

Abstract. *The purpose of this paper is to present a critical evaluation of the implementation and development of innovation and knowledge management in the Romanian emergent economy. As a former socialist country, Romania faced some specific difficulties in its transition from centrally controlled economy toward the free market economy, and from state ownership toward private ownership. A centrally controlled economy is very rigid, and it is based on inertial and linear thinking patterns. Switching toward a free market economy means also switching toward a dynamic and nonlinear thinking patterns, a more adequate perspective for the complex and turbulent changing business environment. Our research identified and evaluated the main barriers in implementing innovation and knowledge management in the Romanian economy, and based on these findings we developed a series of possible solutions.*

Keywords: barriers, centrally controlled economy, cognitive approximation, innovation management, knowledge management, linear thinking, nonlinear thinking.

BARRIERS IN INNOVATION AND KNOWLEDGE MANAGEMENT IN THE ROMANIAN EMERGENT ECONOMY

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1. Introduction

Innovation is a very powerful concept with a large spectrum of meanings and fields of applications. However, its Latin root *nova* is very clear, designating something *new*, and *innovare* means *to make something new* (Tidd, Bessant & Pavitt, 2001). Thus, *innovation* means to create a new entity and to bring it in its final market form. “*Innovation is a product or service with a bundle of features that is – as a whole – new in the market, or that is commercialized in some new way that opens up new uses and consumer groups for it*” (Westland, 2008, p.6). Innovation is not a new phenomenon in our economy, it is just not optional anymore. As Porter (1990) underlined, companies can achieve competitive advantage on a given market through acts of innovation. These companies approach innovation by realizing new products, new services, new technologies, new processes or just new ways of doing something. Innovation has become a kind of new industrial religion of the 3rd millennium (Westland, 2008).

Managing innovation means to create all necessary conditions within an organization to stimulate generating new knowledge, and to transform this knowledge into tangible new processes, technologies, and products. As showed by Uden and Naaranoja (2008) “*The main difference about innovation in services as opposed to products is the intangible nature of the services activity. Both agricultural and manufacturing economies produce tangible goods that are primary focus of exchange in the economy. On the contrary, services exchange involves a negotiated exchange between a provider and an adopter (supplier and customer) for the provision of (predominately) intangible assets*” (p. 177).

Managing innovation means also identification and evaluation of the possible risks involved in financing new products and services, knowing from statistics that the rate of success is rather small. However, risk taking is encouraged by the fact that innovations yield far better returns than many traditional businesses. “*Rates of return on successful innovations average over 50%, compared with an average for traditional businesses in the range of 15%. Improved profits come with elevated risk – business and technological – which confronts investors and managers with new challenges*” (Westland, 2008, p. 3).

Knowledge is also a very powerful concept, used in almost any science to designate cognitive entities or structures people create in order to represent the natural and social worlds we live in. Knowledge is a fuzzy concept and there are many debates concerning its definition and core meanings (Allee, 1997; Davenport and Prusak, 2000; Polanyi, 1983; Skyrme, 2001; Sveiby, 1997). A new approach initiated by Andriessen to describe the functional characteristics of knowledge, and intellectual capital is metaphorical analysis (Andriessen, 2004, 2006, 2008; Brătianu, 2007, 2008; Brătianu and Andriessen, 2008). According to Nonaka and Takeuchi (1995), knowledge is conceived in the Western philosophy as a result of the cognitive activity,

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while in the Eastern philosophy knowledge integrates both cognitive and emotional activities. This oneness perspective developed especially by the Japanese researchers is being accepted by more and more researchers throughout the world.

Knowledge management is also a debatable concept, since management has been created and developed for a tangible world, while knowledge is intangible. In the same time, many authors believe that knowledge is created only in our heads and thus there is no organizational knowledge to be managed. Beyond these debates, we believe that knowledge should be considered as *a field* at the organizational level (Brătianu and Andriessen, 2008) where both individual knowledge and organizational knowledge integrate into a single field. Managing knowledge means to create an environment within an organization that facilitates the creation, transfer and sharing of knowledge. Thus, the focus should be on creating an appropriate organizational culture and providing effective leadership for generating, sharing, transforming, processing and embedding knowledge (Kermally, 2002; Debowski, 2006; Davenport, 2005).

