation behavior. Spiritual knowledge will be used in developing consistent and coherent systems of values able to become the new driving forces of the companies, instead of those based on profit maximization theories. That means to develop a new working spirituality oriented toward people and not to some pure economical goals.

**THE STRUCTURE OF THE BOOK**

The structure of the book reflects the logic I have on the organizational knowledge dynamics. In the first section of the book, I introduce the metaphorical thinking as a conceptual framework of our understanding of the knowledge and knowledge dynamics. Then there are three chapters that present the fundamental
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fields of knowledge: cognitive knowledge field, emotional knowledge field, and spiritual knowledge field. These fields are in a continuous interaction and transformation. To capture the essence of these phenomena I present in the next three chapters the most significant ideas and models for organizational knowledge dynamics and organizational memory. The next four chapters present the main processes involved in the dynamic equilibrium of organizational knowledge: knowledge creation, knowledge acquisition, knowledge loss, and knowledge sharing. The final chapter describes the overarching process or organizational learning, and the requirements for a company to become a learning organization.

Chapter 1 introduces the basic ideas of metaphorical thinking and its impact on understanding knowledge and knowledge dynamics. The chapter presents the main metaphors used for knowledge: knowledge as an object, knowledge as a flow, knowledge as an iceberg, and knowledge as a spectrum. The dominant metaphor is knowledge as an iceberg since it explains very well the dyad composed of tacit knowledge and explicit knowledge used frequently by Nonaka and his colleagues. Knowledge as energy comes immediately as an advanced metaphor based on thermodynamics. The metaphor allows us to postulate three fields of knowledge (i.e. cognitive, emotional, and spiritual) which are in a continuous interaction and transformation.

Chapter 2 is dedicated to cognitive knowledge, and to the known-unknown paradox that characterizes our quest for knowing and knowledge. Cognitive knowledge has been identified with rational knowledge since Plato and it became the kernel of the Cartesian philosophy. The second part of this chapter is focusing on the Nonakian dyad composed of tacit and explicit knowledge. This dyad is based on the Polanyi axiom of tacit knowing and on the Ryle distinction between know-that and know-how knowledge. Explicit knowledge is the rational knowledge that can be expressed using any symbolic system or language, and communicated to other people. Tacit knowledge reflects experience, emotions, intuitions, hunches, and values which cannot be expressed in their latent form.

Chapter 3 is focused on emotional knowledge. Although in the literature many authors discuss about emotional intelligence, very few see emotional knowledge as a fundamental concept of the knowledge spectrum. Emotional knowledge appears as a new concept representing the content of emotions and feelings, and it is supported by the recent research in cognitive sciences. The chapter presents also the concept of emotional thought that reflects the dynamics between emotion and cognition. Emotional knowledge is related in the final part of the chapter to emotional intelligence, a powerful concept in management and leadership.

Chapter 4 presents the field of spiritual knowledge as the third fundamental component of the triple helix of knowledge. It is an emergent field of research, especially as an integral part of our spiritual intelligence and spiritual capital. Spiritual knowledge is about the deep human concern of our existence, and of our connection with the whole universe. From a more practical perspective, spiritual knowledge is about our values in society and organizations, and how these values influence the managerial decision making. Understanding spiritual knowledge becomes a key success factor in understanding the essence of the new business in creating value for society and not being trapped in profit maximization.

Chapter 5 presents the conceptual framework of the dynamic theory of organizational knowledge creation developed progressively by Ikujiro Nonaka and his colleagues. The breakthrough of this theory is the SECI model, which consists of four knowledge conversion processes: socialization, externalization, combination, and internalization. All of these knowledge conversion processes happen in Ba, a dynamic context where interactions between people take place. The whole dynamic model of knowledge creation is based on the experience of the Japanese companies which creates cultural bounds in its application in other countries.
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Chapter 6 introduces the concept of organizational knowledge, which is a construct that reflects the convergence of all individual knowledge fields in organizations. That means all explicit and tacit knowledge field, or changing the paradigm all cognitive, emotional, and spiritual individual fields of knowledge. The result of this integration process is performed in interactive and iterative modes by organizational integrators. Although there are many debates concerning the building up of organizational knowledge from the individual fields, the practice demonstrates that such a dynamic does exist and it encompass knowledge transfer processes from individuals to groups, and from groups to the whole organization. The chapter presents also the issues related to knowledge codification, and to the balance between knowledge exploitation and exploration.

Chapter 7 is dedicated to organizational memory that represents the organizational capacity for encoding, storing, retrieval and decoding the organizational knowledge. It is an intangible asset of any organization that comprises cognitive, emotional, and spiritual knowledge in their multiple forms. Although many researchers conceived and described organizational memory using as a metaphor the individual memory, organizational memory integrates a significant social contribution. Organizational culture contributes directly with the emotional and spiritual knowledge to the content of organizational memory. Beliefs, value, stories, myths and traditions encode fundamental emotional and spiritual knowledge from the organizational history. Organizational memory can be enhanced by technology, especially by information systems. An interesting situation is when a large corporation is changing its strategic direction and a new corporate memory is forming. I present the case of reinventing the IBM under the leadership of Louis V. Gerstner, Jr., and the creation of a new corporate memory.

