

TECHNOLOGICAL AND SCIENTIFIC EVOLUTION INCORPORATED IN TECHNO PARKS

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ABSTRACT: *Economical growth and durable development of our society impose the assurance of an ample innovational dimension of development like an obligatory condition for the modernization of the scientific and technological base. The approach to some criteria of innovational development is possible if are created the special conditions for the researches realization, for the maintenance of humane creativity and promotion of the new products. To realize these goals, industrial countries created special locations- industrial parks, techno-parks, innovational incubators which represent preference zone for the businessmen and an optimal solution for the business development.*

KEY WORDS: *durable development, innovational development, the American model of the techno-parks, the Japanese model of the techno-parks, the mixed model of the techno-parks.*

Spectacular evolution of innovations and technologies, registered in some countries in the last few decades, constituted a major premise to development and investment strategies. The new types of investments, being generated by new financing and management schemes, was located in new forms - like special economic zones destined in initiation, creation and presentation of news - ideas, its deliver to realization and incubation period of creation. The ways that other developed countries created such zones become example for those who want and conceives these kinds of strategies.

More then that, European and Global context, determines for Republic of Moldova the acute necessity of economical competitive growth. The competitive advantage of an economy doesn't rely only on products, services or natural resources and not even on geographical and historical particularities. At the moment competitive advantage can be created only by sustaining and promoting knowledge, through the science and innovation. These desiderata constitute the bench mark of growth for all

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the economies. They are fundamental also for growth of economical and social competitiveness of our country.

Nowadays knowledge is perceived like a motive power of increase and productivity and also of the globalization that generates an increased interest towards information, technology and education. Science and technology become essential pillar of the new society and economy. Technologies are those who allow a transfer rate of the rising knowledge at a lesser price and with an increased efficiency. The role of them is determinant in economical growth.

The most eloquent example in which science and knowledge determine the abilities of labor force create and develop advanced technologies, innovations, but also generating mechanism of these from the scientific-research, elaboration and production domains are represented by scientific and technological parks (STP) - *techno-parks*. These are some of the most efficient mechanisms of framing the entrepreneurial structures in techno-scientific domain and fusion of the scientific and innovational activities. STP ensures the link between research institutions and superior education structures, business and government organism's inclusive management of interrelations between these groups, thus forming an integration mechanism of science and production of the financial structures and government institutions. At present STP are nominated as a primordial factor in creation and development of the informational technology (soft products), communication and innovation.

The first attempt of high technologies and innovation transfer in the production sector was performed at the beginning of '50 in USA. The registered achievements become a bench- mark for the development of high technologies and also for the economical growth obtained by states that take over rapidly the experience of USA. At the moment STP, on it different aspects: scientific and technological incubators, techno-parks - are incontestable parts of economy that tend to continuing economical development. Its creation and development means implementation of new business strategies, centered on exploration of new niches, new schemes of financing the investments in innovations, advantages of savings like a consequence of using high technologies.

A considerable growth of techno-parks, incubators is remarked at the end of '70 of the past century. After USA, a special place in their constitution was taken by Europe; here STP was opened first in Great Britain, Belgium and France and later in Germany (1983). At the middle of '90, in whole world, have been working 1200 special economic zones and from them 400 were techno-parks¹. Pointedly STP are technological and economical complexes that can play host for scientific research centers, technological and innovational incubators, also offer continuing qualification, prognoses, ensure all the necessary facilities for the organization of bargains, exhibitions and market development. STP can be conditional separated in three models: American (USA and Great Britain), Japanese (Japan) and mixed (France and Germany).

¹ Experience of techno-parks performances in China, [www. project@paton.kiev.ua](http://www.project@paton.kiev.ua)

The American model of the techno-parks includes three types of special economic zones:

1. “**Scientific parks**” in a tight sense of the word;
2. “**Researching parks**”, in which, in contrast with first, innovations are elaborated and brought to the type technique degree;
3. “**Incubators**” (USA) within universities “give host” for the new created companies, which rent the land, buildings with a reduced payment. Also they perform consulting and management services, have access to techniques and laboratories.

At the beginning of '80 in Great Britain and in East Europe have appeared and developed a new type of STP. It was oriented to the necessities of the small “innovational” enterprises - innovational centers, similar to American incubators. Their goal was fusion of knowledge expressed through the capital investments and entrepreneurial business, mobilization of public and private capital with the purpose to ensure a start for the new innovational companies.

The Japanese Model in contrast with American model, it suppose to set up new cities on empty places, which concentrate in a single place scientific researches in high technologies and industrial production based on laboratory studies. The project “Technopolis” of creation of the innovational technological centers was decided to realization in Japan in 1982. These kinds of zones work successfully in China. Technopolises have a few common criteria, no matter the country of creation:

- There are zones chosen close to town-centers which embrace a financial, economic, transport infrastructure and centers with a developed scientific infrastructure (“parent cities”);
- The zones usually cover a huge territory (about 500 square miles in Japan);
- Their involve set of modern technical-industrial complexes, universities, research centers and institutions, comfortable living arias with a cultural infrastructure;
- The results of scientific researches are sold and this supposes that the elaborated works have applicative specialization.

The Mixed Model. The countries that take over from both model of techno-parks created the “Mini-incubators” (France) that represent institutions endowed with new technique, skilled, trained workers that have the purpose to offer consulting services to all persons that initiate a business. In this model techno-parks are looked as an instrument of creation of an innovative and attractive climate and also instrument of consolidation of the technologies and procedures. From the countries that propose to take over and transfer the France experience in the creation of these kind of special zones is Romania.