Although these above concepts are fuzzy, we used them in our research in order to identify their penetration in the organizational cultures of the Romanian companies and in the decision making processes. For the purpose of this paper we shall present in the following the main issues faced by the former socialist countries in their transitions toward the free market economy, and the main barriers existing in the Romanian economy for a successful implementation of innovation and knowledge management. Our results can also be used to explain many difficulties existing in other countries with emergent economies.

2. A chaotic historical transition

It is axiomatic that changing the political regime in all former socialist countries opened a new historical period for them. Unfortunately, these countries were not prepared to switch from socialism to capitalism, and there were no previous examples in the world to be followed. Each new Government in each of these countries took political and economical decisions according to their historical and cultural traditions, and to the strengths of their economy. However, most of these decisions have been chaotic and done without any solid social, economical, technological and scientific analyses. Also, the inertial forces have been very powerful, by comparison with the new forces promoting the free market economy.

The most powerful inertial forces were the social institutions and the cultural values of people. In a broad view, "*Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange, whether political, social, or economic*" (North, 2007, p. 3). When there is a discontinuous change in society, the formal rules change, but the informal constraints do not. They go on for

some time due to their inertia. The same situation is with cultural values which are deeply beliefs of people about life and society, and they cannot be changed overnight. This situation becomes even worse when the thinking pattern of people have been predominantly inertial (Brătianu, 2007). Due to these strong inertial forces, the transition process has been very slowly.

In any historical perspective one would like to perform this present analysis, it is a fact that the demise of socialism and communism in Central and Eastern European (CEE) countries was the most important and dramatic change in the last half century. However, changing the political regime has been only the trigger for changing all aspects of the social, economical and cultural life of millions of people. Although we call this period of time a *transition*, it is not actually a transition since nobody knows its final stage. Defining this final stage as *capitalism* or *market economy* it is very fuzzy and hard to evaluate. In science, we define *transition* as being the evolution of a given system in between two known and stable stages, called generically the *initial* and the *final* stage (Figure 1).

In order to define the *initial stage*, we have to look up to a common background for all the former socialist countries and then, for some specific elements of each country. The common heritage of socialism implied that all countries in the region began their transition with a production system based on the command-and-control economy, without any exposure to the competitive business environment. Also, in all of these countries, the management process has been put under the communist party's authority in each organization, such that the decision making process to depend heavily on the political leaders. In Romania, the political regime was under a severe dictatorship, and all aspects of economical, social and cultural life have been restricted to a survival existence. A mechanical existence and a total obedience were the main characteristics of this unbelievable situation, which has been by definition the initial stage for the transition process.

If the initial stage is well known for each country, the *final stage* has never been defined by the new political leaders in any institutional form. Actually, there is no single or unique form of *post-socialism*, *capitalism* or *market economy* to be considered as a final destination of our transition, and there is not any proven scenario to follow in this journey. We face a quite new historical process to re-integrate ourselves into the western countries way of life and way of thinking after about fifty years of such a disastrous political, social and economical experiment. Since the American capitalism has dominated economic thinking, "*economists tend to be overconfident about exporting capitalism to other countries. Some think that exporting American law and institutions is sufficient to make capitalism blossom instantaneously. It worked for the United States, why shouldn't it work for other countries? For this reason, economists have typically been oblivious to the political preconditions for the development of capitalism*" (Rajan and Zingales, 2007, p. 1).