Chapter 8 is dedicated to knowledge creation that constitutes the most important process in the knowledge-intensive companies in achieving a competitive advantage. However, knowledge creation is directly related to information, and thus the chapter focuses on the interaction between information and knowledge. The Gordian knot of knowledge creation is the dynamics between information and knowledge, more precisely how can information be transformed into knowledge. The difficulty comes from the fact that information defined in the realm of information science is not the same with information defined in knowledge management. In the realm of information science information is a pure mathematical construct without any meaning. It can be upgraded to semantic information, but it keeps its probabilistic nature. In the realm of knowledge management information means data immersed in a semantic field. The chapter presents the DIKW hierarchy and the most important processes and models for knowledge creation.

Chapter 9 describes the processes of knowledge acquisition, knowledge loss, and knowledge retention. Knowledge acquisition means to bring in organization fluxes of knowledge from the external environment, while knowledge loss means to have fluxes of knowledge crossing the interface toward the external environment. Knowledge loss became a hot issue in the last decade when the wave of baby boomers reached the retirement age. A strategy of reducing knowledge loss is to find practical ways of increasing the knowledge retention in the company. This chapter presents some of the most used methods for knowledge retention and intergenerational learning.

Chapter 10 presents a series of factors that affect knowledge acquisition. Although there is a growing literature on knowledge management limited attention has been paid to the factors that influence the process of knowledge acquisition. Therefore, the purpose of this chapter is to bring forward the main elements that may stimulate or inhibit knowledge acquisition at both individual and organizational level. Knowledge acquisition is mainly affected by company’s absorptive capacity, organizational context and
structure and inter-firm alliances. These may increase firm’s awareness to the external challenges and stimulate inter-organizational interactions. The impact of each of these factors is highly visible in the context of international joint ventures. Still, in this case, another factor interferes, namely cultural specificity.

Chapter 11 presents interesting issues related to knowledge sharing and communities of practice. Knowledge sharing is the most important mode of knowledge transfer in social contexts since it is based on the willingness of individuals to impart their experience with other people and not on the managerial authority. Knowledge sharing depends on supporting organizational culture and especially on organizational trust. Since the essential factor in developing a culture of knowledge sharing is trust, the chapter presents some of the most significant conceptual models of the organizational trust. The second part of this chapter is dedicated to communities of practice and their role in enhancing knowledge sharing. Although communities of practice have a rather fuzzy and fluid structure, coming in conflict with the ordered and hierarchical structure of organizations, they become of interest for managers due to their enhanced capacity of knowledge sharing and knowledge creation.

Chapter 12 presents the main issues related to organizational learning and learning organization. Organizational learning is a process that occurs across individual, group, and organizational levels through intuiting, interpreting, integrating, and institutionalizing. It is a purposeful process designed and sustained by inspired leadership. It may be an adaptive process based on the single-loop learning, or a generative process based on the double-loop learning. The organization that is capable of transforming organizational learning into the engine of knowledge creation aiming at building up a competitive advantage may become a learning organization. In the last part of this chapter, there is an interesting analysis of NASA as a learning and unlearning organization.

**FINAL REMARKS**

Organizational knowledge dynamics is a complex and an interdisciplinary field of research that needs new fresh perspectives and inputs from many disciplines. The present book tries to answer to some of these requirements by making a balance between exploitation of the known ideas and models, and exploration of some new directions. The main idea of this approach is based on a new metaphor used in understanding knowledge. That is the energy metaphor. The new metaphor departs from the Newtonian logic based on tangibility and linearity, approaching the thermodynamics logic based on energy and nonlinearity.

The iceberg metaphor developed so well by Nonaka and his colleagues became so popular due to its intuitive structure and simplicity. Human mind has been always in search for simple ways of solving our everyday problems. However, packing all non-explicit knowledge together under the same label of tacit knowledge cannot help managers of transforming knowledge into a real strategic resource. Changing the dyad composed of tacit and explicit knowledge with the triad composed of cognitive, emotional, and spiritual knowledge will unpack the tacit knowledge and will open new directions for research in organizational knowledge dynamics.

Finally, I shall agree with Richard Branson (2011, p. 35) that “Capitalism 24902 is all about people, finding the right entrepreneurs to shift to a new way of doing business and getting every single person in the company excited about playing their part in making a difference.” That means also a shift in understanding knowledge beyond the tacit and explicit dyadic structure. The oneness perspective of human being leads us in considering cognitive knowledge, emotional knowledge, and spiritual knowledge as being all fundamental components of the integral knowledge we have at the individual and organizational levels.
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This book is intended for graduate students, researchers and practitioners in knowledge management, intellectual capital, human resources management, change management, and strategic management. Also, it is a useful book for those who are working in psychology and sociology and are interested in understanding knowledge dynamics issues and the way they influence organizational management and leadership today. In a knowledge economy, knowledge and knowledge dynamics are topics of interest for many people who would like to understand the nature of knowledge and the fundamental forms of its manifestation as cognitive, emotional, and spiritual knowledge. This is a book about the soft part of organizational knowledge, and not about the hard part represented by information systems. The book is focused on individual and organizational knowledge processes and not on data and information processing by computers, which constitute the focus of the information management systems. Managing knowledge dynamics means to understand and manage knowledge creation, knowledge acquisition, knowledge storage, knowledge transformation, and knowledge loss within an organizational context. Knowledge management becomes an intrinsic part of the organizational management and leadership.

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