



Globalization and Regionalization

Iryna THIR

**THE ROLE OF TRANSNATIONALIZATION
IN THE CREATION OF INTERNATIONAL
PRODUCTION NETWORKS**

Abstract

The article considers the difference between the concepts of production chain and production network. The author analyzes the interconnection between transnationalization and its influence on the international fragmentation of production, in particular, on international production networks, and reviews the role of global cities in the development of international production networks.

Key words:

Global cities, globalization, international fragmentation of production, integration production chain, international production networks, transnationalization.

JEL: F53; F15.

The modern tendencies of globalizing economic space offer alternative variants for the development of economic niches. The duality of transnationalization provides a possibility to consider regionalization as a driving force of the international fragmentation of production (IFP). The modern school of international

© Iryna Thir, 2008.

Thir Iryna, Candidate Student, Ternopil National Economic University, Ukraine.

economics interprets the notion of regionalization as the result of long-term transformation of the connections between countries, blocks or clusters [1]. The models of IFP presented in the works of Ronald W. Jones and Henryk Kierzkowski determine the necessity for the international production networks (IPN) nowadays. Service links are the key and main element in formation of such production networks. The models of the international fragmentation of production enable us to consider IPN as one of the modern methods of production distribution, and thus to place the fragments of production in the new production blocks. As a result of IFP, the cost of production is reduced. Transnationalization offers alternative ways to consider production. Now, international economists write about a new «century of networks» taking into account the efforts of large corporations to create global networks. Management of corporate strategic relations is considered as a basic factor of progress in business, while the dynamics of networks – as a basis for international marketing [2: 103]. Special attention is focused on the formation of global networks, which include not only production, but also innovative businesses, complex management of product quality.

The OECD research confirmed that network organization creates a new innovation system, which ensures not only scientific and technical, but also organizational changes. The main advantages of networking are risk-sharing and flexibility needed in the conditions of rapid market change. Therefore, corporate networks attract much more foreign direct investments than traditional companies do. A transition to the co-operative network relations among the firms was named «*networking revolution*» at the end of the 20th century [2: 104]. The author believes that, at first, the model of the integrated production chain was used, and only in result of economic transformations appeared the international production network.

Therefore, appears a need to: a) differentiate between the notions of a production chain and a production network; b) analyze the interconnection between transnationalization and its influence on the international fragmentation of production and, in particular, on international production networks.

1. The Difference between the Notions of Production Chain and Production Network

The concept of an international production network was developed in many works by Dieter Ernst and is defined as a geographical distribution of activity of the leading brands of producers of commodities and components, relations with their branches and with independent suppliers [1: 50]. Michael Borrus in his work «International Production Networks in Asia: Rivalry or Riches» determines the IPN as the inter-firm relations through which a firm organizes the entire range of its business activities: research and development, product design, manufacturing, distribution, and support services [2: 58]. Such interpreta-

tion of the international production network is similar to the concept of «vertical keiretsu» used and actively realized in Japan. The study of the phenomenon of international production networks is undertaken by the foreign scientists, such as Greg Linden (USA), Françoise Lemoine (France) «Integrating Central and Eastern Europe in the European Trade and Production Network», Rob van Tulder and Winfried Ruigrok (Germany), Timothy J. Sturgeon (USA), John Zysman, Eileen Doherty, Andrew Shwartz «Cross-National Production Networks and the Re-organization of the European Economy». The author makes a conclusion that there is a necessity in the good analysis through industries of economy that would give a more deep description of the IPN. As this theme is rather new (the research has been started since 1990s by solely foreign economists), there are, unfortunately, only several articles about the integration of *production chains*. N. A. Mikhaylenko accentuated the attention on the concept of a chain and its role in the process of globalization of production, but did not provide a clear differentiation between the production chain and the production network. The advantage of this research is that N. A. Mikhaylenko was one of the first national scientists who analyzed the integrated production chain [2]. The modern international economy requires the consideration of not only vertical combinations of certain actions and operations, but also the combinations with horizontal distribution onto other regions and countries. It is the foundation of the international fragmentation of production.

First of all, the author wants to define the differences between the concepts of production chain and production network. A chain is the vertical sequence of actions leading to delivery, consumption, maintenance of a particular good and service, while a network combines both the vertical and the horizontal sequences of economic actions, including and encompassing several countries. The term «*value chain*» is mostly used to describe a separate part of activity, which at a certain period of time passes through a lot of operations, dynamic configurations, which finds its reflection in the term «*network*». A detailed description is shown in Figure 1 according to specific criteria.

