Implications of the Information and Communication Technology Development on Firms' Performance

FRATOSTITEANU, COSMIN

2008

Implications of the Information and Communication Technology Development on Firms' Performance

Lecturer PhD Cosmin Fratostiteanu
University of Craiova
Faculty of Economics and Business Administration

1. Technological Exchange - General Over-view of Informational Society-Knowledge Society

The society towards we are heading is and will be an Informational Society-Knowledge Society (IS-KS). This mainly relies on using Information and Communication Technology (ICT). The syntagm which designates the new society particularly points out the means on which it will rely on its progress, which, at first sight, gives the impression of one technicist, unilateral name. The syntagms which have defined societies until now, contain a key-word (slavery, feudalism, capitalism), which synthesizes a scale of possible social situations in which people, individual or/and in group, are inevitably placed, according to certain conditions, making a specific economic-social structure.

Nowadays, society is defined by the syntagm "new economy", which clearly presents the message of some profound changes which are taking place. Of course, the new economy supposes a lasting growth, but it induces another approach of this lasting growth, different from the one which was made so far.

Therefore, the new economy must start from the principles which were designed in various studies, from proper initiative or from practical reasons of international organizations which point out both the existent situation and requirements, immediate and future aspirations from which the counter reacting effects accumulated in the process of existence until now never missed. In our view, the most important principles found in the thematic literature are the following: the principles of human existence in closed circle (until the gain of extraterrestrial space); the principle of human reintegration in nature; keeping and growing the biomass, biodiversity and bio-productivity; permanent ensuring of resources; the principle of economic, social and ecological efficiency; the society existence is interactive with the environment; the principle of social equity; responsible governments for the way in which, through promoted policies, they manage and increase the resources for insuring the future of new generations. The new economy is forming and it will function due to the democratic character of Informational Society-Knowledge Society.

The new economy will sanction technocracy, but this has to possess a good training, which induces the idea of insuring a priority in education and scientific research development. Significantly, *Friederich von Hayek,* said, many years ago, that: *"Only direct participants to economic processes possess the necessary knowledge for taking efficient decision".*

Learning becomes the general process specific to the new economy, because saving resources and directing actions to satisfy bigger and more diverse needs against limited resources, supposes knowledge, generalization, learning for all IS-KS members.

For achieving economy activities in a certain way, there must be knowledge in this sense, and for ensuring them, the knowledge must take place before economic action. ***Therefore, there is a priority for all the processes which generate new knowledge, and for technical-scientific research.*** The general result of learning must be an evident increase of general efficiency, and especially the economic one. Of course, at the same time, we have the problem of adequate measuring of economic processes, including efficiency itself, for gaining more relevance and accuracy in front of the respective processes.

2 The Necessity of Information and Communication Technology (I&CT) Implementation

At the beginning of the third millennium we talk about informational society as a new stage in human civilization development, as a revolution of information and communication technology (ICT) and of labor nature. Adopting ICT in all activity domains represents the essential condition in developing every economy and providing the success of the informative society.

A must for setting up informative society is to understand new mechanisms and the rules which govern them, the objectives and possibilities to make work at distance an efficient way of production, in same way productive and free of drafts, routine and inefficiency. In the same measure it is about building new organizational, functional and social structures. That's why it is important to be studied and analyzed the effects of using the ICT in new methods of searching and innovating, labor and consumption.

Network economies grow productivity, which leads to an increase of potential result of economy (for example it could be obtained a rate of growing without inflation). Enlarged productivity can also lead to a short-term decrease of work places, if capital and good markets do not function efficiently and do not set up new activities, which transform potential result in real growth. In these conditions, dynamic capital markets are necessary, which support new companies, and a market of work-force which offers skilled and flexible personnel.

Electronic information and knowledge transmitted through computer networks had became central element, around which is organized the society, and that will be the final result in new social arrangement, with new rules, new methods of organization and new ways of thinking for governments and all economy sectors.

Synthesizing, we can affirm that productive system gets out from the shadow of economic model of standards, for entering in the world of specific, in which dominates co-production logic (integration client/costumer in process of conception and production). Also, it's important the interactivity and integration grade of knowledge's process, based on cognitive interactivity, in production process. Innovation is the safest method of development of high abilities, and hi-tech products with big added value. T&CI is not the only representative of hi-tech industry in a country, in competitively growing, and research development is important for a larger field of industrial components.

Therefore, research approach was centered on: a presentation of international transfer of technology, of its direct-indirect forms, and on its economic and social effects; and also on highlighting a partnership with the academic environment for adapting the curricular area of hi-tech sector to economy's needs.

Thus, a series of objectives must be followed: a faster development of advanced technologies in all economic sectors, and an implementation of lasting development of technology's directions at provincial level, the growth of company capacities to cope with the technological evolution component and European and international level competition; developing activities of research and innovation in enterprises, especially in hi-tech domains; promoting viable technological clusters, able to become competitors on world market, through support given to form and develop technological clusters/networks, including enterprises, research and developing institutions and universities with similar technological profile, especially at regional level, and through supporting strategic programs of technological development which were launched by important companies or industrial associations, especially in hi-tech domains.

An important topic of my paper is the development of science and technology of information and communication. This offers a great potential to create new goods and services, innovation being faster and faster. Managers should permanently think about the most ingenious way of creating and exploiting the assets of knowledge in order to provide competitive advantages, to develop productivity, and to be highly competitive.

Therefore, it is necessary that companies should be more flexible and more innovative, administrating the assets of knowledge in an effective way for having new sources of competitive advantages. Companies should cooperate more, and form networks, especially based on new technologies, and to strengthen their links with scientific and engineering base, sharing equipments and often people.

