Science, Engineering & Education, 1, (1), 2016, 121-124

Clarification of the correlation between the technological transfer and the enterprise competitiveness

Nikolay Karev*, Angelina Terzieva

Department of Economy and Management, University of Chemical Technology and Metallurgy, 8 Kl. Ohridski, 1756 Sofia, Bulgaria

Received 15 March 2016, Accepted 05 September 2016

ABSTRACT

An analysis of a technological transfer and competitiveness essence is presented aiming to clarify the correlation between the technological transfer and the individual enterprise competitiveness. It is specified that it brings about a higher profit achievement, market positions improvement and production of higher quality products.

Keywords: technology transfer, competitiveness, correlation.

Enterprise competitiveness and its constant incensement is a matter of a great significance under the conditions of a dynamic market environment. Furthermore it is a responsibility of the national economics. For this reason the constant competitiveness improvement is related to the implementation of technological transfers. They determine the increase of enterprise competitiveness and achievement of high results as well as the provision of a market share and an environment that predisposes companies to innovation, flexibility and competitiveness.

Transfer of new technologies to the enterprises is related to the replacement of old products, incensement of efficiency through implementation of improved technological methods, new technical means, cheaper components, etc.

Nowadays, the competitiveness could be defined as the ability of individual sectors to achieve a new level of productivity based on an innovation approach to the human resources, capital and physical assets [2]. Competitiveness incensement is a problem of the companies as far as they are the main economic subjects. At the same time, the competitiveness has other aspects. They refer to the macroeconomic stability, the favourable environment and the strategies of the companies, the institutions quality, the physical infrastructure, the technological development and innovations, the human resource quality, the economic liberalization, the financial system. The economic policy of the developed countries is

* *Correspondence to: Nikolay Karev, University of Chemical Technology and Metallurgy, 8 Kl. Ohridski, 1756 Sofia, Bulgaria, E-mail: karev_nk@abv.bg*

focused on the establishment of an environment that predisposes the companies to innovation, flexibility and competitiveness, to an increase of productivity and vacancies. This in fact determines the correlation between the competitiveness and the technological transfer process.

The market globalization and the trade liberalization has recently led to a decrease of lower range comparative advantages – cheaper labour costs, relatively cheap electricity, raw materials and materials availability. On the other hand the higher range advantages like the sectors capability to develop high-tech productions, to produce and export goods of an intellectual component and a higher degree of processing obtain increasing significance. Productions of the kind are potentially competitive and could be serious. Changes in the world economy lead to higher levels of competitiveness among companies. This requires all companies (including those in Bulgaria) to accept new strategies providing them to develop new competitive advantages based on knowledge and innovation. It should be specified that the state models and ensures the environment where companies could support and update their competitive advantages. The latter are their strengths in fact as they affect the expenses, the quality and product differentiation or both and reflect on the enterprise capacity of better satisfaction of the needs and requirements of its clients. The competitive advantages ensure an additional value for the consumers because of the lower price, the higher quality of the products or both [3]. Thus they provide competitiveness of the enterprise products as well as achievement of higher economic results and better economic effectiveness.

The competitiveness is the main factor determining the successful market positions of the individual enterprises and hence of the national economy. It depends on different factors on different levels. Basic factors are as follows [1]:

- innovativeness;
- capacity for flexibility and change;
- effective human resource management;
- options for long term profitability achievement;
- overcoming competition.

The company competitiveness includes its capacity of constant renovation and perfection. Adequate acceptance and implementation of innovations is the ground of their success. The key to the permanent success is their constant improvement and innovation [3].The latter are related to the company innovation policy and result in performed innovation activities within the innovation process. At this point the role of the innovation process should be defined. In this case it is observed as a result of fundamental studies that account of the necessary information and knowledge base for research and development activities. The initial concept implementation and the new product introduction define the end of the innovation activity. The process of its further dissemination is beyond the enterprise borders and depends on the environment factors. That is why it is not a subject to pre-planning.

The establishment of a new or an advanced technology, of a new combination of individual technological elements (an equipment, a material, production methods, organization provision) is usually determined by the transfer of the ideas and their implementation within the innovation process. The definition of the stages of the innovation process implementation in cases where the sector provides its performance is of importance. Practically, the basic ways of providing the sector with innovations refer to the scientific research and development activity in the sector and purchase of new technologies [4]. The following stages of technological innovation process could be defined on the ground of the considerations pointed above:

1 stage – Definition of the problem;

2 stage – Generation ideas and their appraisal;

3 stage – Search for a scientific and technical

decision;

4 stage – Preparation of the initial implementation to enter into operation.