Thus, the international production network is an aggregate of vertical and horizontal logical economic operations, the participants of which realize effective configurations as for the widening its scale to other countries in the process of supply, consumption, and servicing with the aim of profit maximization and lowering the production costs.

Probably, the most important criterion to characterize production networks is the governance style. According to this criterion, there are 3 types of networks:

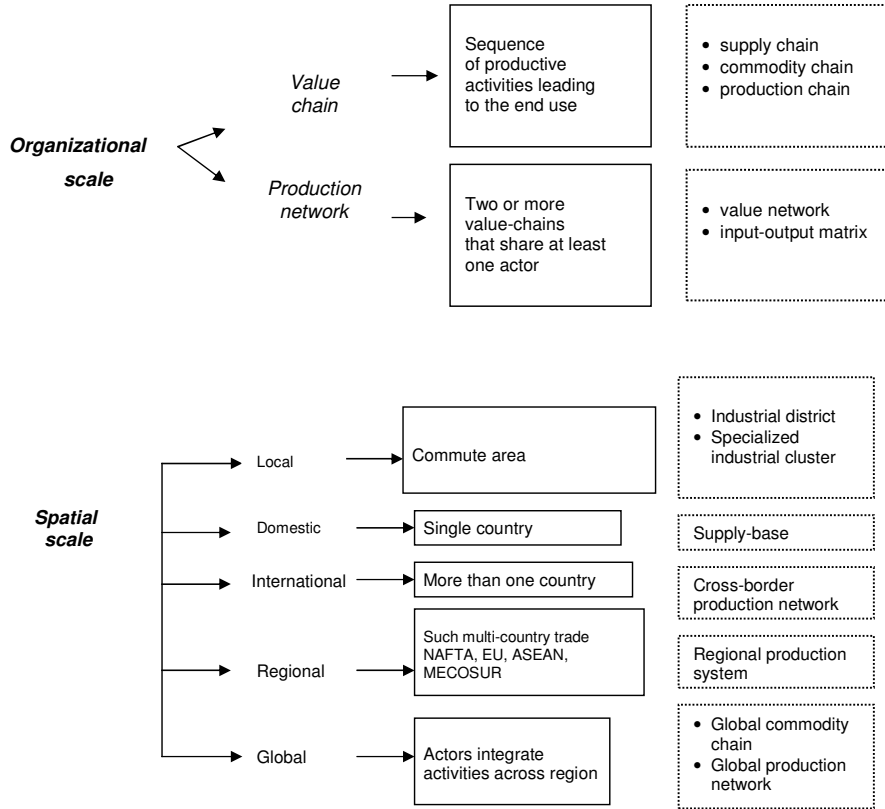
- captive or authority production network;
- relational production network;
- virtual production networks.

In captive or authority production networks production is carried out by a lead firm. For example, production networks guided the Japanese companies in-

clude suppliers which strongly depend on one or a few key buyer firms. The buyer-supplier relations are often created between the affiliations of an industrial group. Lead companies can invest in their suppliers and carry out financial control.