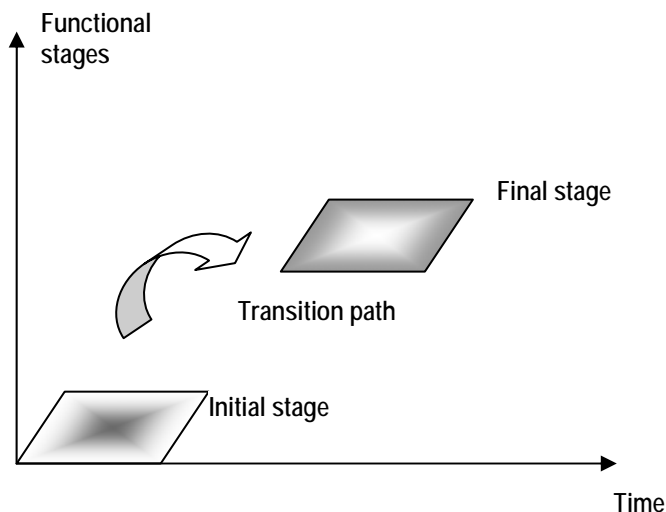


Figure 1. Transition from an initial stage toward a final stage

Thus, importing American capitalism is not going to work since there is a totally different historical framework and initial stage. Yet, we navigate in time toward capitalism and a free market economy, without knowing the precise coordinates of the final stage. Our transition has not a clear target and a well defined path of progress. In this context, any evaluation of the change process can be done only with respect to the initial stage and less with respect to the final stage of transition. Also, it remains the problem of change gradient, or the reformation speed of the old economy and of all institutions associates to it.

In his debatable book *The road to a free economy. Shifting from a socialist system: The example of Hungary* (New York: W.W.Norton, 1990), published among the first in this field, J. Kornai put forward several possible scenarios for this transition economy. One of the most critical problem of that time was the ownership reform. The book supported the idea of creation of an economic system in which private ownership would dominate. However, this idea left open the question of which is the best road to creating such a system. Two main strategies have been formulated: strategy A – organic privatization and strategy B – accelerated privatization.

Actually, the first one was in concordance with the *gradualism* approach, while the second one with the *shock therapy* approach. Hungary and Poland followed strategy A. In Hungary, hundreds of thousands of small and medium-sized firms were created, and a start was made to consolidate the banking sector. The strong inflow of capital was one of the main factors responsible for the improvement in Hungary's productivity and export performance (Konrai, 2000). On the other hand, in

Czechoslovakia strategy B was applied. In the first phase the assets of state-owned enterprises were dispersed among million of voucher owners, but they were soon concentrated among investment funds. These funds lacked the capital to develop the backward companies. Moreover, the funds were closely linked to the large commercial banks, which were dominated or owned by the state.

In Romania, there was an attempt of implementing strategy B in the beginning of transition, but the reaction of the inertial political forces was so strong that the transition followed the road of balancing slowly the change forces with the resistance forces. Also, since changes in the way of thinking take time the shock therapy could hardly had any sustainable success. An interesting adverse phenomenon happened. Because the winners from early stages of liberalization and privatization – typically those who enjoyed control over state assets and close ties with the political elite – opposed reforms that could erode their initial gains. Such reforms would include further trade liberalization, measures to facilitate the entry of new domestic and foreign competitors, and legislation to protect the entrepreneurs (Hirschler, 2002).

In a paper prepared for the World Bank Annual Conference, J. Kornai (2000) analyzed the past ten years of transition with respect to his former proposed strategies. His conclusion was that *“Transition is a curious amalgam of revolution and evolution, a trial-and-error process in which old institutions are either retained or liquidated, new ones tested and accepted or rejected. Different elements in the process may be very rapid, fairly rapid, or slow. Each has its own appropriate speed. Some changes call for one-stroke intervention; many others advance by incremental changes. There are more important criteria than speed....So the emphasis has to be placed on consolidation and stability, and at the same time, on sustainability of growth, not on breaking records with it”* (Kornai, 2000, p. 25). Actually, the real problem of this transition was the lack of any coherent strategy for economic and social development of each country. Formally, the first draft of the Romanian governmental strategy appeared only in 2000, ten years after the starting moment of this transition. That means, ten years of chaotic changes and wasted hopes.

At January 1st, 2007 Romania has been accepted as a member state of the European Union. This means a formal recognition from the European states that we developed a functional free market. The truth is that we put some significant distance to the initial stage of a socialist fully controlled market, yet political forces are still powerful in shaping the economic legislation and governmental decisions in favor of some groups of interests.