3. Romania and the Perspective of the "New Economy"

An analysis of actual situation of Romania can say a lot about the chance which our country has in new global economic landscape. The studies shows that in Romania, poverty still has a big percentage, owning to some factors as inequality of incomes' distribution or different level of education. This situation is trying to be mended through measures and economic developing strategies in education, health, social assistance, legislation, and on labor market. The situation which results from hi-education dedicated to ITC is a favorable one, the image which Romanian specialists have aboard being a favorable one, according to their preparedness. The problem is that a great part of these specialists leaves the country, emigrating in developed countries, where the have the perspective of a better salary than the one received in the country. It cam be observed the fact that young generation is more flexibly and more interested by using the ITC technology than the adult generations, who still have a limited perception concerning to domain's advantages and risks.

Another major problem is the high cost of hi-technology, which determinates restriction to the access to these technologies only for persons with relatively good material situation. With all high costs, the ITC has a bigger and bigger level of penetrating Romanian market. The PC, the internet, mobile and immobile telephony, but also cable TV, start to become very known in Romania. Although, the absorption power of these

technologies is still low, comparatively with other countries from Northern America or Occidental Europe, concerning of high costs.

Through practiced policies, in Romania, now is tried to sustain this domain through a series of measures destined to encourage informational society development. It is also given priority to ensuring quality to education and professional qualification, including special actions for fitting out schools with ITC equipments, and growing the level of connection to internet.

Setting up this economy mainly starts with ***changing human outlook***, of their way of thinking. There isn't an obvious solution for implementing this way of thinking in a country, company or other kind of organization, but the Government has a huge responsibility in adopting reforms in education, in encouraging entrepreneurial spirit and creativity, and risks linked to this challenge, but also in creating institutional and legal frame good for developing informational society.

The next step in developing economy based on knowledge in Romania is ***setting up the ITC infrastructure.*** Romania, which wants to promote an economy based on knowledge, also has to give priority to infrastructure's development. The bottoming owed to telecommunications infrastructure is a national problem and that's why developing of these services is very important.

In this new economy it can be observed a change of companies' organization: passing from a vertical hierarchic structure to one more plane, horizontal, which puts the accent on team work, involving a bigger recognition of thinking autonomy and knowledge.

Technological parks represent an important component of informational infrastructure. Studies to regional development had proved that areas with informational technology contribute to general economic wellbeing through distributing economic benefits. Once made, those technological parks will attract external investments for software projects, which will help Romania to become more competitively on international market.

Software industry in Romania is one of the domains which can have a shinny future and a decisive role in economic develop of our country.

Another measure which must be taken for developing the ITC sector is *ensuring the legal framework* and asked settlements of using ITC and developing informational society. Of an major importance informational infrastructure success is ensuring the right of intellectual propriety, a measure which can takes to reducing the software piracy.

Promoting Romanian *ITC produces* and services aboard and *investments and* external partnerships *encourage* is a priority, looking to new economy's implementation.

While Romania advances in developing this new economy, it is obvious the fact that it is absolutely necessarily *a qualified labor,* able to use in optimal way the new technologies, and *flexible,* able to adapt slowly to new situations. For this, trainings in informatics domain had become very often in companies. Because in this economic medium, being in permanent change, the accent is put on applicable ideas and innovation, and only the firms which will have the capacity of adapting to new concepts and technologies will survive in informational society. So, it is required a briefing of managers and employees, an application of some successful economic practices, of some policies for encouraging the economic activity and transforming in private firms the companies owned by state which can't resist on market.

The successful on economy based on knowledge, on long term, needs innovation and creativity, qualities which are especially promoted by the ***high education*** system, than the medium one, which more develops basic skills.

These are just a few of measures which must be taken in Romania, for following this way, of economy based on knowledge. The reality in our country indicates that new economy's characteristics designed in the last few years, represent an important step to informational society. ***New Economy*** changes Romanian economy in an important way, because Romania is involved in global and European effort of developing Informational Society, national priorities in this domain being harmonized with strategically targets defined in e-Europe, and with settlements of UNCTAD and OMC.

References

Bebenel, S	*The policy of international technology transfer* – Ed.Tehnica, Bucharest 1977
Ciobanu, Gh.,	*International economic transactions,* Ed. Imprimeria Ardealul, Cluj Napoca, 2004
Drăgan G.,	*International trade's foundations* , Ed. ASE, Bucureşti, 2004
Geamănu, R. G.	*Technology transfe through engineeringcontract*, Ed. Lumina Lex, Bucharest, 2001
Inkpet, Andrew şi Dinur, Adva	*The transfer and management of knowledge in the multinational corporation*: considering context, Thunderbird, 1996
Jones, Peter	*Knowledge Strategy*: Aligning Knowledge Programs to Business Strategy, Redesignreserch, 2004
Nerkar, Atul şi Shane, Scott	*Determinants of Technology Commercialization: An empirical Examination of Academically Sourced Inventions*, Columbia University, 2005
Rotaru, I.,	*The management of international commercial transactions and competitivity strategy* , Ed. Mirton, Timişoara, 2007
Teece, D.J.	*Competition, cooperation and innovation: Organizational arrangements for regimes of rapid technological progress*, Journal of Economic Behavior and Organization, 2003
Ţcovschi, V.,	*International transfer of technology and economic development,* Ed. Politică, Bucharest, 1983
Yongliang, Han	*A knowledge-based view of strategic alliances*, International Academy of Business and Economics, 2005