Science and technology, like a key element for a competitive economy, is put into practice also in development strategies adopted by some countries in developing - China, Brazil, Turkey, India. As an example, one of the biggest Asian techno-park is located in Taiwan (Sindjou). This techno-park cover a territory of 380 hectares and it is specialized in the creation of communication systems, computer production, soft

programs, and medical inventory. A number of 135 companies activate on the territory of this techno-park that have 4 thousands workers.

The accelerated development of informational technologies and innovations in all sector of national economy impose the necessity of creation such o islands of “technological paradise”.

The creation of the zone where organically is solved the issue of technological processes optimization, financial services, management and implementation of innovation become a primordial necessity of the time.

The production activity of the techno-parks, as a specialized structure in the production of innovations, is created by the soft programs. An eloquent example is the techno-park from India “Bangalore”, created in 1984. At the moment this techno-park has more than 80 thousands specialists, a large variety of research institution - scientific, universities and colleges. The activity of these institutions in common with a sustained and promoted strategy was brought the bankable effect. This zone is considered one of the leaders on the international market in the creation of soft products.

Other example is the realization of the Microsoft Company, in common with the Turkey government, of a project - “Tehnokent”, in Istanbul. The complex will be build on the territory of 92 thousands square meters and it is supposed that this zone will extend on a territory of 552 thousands square meters. Microsoft Company want to set up a base of informational technologies for the countries from Neat East and Africa and also to employ 500 thousands workers.

The important actions in the creation of STP were realized by a lot of states in CSI. Thus was prepared the legislative base and was started the works for the realization of the project “Park of informational technologies” which will be opened near of the city Alma-Ata, Kazakhstan.

The Russian plans to open 4 techno-parks: in Novosibirsk, Sankt-Peterburg, Nijnii Novgorod and Dubna. A strategic attention is given to techno-parks in Uzbekistan. Estimation of the soft market in Uzbekistan is about 7-8 millions USA dollars per year. The profitableness of the soft products, in Uzbekistan, is very high. The government of this state makes all the possible for the realizations of the measurement regarding the creation of a favorable climate. All these are made to attract investors in informational and innovational technologies.

Informational technology is one of the most attractive products created in techno-parks and incubators. This doesn't need considerable investments and it is base especially on the skilled, trained personal and a system of order attraction.

Thus these specialized zones are set up in a conglomerate of institutions that can ensure a flux of licentiate specialists and sustained by the government through the promoting and stimulation program of the government.

The facilities given by the government are different regarding each particular country and the goal of techno-parks creation and it zone position. It is necessarily to mention a few important characteristics for the special economical zones:

- ✓ The foundations of these zones constitute a major strategy promoted, sustained and managed by the government;
- ✓ Fiscal relief given to firms that activate in these zones, inclusive relief from taxation on profit in the initial period, and discounts in different measures in ulterior activity;
- ✓ Free transfer abroad of the in-house facilities and the obtained profit for the natural personal and legal entity;
- ✓ In case of reinvesting the profit the enterprises are relieved of profit tax;
- ✓ The possibility to buy products at the export prices, this means without tax on added value;
- ✓ It is implemented financing system like “venture capital” with the purpose to attract investments in technologies with major risks.

The development of the innovational process in Republic of Moldova it is relatively new. Although some specialized companies in production of soft programs were licensed and begun to activate from 1993. A real proportion in their activity was registered beginning with 2000. The number of companies that produce soft for the commercialization it is limited. The majority of them are centered on the creation of the products on an order in which it is easy to control the production process and products commercialization. Besides big companies¹⁰ activate a series of small companies that doesn't publish their activity in the IT domain. According to information undertook from The State Chamber of Registration, license to perform soft production was obtained by 300 candidates. In reality only 10% of these 300 are trained in soft production activity. About 95% from the total number of companies that activates in Republic of Moldova are located in Chisinau, the rest of companies that product soft were created additionally in companies which perform IT services or commercialization of PC. The products and services of these companies are directed on local market in localities where they are registered. The great companies that activates in Republic of Moldova perform soft products both with national and international character. The volume of these products on market grows significant and their role becomes pregnant and vital more and more, that's why the promotion of a national strategy related with the soft industry is important for our country.

The mentioned strategy was adopted successfully in Baltic countries, Russia, Romania. In those countries the control on the rapid transition to an informational society is managed by government, who is the main controller in the process of transition to an informational society.

The main aspect for the elaboration of an efficient and relevant strategy in any domain, especially in IT, is the analyses of the situation regarding IT industry on the base of authentic statistics data. Besides data it is important also to use data from different official canals of a government institutional structure. This moment is missing

¹⁰ The internal market is represented by the following soft companies: Deeplace IMSP, DNT, RitLabs, Zingan, Unisim, MoldInfoNet, Riscom, Diginet, Daac-Sistem, Dekart, WebArt.

in Republic of Moldova. Additional to the existent legislation regarding IT industry it is necessary to approach a harmonious coordination of other industrial and investment strategies which will make more efficient the transition process to an informational society.

One of the solutions it is to create scientific and technological parks which will allow the successful realization of the base objective to the transition to a new society, will allow the foundation of an favorable ambient for the companies that activated on the soft market (innovations), will facilitated the electronic commerce ensuring the growth of the demand on specific products. Like a consequence those will drive to the growth of demand of professional specialists - growth of the volume of innovational researches in superior educational institutions - growth of the number of analytical specialists and managers. As well this will ensure a rigorous control on the quality of soft products, diversification of the soft products proposed on the intern and extern market and rapid transfer of realized innovation on the global market.

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