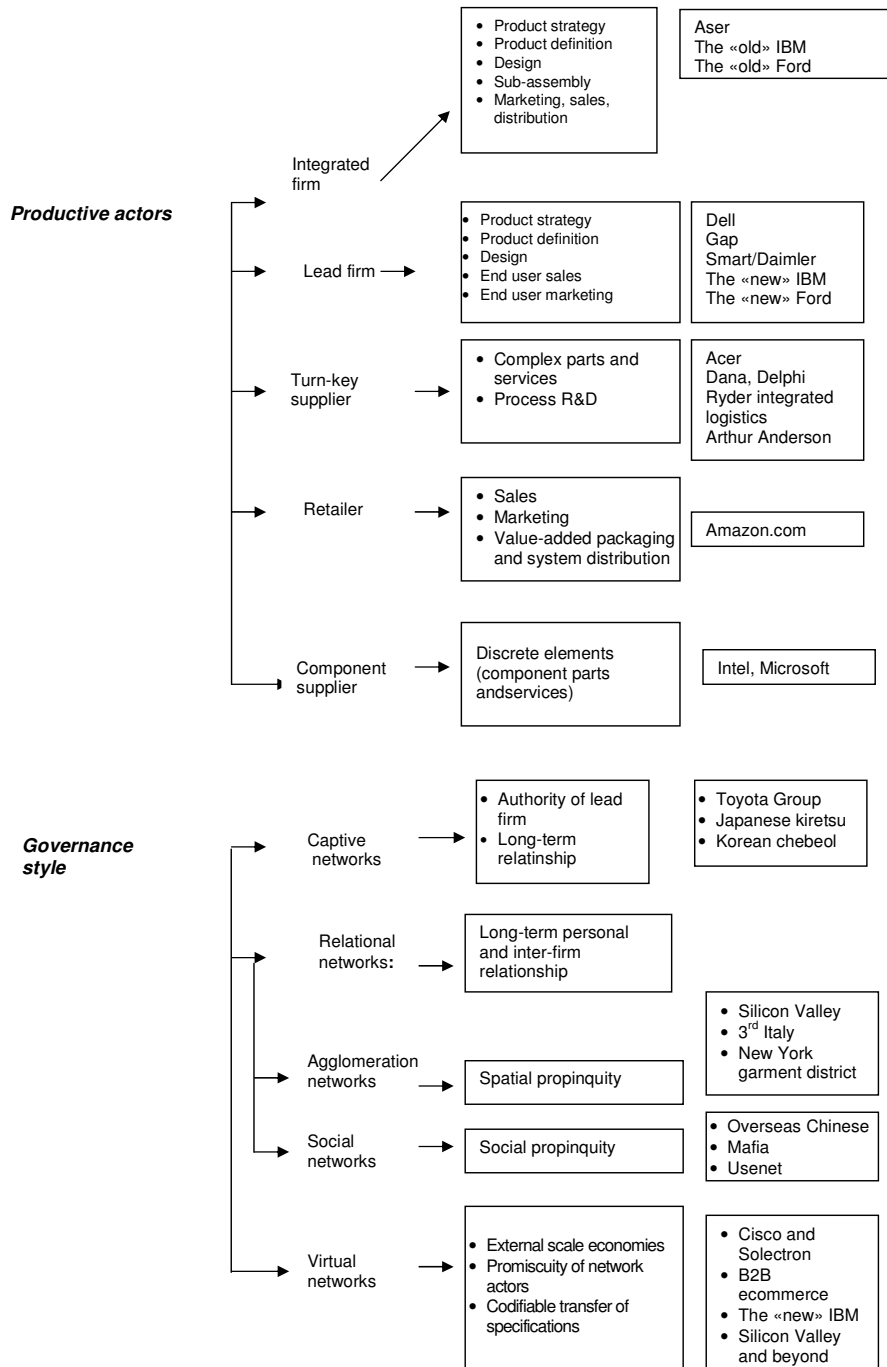
Figure 1.

Characteristics of a value chain/production network according to the criteria¹



¹ Constructed by the author based on [4].

Figure 1 (continued).



Relational production networks have a tendency to be created through the prism of social and spatial linkages and especially through long-term contract relations between companies. It is possible to determinate them as agglomeration networks, which are based on the spatial propinquity (neighbourhood), and social networks. The disadvantages of such networks are high entrance and geographical barriers.

Virtual networks are connected by highly innovative, but un-vertical lead companies with many multifunctional suppliers. Key suppliers carry out the wide range of services, including logistics, R&D, purchase of components, production, and sub-assembling, packing, distribution and after sale service, when lead companies carry out an innovative policy, marketing, and determine a market for new products.

The analysis of this model allows to select the potential disadvantages of virtual production networks. Suppliers can do a next step in the development of the own end-use products in a competition with their buyers². Figure 1 gives more detailed information about networks in accordance to the style of governance in it. Positive side of the virtual production networks determinates by the agility which represented two measures: geographical agility and output agility (Figure 2). These processes are carried out due to the relative loss of governance influence on a virtual network and confidence in the technical standards of nomenclature including a digital technique and B2B commerce for codification (sometimes automation) of the complex transfer of information along inter-firm connections.

2. Analysis of the Interconnection between Transnationalization and Its Influence on the International Production Networks

Informatization and globalization transform the demand, supply and pricing mechanisms, behaviour of consumers and producers, maximization of income, and primarily the production cycle. Thus, the creation of production chains becomes simpler, the creation of production networks – faster, the interconnections and interdependence between industries and production blocks tighten.