The idea generating process should be accompanied by a procedure of their assessment. Thus upon selection the specific company can concentrate the necessary financial, labour and know-how resources on the most significant among them. The selection criteria referring to the best offers could be different but in all cases they should be pointed towards provision of conformity between the newly made product and the other company features – its goals, strategies, markets, and technologies.

When the idea has been selected, it should be implemented as a scientific and technical decision. Thus the initial concept is turned into a material product of specific features. It is of great importance to find the degree of the product compliance with the initial idea and the requirements set beforehand.

The transition from the definition of the idea to the corresponding technological decision goes through the following independent activities:

• Identification of the correspondence of the present level of science and technology to the requirements referring of a specific scientific decision of the problem and the appropriate timing of its realization.

• A search for a technical decision. During this period of time the engineers and the technologists define a further specification through creating a test model (prototype). The latter should be tested. It is a completed model containing the main features required without some additional elements. Full documentation and specification of the tools and machinery equipment used for its production is required. Clarified projects for changes in the course of production and legal information concerning the response to the requirements of the corresponding legal acts [6, 7] have to be presented as well. The testing carried out has to be in a strict compliance with the specifics of the product produced. The successful implementation of the described processes is concluded with the introduction of the production process and the corresponding technological product to a regular operation. The preliminary preparation refers to the identification all organizational, economical and technical conditions required for the actual implementation of technological product as it may include new equipment, new raw materials, and new production methods.

The advantages of the new technology (or its individual components) are best outlined in the course of the actual implementation. Occasional mistakes made in the previous stages can be also documented. The processes applied are optimized and regulated in the course of the work.

A higher level of competitiveness can be also reached through investments in human resources. The latter and the competitiveness are specifically and in a way two-directionally connected. The human capital investments are of paramount importance and specify the way and dynamics of human resources development aiming to meet the requirements presented [5].

The practice of the developed counties verifies that the technological development determines the sector competitiveness establishment in the last years. It determines the basic priorities faced by the individual companies that operate there. The successful developing companies are interested in a significant decrease of the period starting with creation of the product creation and finishing with its appearance on the market. Another trend that can be noticed results from market segmentation. Consumers have ever increasing requirements which force the companies to look for original and innovative decisions to meet them. Another challenge comes from the very nature of competitiveness, which is strongly dominated by the technological capacity. Under the conditions of a dynamically developed practice of subcontractors, the companies have to show a specific technological potential and capacity to act as subcontractors in a system of large consortiums and international companies.

Table 1. A correlation between the technological transfer and the competitiveness.

A technological transfer	Common features referring to	Competitiveness in respect to
An information transfer	Achievement of a higher profit	The price
A transfer of items and labour meanings	Improvement of the market positions	The market place
A personnel transfer	A high quality product	The quality

These three trends are not mutually excluding. In fact they combine and interweave. Their joint action compels the companies to comply with them.

The trends specified above provide to conclude that there is a logical correlation between the technological transfer, the innovation policy and the company competitiveness. This correlation is illustrated in Table 1.

CONCLUSIONS

The survey performed shows that the technological transfer is practically one of the basic approaches in achieving competitive advantage. It is specifically related to innovations in the production sector and is responsible for the integration of the innovation activities in the economic field and the implementation of the scientific development achievements. A technology suitable both for the transfer and the user who could use it immediately are required the transfer implementation. Common points between a technological transfer and competitiveness could be observed in three directions - achievement of a higher profit, improvement of the market positions and higher quality products production.

REFFERENCES

1. P. Iliev, Macroeconomics, New Bulgarian University, Sofia, 2003, (in Bulgarian).
2. M. Porter, Competitive Advantage of Nations, Classic and Style, 2004.
3. M. Velev, Evaluation and analysis of corporate competitiveness, Softraid, Sofia, 2004, (in Bulgarian).
4. Iv. Georgiev, Management of corporate investment and innovation, Sofia, 1997, p.51.
5. V. Dimitrova, Dynamics of the competitive advantages of trade in consumer goods, Journal of Dialogue, 2006, (in Bulgarian).
6. M. Slavova, Innovation. How to turn the idea into a product, Varna, 1996, p. 146, (in Bulgarian).
7. M. Pandeva, Innovation, Sofia, 1983, p. 104, (in Bulgarian).