

NATURE AND CHARACTERISTICS OF NETWORK MARKETS IN THE CONTEXT OF GLOBALIZATION

Inna Honcharuk

Abstract

The articles highlight the nature and value of network effects, their types and peculiarities and trends of competition in network markets. The author focuses on the dramatic changes occurring in the network market, which lead to the formation of a fundamentally new configuration of the entire market structure. The method of analysis and synthesis was used in order to investigate the nature of network markets. A method of combination of logical and historical was used for the analysis of principles of network effects. A method of system generalization allowed us to define the key trends of the network markets in the context of globalization. Determined that in the global information and innovation economy, it is necessary to form a new theoretical and methodological approach, concepts, models to determine the nature and characteristics of the operation of network markets.

Keywords: network effect, competition, economy, information and communication technologies, Internet monopoly network markets.

Introduction

Today, in view of transformation of economic systems, total globalization and competition of world markets, it's necessary to ensure theoretical and methodological rationale and a smooth transition to a new paradigm, a concept model of development that can be defined as an information-network economy with innovation and competitive development in focus, based on new knowledge, ICT, intellectualization and "networkisation" of business, active methods of competition and receiving various integrated, synergetic effects.

The modern economy is being transformed into a massive global market network, which configuration is undergoing significant modification as a result of technological and institutional change. The population is becoming even more dependent on communications networks. According to scientists, dependence on technological developments will only increase against a growing number of new technologies and services ("smart city" e-health, specialized mobile services, virtual banks, electronic money (bitcoins), etc.).

1. Nature and principles of network effects

The network effect is a phenomenon that foresees increase of customer network value as the number of its nodes grows. That means an increase in the importance of the object of consumption with the increased number of users and connections between them. For example, a consumer value of the mobile operator which has just entered a market, is close to zero because the network of its users is scarce.

At the same time, if the number of consumers increases eventually, that is, an individual user can have access on favorable terms to the vast majority of personal friends and potential business partners, he informally becomes indispensable. Cases of the network effect in today's world are more than enough - from the Internet development as a classic example to the not less classic formation of social networks and blogs. It being a burgeoning phenomenon together with a potential size of the market and an active development of the communication

sphere makes the network effect attractive from the perspective of its scientific study as well as practical application.

Basic principles of network effects:

- *The principle of critical mass* – the network effect works only when the network accumulates a certain number of users – a critical mass. Before it reaches this level, investments in the network effect can be quite high, depending on the set of users' strategy. Basically, the company is trying to attract large corporate clients with a view to involving a wide range of users in the network, or to cooperate with manufacturers of related services.

- *The principle of compatibility* – the transition to a new standard of communication should be carried out with a minimal effort for the user. A necessary requirement by entering the network is its being compatible with other networking standards so that a consumer might not have the "lost" feeling when switching from one network to another.

- *The principle of preferred network members* - users need to be more "tied" to the network via being offered more new and original services which are provided exclusively – from unique bonus programs to priority rights in order to get familiar with a novelty on the market.

- *The principle of strengthening relationships* – the network development and consolidation of the network effect are possible as long as a range of subscribers is continually expanded. The bigger a communication network is – the stronger is the consumer's dependence on it. Connections keep users within the network and ensure loyalty.

- *The employment principle* – the essence of the principle is to offer customers a wide range of services to maximize their network surfing time. This is what allows a company to take a leading position in the network market, because consumers, who spend a lot of time online, use all the new services and help attract new users.

- *The "quit-network" principle* - one of the negative characteristics of network effects is a complexity to quit it because it operates under the principle of "cheap entrance and expensive exit". Of course, one cannot retain a consumer using only rigorous measures, but the "exit challenge", i.e. switching to other standards, is also a deterrent factor. The loss of contacts and standard network capabilities also prevent users from switching to another network.

- *The principle of network significance* – a peculiar feature of network market is that life cycle of the network can be quite short. According to this feature, the company – owner of the network must continually develop its product range, to motivate and encourage clients, which can be exclusive items that develop network capabilities as well as souvenirs and accessories, through which users can identify one another off-line.

Without such measures, any network is doomed to decline, as consumers may suddenly leave it simply because they are bored. To date, social media are estimated at billions, but without maintaining customer loyalty, such investments are very risky. However, smart diversification can reduce risks at the cost of higher loyalty of network members.

The network market evolves from highly concentrated and monopolized to finally become a highly competitive, fragmented structure, in which price competition is getting increasingly important. At the same time, network competition takes new forms and there is quite a wide range of information and communication products. Actually, consumers can't embrace all the existing and ever-increasing range of services; therefore, they are getting more focused on other members of the same social network when choosing a product or service. Network competition is gradually being transformed from the technological and economic phenomenon into the social and cultural interaction having specific kinds of network effects.

2. Network markets in the context of globalization

The network market of a new format can be determined only by lower, rather than the upper limits of supply and demand. The law of supply and demand, as it appears in other markets, no longer exists in the network market. They become amorphous shapes, like circles on the water from the stones thrown into it. Many small players with a variety of original (source) "branches" have gradually transformed into big participants of all ICT space.

A striking example of the increased importance of network effects in the global market is the World Economic Forum (WEF) where this issue was addressed. This year's forum was held on 21-24 January at the Swiss resort of Davos and was called "new global environment." But in general, the discussions within the Forum concerned network capacity. Critics pointed out that the topic was not worthy of consideration because it wouldn't yield significant results, yet the fact that over 2,500 of the most influential people in the world took part in the Forum indicates that the issue of network markets has been gaining popularity and importance not only among scientists, but also among businessmen. This is confirmed by the words of one of the WEF members: "Ultimately, contacts mean contracts."