3. Barriers in implementing innovation & knowledge management

3.1. The ideological barrier

The most powerful barrier in implementing innovation and knowledge management proved to be the *ideological barrier*. In socialism, innovation and knowledge creation have been systematically discouraged based on ideological grounds. The only source officially accepted of new knowledge and new ideas has been the communist party and its leader. Since there was no competition and the whole economical system has been centrally controlled, innovation from employees has been generally blocked by a powerful *anti-capitalism propaganda and organizational culture*. The essence of this propaganda was to associate any successful theory or practice concerning economics and business to capitalism and to declare them as enemies of socialism. For instance, the concept of “business” was considered to be dirty, and therefore not to be used because it is a product of capitalism. Even today, after 20 years of moving toward a capitalist system, the word “business” is used sometimes with a negative meaning.

The same situation happened with similar concepts like “management” and “marketing”. Instead of learning about management we have been taught about scientific organization of industrial production. Also, the concept of “profit” has always been associated with the workers exploitation, according to Marx’s theory of capital. Another powerful concept being labelled capitalist was “competition”. This concept was associated also with workers exploitation and therefore its meaning became negative. The paradox is that, now, we must make use of all these concepts and of the theory supporting them in order to develop a new economy and to learn to be competitive. This ideological barrier transforms itself into an innovation killer, and became a strong inertial force during our transition. Inertial thinking is a very simple cognitive approximation of the reality, and it can be best characterized by the lack of *time* as a fundamental variable. That means that inertial thinking cannot understand *change*, since change needs time to evolve. Inertial thinking will oppose by definition any change and it will try to maintain the same situation.

Inertial thinking generates an easy and predictable behaviour of people which is an excellent feature for any control system. Thus, there is no wonder why it has been overemphasized in the former socialist education systems and cultures. Inertial thinking is useful in performing routine activities, but it is a very serious drawback for activities which involve change. Inertial thinking has been developed through education in all the former socialist countries in order to maintain as much as possible the historical dominance of socialism. Inertial thinking is one of the most important factors contributing to this long and slow transition process from socialism toward capitalism, in all the former socialist countries. However, this looks like a paradox since Romanians are very creative people, and the creativity potential cannot be developed at its full level of organizational applications.

3.2. The bureaucratic barrier

The concept of *bureaucracy* has been introduced in management by M. Weber as a means of attaining the highest degree of efficiency, by applying strict rules in the operational management in large organizations (Wren, 2005). Weber's vision came from the mechanical models developed by science and technology by that time. In his view, purely bureaucratic type of administrative organization: *"It is superior to any other form in precision, in stability, in the stringency of its discipline, and in its reliability. It thus makes possible a particularly high degree of calculability of results for the heads of the organization and for those acting in relation to it. It is finally superior both in intensive efficiency and in the scope of its operations, and is formally capable of application to all kinds of administrative tasks"* (Weber, 1964, p. 337). These models are based on linear thinking and a deterministic approach (Brătianu, 2007). These models work very well in static and deterministic environments. However, the economical environment today is characterized by rapid and unpredictable changes, which make bureaucracy very inefficient. It is a huge barrier in the way of implementing and developing innovation and knowledge management due to its deterministic behaviour.

Bureaucracy is an institution in the sense that it is a framework within which human interaction takes place, in a given context. The major role of institutions in society is to reduce uncertainty by establishing a stable, but not necessarily efficient, structure to human interaction (North, 2007).

Bureaucracy is not a creation of socialism. However, in socialism bureaucracy has been developed limitless because of its advantages in human control, and especially because of its predictability for final results. Also, in socialism, bureaucracy allowed people in higher hierarchical positions to spread their own responsibility and to have always somebody to blame for their mistakes and failures. Today, bureaucracy continues to flourish in the public administration institutions, and to kill any incentive for innovation and implementing knowledge management. Also, it is a powerful generator of corruption at all levels of public administration.

3.3. The ownership barrier

In socialism all companies belonged to the state. There were no private company, of any kind. State ownership was above the managerial power of any company, such that any innovation to improve processes and technologies, to increase the company economical success was strongly discouraged. However, obedience and passivity were encouraged. This attitude lasted during the transition economy until private companies increased their number, and eventually exceeded the number of state owned companies. Not only their number has been important, but also their economic role played in getting a higher GDP.