In the international production networks we must take into account the strategies of their expansion and the features of industries, which generally determine the process of their formation. In textile industry, there are two important

² In 1970-1980, the American producers of electronics used Japanese firms of electrical engineering for end production. As a result, such American firms as RCA lost control in definition of product and diminished the use of their brand names to the Japanese constructing and producing of products. Then, American producers of electronics lost their advantages.

factors to be considered: the differentiation of production location and vector to the specific markets under the influence of globalization. At the present, the textile industry is characterized by the presence of large corporations, such as Burlington in the USA, Toray in Japan, Coats in Great Britain and Marzotto Group in Italy. Growth of the regionalization for textile industry means transferring of skilled labour to the lead countries such as USA, Japan, Germany, and Italy. Low-paid work is carried out in Latin America, Asia, East Europe, and North America. Now there are three regions in which international production networks are distributed actively:

USA ↔ Mexico ↔ Caribbean;

Japan ↔ East ↔ South East Asia;

Western Europe ↔ East Europe ↔ North Africa.

The next production giant is the motor industry. The motor-building complex was the pioneer in the development of production networks. A lot of components and intermediate products are made by the independent firms in the different industries of economy. Figure 3 shows the three basic processes of the end-use motor assembling in accordance to their networks:

- production of bodies;
- production of components;
- production of engines and transmissions.

Figure 2.

Production Networks Performance: Geographic vs. Output Agility [2: 45]

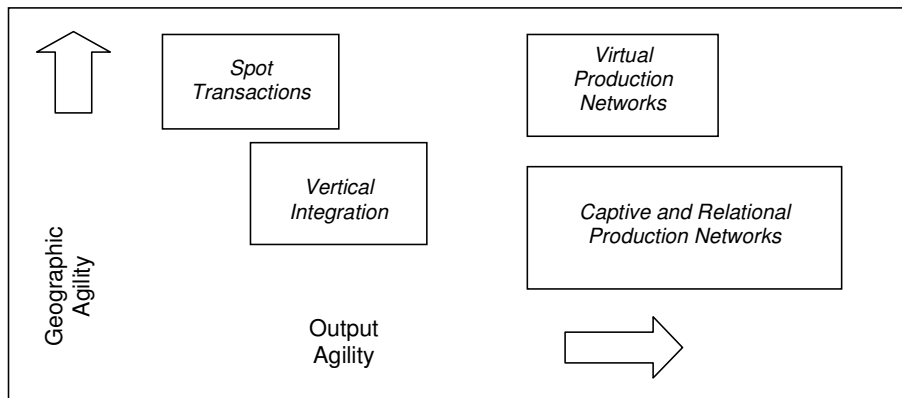
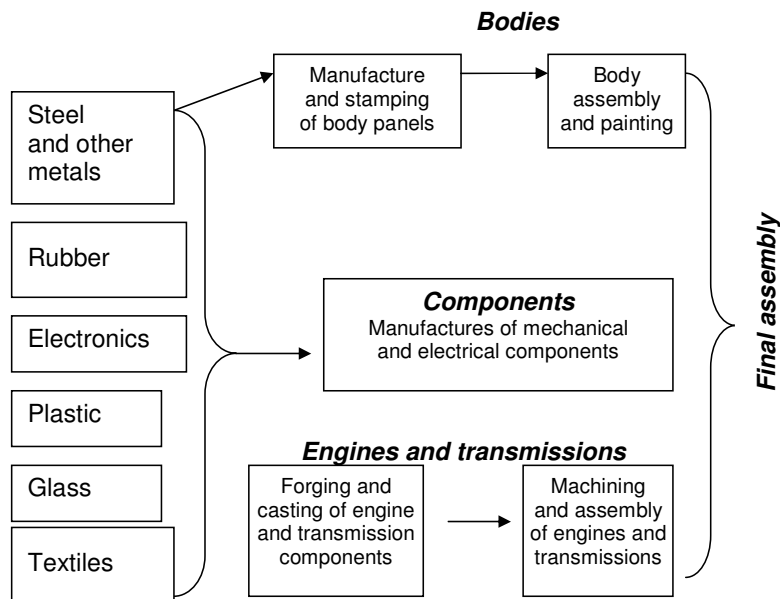


Figure 3.

An automobile production network [5: 356]



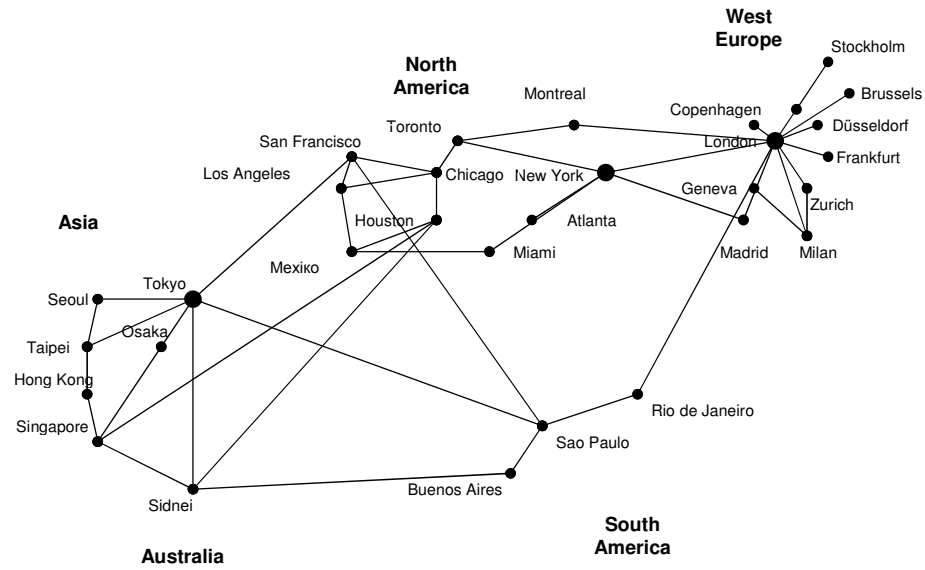
The evolution of production networks includes the following stages:

- internal technological chain;
- intersectoral production chains within the vertical integrated company, which are combined with horizontal integration and have the reflection in the international production networks;
- establishment of electronic platforms which allow to manage the technological flows of whole industry competitive firms.

Accordingly, such a nature of this industry enables to locate the production very advantageously, taking into account the last tendencies of globalization and integration of the world economy.

Figure 4.

Major corporate and regional headquarters in production networks³



On the global scale, there are only a few cities which can be used as corporate and regional headquarters of TNCs. Such *global cities* are described as *control points* of global economy. Such centres are in a simplified way illustrated in Figure 4. Tokyo, New York and London are considered as such cities. Transnationalisation of the economy and, in particular, production enables to select other key cities in three large economic regions (Western Europe, North America and Asia, and also Australia and Latin America). The subsequent integration of the European Union and faster growth of the East Asiatic economies definitely stimulate the requirement of the regional centres in these cities. The American corporations have been practicing such activity in the countries of «old Europe» in the realization of their regional operations for a long period of time. Analogical situation is with the Japanese and East Asiatic multinational companies. The basic variants of the production networks' distribution are shown in Figure 5.

³ Constructed by the author.

Figure 5.