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There were official procedures for privatising state owned companies. However, in this particular case, for almost all companies the old top management survived, and their attractiveness for bureaucracy made possible its continuous development under different forms. The inertial thinking played also an important role in opposing to major changes. Unfortunately, in these privatised companies implementing innovation and knowledge management has not been possible. Actually, many of these privatised companies were unable to compete on the new free market and disappeared. Analyzing the whole transition process we may appreciate that the ownership barrier decreased in time, but it was a very strong force to discourage any innovation and implementation of knowledge management for a long time. In a way, the ownership of physical goods has been translated to the ownership of the decision making process. By decoupling the decision making from the real owners of such a process, in different particular contexts, it has been achieved a state of confusion about decision making and responsibility, with many negative consequences. Innovation means risk taking, which also means responsibility. Once this responsibility has been dissipated through the ownership barrier, risk taking became almost impossible. Thus, the innovation process has been slowdown dramatically.

3.4. The control barrier

Control is one of the basic functions of any management process, from the time of Fr. Taylor and H. Fayol (Wren, 2005). However, in socialism this function has been extended from production processes to the whole range of employees. Controlling people became even more important than controlling the quality of products and services. The very idea of being controlled induced a permanent tension in people and created an organizational culture based on fear. *“The creative process is social, not just individual, and thus forms of organization are necessary. But elements of organization can and frequently do stifle creativity”* (Florida, 2002, p.22). Innovation is by its own nature associated with some risks. In a culture of fear and permanent control innovation cannot be developed, and this situation lasted especially in state owned companies for many years during transition due to inertia forces. The new start-up companies developed new types of organizational culture able to overcome this control barrier. For knowledge management, this new organizational culture strives to develop transparency as a condition for improving communication. Knowledge sharing cannot be developed in a non-transparent working environment. Also, trust and credibility cannot be built in a stressful and non-transparent climate.

3.5. The linearity barrier

Linear thinking is just a cognitive approximation of nonlinear thinking (Brătianu, 2007). Complexity is reduced in this thinking pattern to those processes and events which are based on linear cause-and-effect development. For such cases, the

output is by definition proportional with the input, or the magnitude of the effect is proportional with the magnitude of the cause. It is very simple and very appealing. Our everyday life improved in many aspects due to this kind of simplification. Consider, for instance all the measuring systems for physical properties like lengths, area, volume, capacity, time, mass, temperature etc. Many salary systems are based on linearity, and even the educational systems in Europe are based on linearity. The industrial management has been designed using mechanical models and linear thinking patterns (Wren, 2005). However, knowledge, experience, creativity, cognitive and emotional intelligence, brand, vision and many other concepts are strongly nonlinear since they represent complex entities. If we apply in the managerial decision making processes the linear thinking pattern we will get unsatisfactory solutions.

The linearity barrier has been created through education, especially in schools. Physics laws concerning mass and energy conservation are based on linear models. In this thinking system, the distance travelled by a car is directly proportional with the car speed, the temperature of a heated water is proportional with the heat flux, the acceleration of a moving body is proportional with the force acting upon it, and the price of a certain quantity of apples we buy in the market is proportional with the quantity purchased. However, if we consider the following sentence “I am writing a paper” as a piece of knowledge, saying twice this sentence does not bring any new knowledge about what I am doing. Thus,

$$2 \times (\text{I am writing a paper}) = \text{I am writing a paper}$$

which breaks the rules of linearity. This is a clear example on non-linearity. Also, when the water starts boiling its temperature remains constant at 100 degree Celsius although more heat is added. Innovation is a strongly *nonlinear* activity. If a person may have a great idea in a working hour, does not mean that in two working hours he will have two great ideas. However, in management linear thinking is still a powerful tool for decision making, which means a generic barrier. Also, the decision making based on the democratic voting system is by its own nature a linear process.

In order to implement innovation and knowledge management which are strongly nonlinear we need to overcome this mental barrier. We must find ways to create a managerial awareness for new thinking patterns for innovation and knowledge management at any decision level in organizations and in society.