Major ways of organizing the geography of TNC and production networks⁴

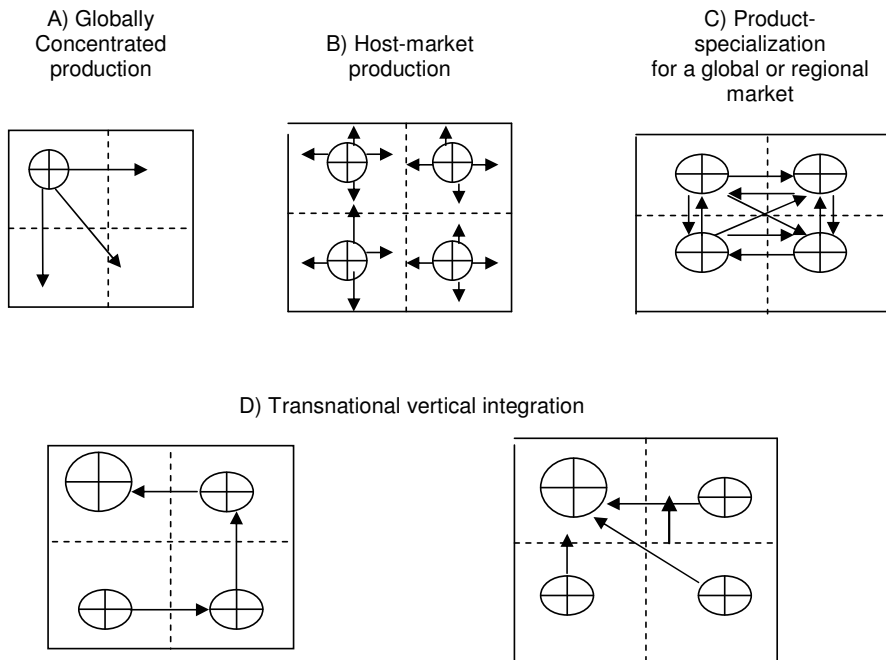


Figure 5 (A) represents the simplest case. All production is concentrated in the single geographical location (at least within a single country) and exports through the network of TNCs. It is a classic case for a lot of the Japanese companies until they moved towards the territorial distributed global production (in the conditions of formation of international production networks and in the fragmentation of production). According to Figure 1, these are the local or domestic production networks.

In Figure 5 (B), the production is located and oriented directly towards the specific national (host) markets, which is similar to the firm's host market initiating the creation of the production networks; these are called the international production networks.

Figure 5 (C) represents the example of production, which is now actively used in the EU and NAFTA. A large domestic market with the difference in factors of production between the members of the union is present. Such process is

⁴ Constructed by the author based on [5].

devoted to the saving and quick development of the regional market than national, as it was in a previous case (5A). These are regional production networks.

On Figure 5 (D), the possible variants of the development are shown during rationalization of the production process using the specialization and fragmentation of production. Materials and resources are located in different parts of the world and transported between the geographically (territorial) distributed production blocks form the integrated production chains, and transformed in production networks. Thus traditional connection between the production and the market is broken because the product of a company in one country is an intermediate product and raw material for another firm and already in another country. The integrated production chain comes to a more complex level – international production network.

Conclusions

The asymmetry of globalization brings companies to search for the ways of minimizing the negative results of the crossings between the disintegration and integration of economic processes. Representatives of the new trade theory⁵ offer the cluster model of management. As way of possible lines of development, it is possible to consider a network of monosectoral cities (not only as science-intensive locations) as central key elements in a production network. Such institutional units are the *global cities*, which initiate the formation of production blocks at fragmentation of the production. The author makes a conclusion that a production network can be considered as an aggregate of clusters, since agglomeration clusters (concentration of clusters, for example Silicon Valley) are one type of networks.

The origin and development of production integrated chains and at the same time international production networks is a result of influence of the modern tendencies of globalization. Informatization is the main factor of influencing which changes the demand and supply process on the world product markets. The appearance of global production chains generates the development of the new forms of cooperation between the objects of international economic relations, such as outsourcing, strategic contract relations, and international fragmentation of production. In motor-car industry and electricity, the management of the production chains that turn into production networks has a specific feature: the specialization and narrowing of the technological orientation of production due to outsourcing and international fragmentation of production.

Globalization and informatization of the economy, as well as specialization of firms through the prism of key suppliers, made the subsequent enlargement of

⁵ Krugman, Fujita, Venables, Puga.

vertical integrated corporations ineffective. At the present time, the basic tendency is the transfer from further enlargement of corporations to the network type of organization of production with the help of production blocks.

Bibliography

1. Гладій І. Й. Транснаціональна регіоналізація глобалізованого економічного простору: системно-синергетичний підхід // Журнал європейської економіки. – Том 3 (№1). – Березень 2004. – С. 79–95.
2. Михайленко Н. А. Інтеграція виробничого ланцюга – сучасна особливість структури світових товарних ринків // Економічні науки. – Вестник Запорозького національного університету. – С. 103–108.
3. Integrating Central and Eastern Europe in the European Trade and Production Network, Françoise Lemoine, Berkeley Roundtable on the International Economy (University of California, Berkeley) Year 1998 Paper BRIEWP107. – P. 50.
4. Tales from the 'Global' Economy: Cross National Production Networks and the Re-organization of the European Economy John Zysman, Eileen Doherty, Andrew Schwartz, June 1996. – P. 58.
5. Timothy J. Sturgeon. How do we define value chains and production networks? Massachusetts institute of technology. October 1, 2000. – P. 6–17.
6. Peter Dicken. Global shift. Reshaping the global economic map in the 21st century. – 2004. – P. 356.

The article was received on December 26, 2007.