4. Overcoming barriers

In a critical thinking approach we should recognize some efforts already made at different economic, social and politic levels to find practical solutions for overcoming the barriers presented above. The *ideological barrier* after 20 years of historical transition in Romania is not any more a barrier in private companies, but continue to operate as a residual force in public institutions and those companies

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which have been just privatised, and they still have the old management. May be the new generation of managers formed in the educational programs of the new business schools will eliminate completely this inertial barrier. Actually, they have born almost immediately after the political change and have no exposure to the old socialist society. Their education has no ideological bias anymore, and this is an important factor in shaping their thinking models in a completely different way.

The *bureaucratic barrier* has not been born in socialism, so its elimination is just an ideal. However, the globalisation process and increased competition might become the driving forces for reducing bureaucracy and its inefficient consequences. The rapid and unpredictable changes in the economic environment will force companies to think in terms of competitive advantage, and thus there will be enough stimulus for reducing bureaucracy. The main problem remains our public administration where bureaucracy is still the innovation killer. In this domain, it is necessary a complete reform and although it is politically delayed, chances are to starts very soon under the pressure of the European Union. Also, as a solution for overcoming this barrier is to encourage new ideas and new approaches in decision making. Innovation and knowledge sharing could become driving forces in reducing bureaucracy, if they are supported by the top management. In our view this barrier will be easier overcome if the legislation will change and new types of employment contracts will be developed. *“Creative people trade their ideas and creative energy for money. But they also want the flexibility to pursue things that interest them on terms that fit them. Thus they trade security for autonomy, and conformity for the freedom to move from job to job and to pursue interesting projects and activities”* (Florida, 2002, p. 135).

The *ownership barrier* was very powerful in the beginning of our historical transition. It has been continuously reduced by two contributing processes: privatisation and starting up new businesses. Privatisation of state companies is almost completed, so this barrier is operating mostly as a mental inertial force.

The *control barrier* is still powerful. It comes from the industrial management but it has been enhanced by the socialism thinking. The only solution for reducing this barrier is to convince new managers of the negative consequences of its presence, and of the clear incompatibility with the knowledge creation and sharing. Especially with such processes like transforming tacit knowledge into explicit knowledge and exchanging tacit knowledge. Innovation can be implemented and developed in an open organizational culture based on trust and transparency. That means intensive internal communication and breaking down these practices of controlling people and not processes. Another solution is to promote leadership and to switch from controlling practices to effective motivation systems. *“The no-collar workplace runs on very subtle models of control that rely on people’s intrinsic motivations. As companies try to motivate and persuade us rather than boss us or bribe us, they’re basically seducing us to work harder – and we are most willing to be seduced”*

(Florida, 2002, p. 134). One very effective way of changing the hard control from soft control is to challenge people to create and compete based on their innovations. Also, promoting leadership constitutes a new and quite extensive activity on the human resources market in Romania. Leadership and teambuilding are among the most successful topics on the corporate training market, which is a good sign for overcoming controlling.

The most difficult solution is to find practical ways for overcoming the *linearity barrier* since that can be done only by developing a nonlinear thinking pattern throughout the educational system. We do not consider replacing linear thinking by the nonlinear one, because we need both of them. We want only to promote a new perspective of thinking where linear pattern is just a cognitive approximation of the nonlinear thinking pattern. This can be done by stressing the complexity of the business environment and the need for a more elaborate management based both on rational and emotional intelligences.

5. Conclusions

The purpose of this paper is to perform a critical analysis of implementing innovation and knowledge management in the Romanian economy. Our research identified the most important *barriers* in such an implementation: the ideological barrier, the bureaucratic barrier, the ownership barrier, the control barrier, and the linearity barrier. The ideological and ownership barriers were very strong in the beginning of historical transition due to their inertial force, but now they diminished enough to be overcome. The bureaucratic and control barriers came from the industrial management but they have been enhanced a lot during socialism. They can be innovation killers if we do not construct practical solutions to reduce their power and to create a new organizational culture based on trust and transparency. May be, the most difficult barrier is the linearity barrier, as a result of the educational system. However, it can be overcome if managers will be conscious of the nonlinear dimension of the environment complexity and will learn the limitations of the cognitive approximation through linear thinking patterns.

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