The World Economic Forum (World Economic Forum) published Networked Readiness Index of 2015 (Networked Readiness Index 2015), which characterizes the level of development of information and communication technologies (ICT) in the world and its impact on national competitiveness. The report "Global report on the development of Information Technologies-2015" (Global Information Technology Report 2015: ICTs for inclusive growth) presents data on ICT development in 143 countries of the world.

Networked Readiness Index is a composite indicator of ICT development, which has been produced by the World Economic Forum and INSEAD International Business School since 2002 as part of a special series of annual reports on the development of the information society in the world. In 2013, the project was joined by Graduate School of Management named after Samuel Curtis Johnson at Cornell University (Samuel Curtis Johnson Graduate School of Management).

Currently, the above research is considered the most comprehensive and authoritative source of international assessment of the ICT impact on competitiveness of states and well-being of their citizens. It is used as a comparative analysis to build ratings, reflecting the level of the authors ground their research on the provision, according to which the ICT development and economic well-being are closely linked, since at present ICT plays a leading role in the development of innovations, productivity and competitiveness growth. Additionally, it diversifies the economy and stimulates business activity, thus contributing to higher living standards. This relationship was first mentioned at the World Economic Forum in 2001 and described in the first Global Report on Information Technologies. It is assumed that the index should be used by States to analyze their problematic issues in their policies and monitoring their progress in the implementation of new technologies.

The index measures the level of ICT development by 53 parameters, grouped into three main groups:

- Conditions available for ICTs.
- The willingness of citizens, business circles and government agencies to use ICT.
- The level of ICT use in public, commercial and state sectors.

The design of the index is made on the basis of statistics of international organizations, as well as results of the annual comprehensive survey of opinion leaders, conducted by the World Economic Forum together with its own network of partner institutes (research and business organizations) in the countries that have become objects of study. The final report reduced performance into a single network readiness index.

There are detailed profiles of the countries in the report, the description of each country including: general picture of economic development in part of penetration and use of IKT, articles of scientists and experts, as well as ratings and a large amount of statistical tables with all indexes that were used for the Index calculation.

The report for 2015 presents data by the Index of network readiness in 143 countries of the world. Singapore ranks first in the IKT development rating. The other top ten most developed countries in the list are: Finland, Sweden, the Netherlands, Norway, Switzerland, the United States, Great Britain, Luxemburg, and Japan.

Leading states with a transitional economy, in particular the BRIC countries, despite the improvement of some indexes, continue to fall behind the most developed economies: China occupies 62 place, Brazil - 84, India - 89. These states are facing substantial challenges that hamper a more active introduction and use of IKT and continue to experience difficulty with actualization of their potential. Insufficient competences, undeveloped institutes, other weak points in political and administrative spheres, including those related to the business-climate, are basic faults which restrain the development of entrepreneurship and innovations. On the other hand, a number of countries that worked out a strategic vision of the development of IKT potential reveal a more positive dynamics, their positions in the rating for the last few years have climbed up considerably. Among them, in particular, are the United Arab Emirates (ranks 23), Latvia (33), Mauritius (45), Macedonia (47), Armenia (58) and Georgia (60).

This year Ukraine has improved its position by ten points as compared to the previous year, and occupies 71 place in the rating, between Trinidad and Tobago and Kuwait. The strengths of Ukraine, in the opinion of experts, include a low cost of access to the IKT infrastructure and literacy of the adult population, whereas market underdevelopment, inefficiency of the legal system and weak receptivity of companies and state structures to the introduction of information technologies stand in the way of the country's higher rating.

Conclusions

New phenomena on the markets of the future, which are burgeoning in our eyes, sets new tasks before researchers. A standard paradigm of branch markets "competition-oligopoly-monopoly" is becoming obsolete, as it is unable to reflect the realities of network interactions. The fields of network transactions demonstrate a fundamentally new branch structure. A concentric market possesses its key features, behavioral models of participants and results, whose adequate theoretical description waited for its turn in the economic science.

References

1. Acemoglu, D., A. (2013) "The Network Origins of Large Economic Downturns," NBER Working Paper, No. 19.
2. Choudary, S. P. (2012) "Reverse network effects: Why scale may be the biggest threat facing today's social networks", The Next Web, [Online], 22 Dec., Available at: <http://thenextweb.com/insider/2012/12/22/reverse-network-effects-why-scale-may-be-the-biggest-threat-facing-todays-socialnetworks/?fromcat=all>.
3. De Benedictis L, S. Nenci, G. Santoni, L. Tajoli, C. Vicarelli (2013), "Network Analysis of World Trade Using the BACI-CEPII Database", CEPII Working Paper, No.24.
4. Hidaglo, C. (2014), "A Tale of Two Literatures: Social Networks and Network Science: An Interdisciplinary Review", unpublished draft.
5. Ihnatyuk, A. I., V.V. Ihnatyuk (2012) "Modeli merezh evyhefektiv ta ih praktychne zastosovannya, *Bulletin Chernivetskoho torhovelno-ekonomichnoho instytutu. Ekonomichni nauky*, Vol. And (45),p. 405-418.

6. Kastels M. (1999) “Stanovlenye obschestva setevih stryktyr”, *Postyndernaynaya Novaya volna na Zapade. Antolohyya*. p. 494.
7. Katz, M. L. (1985), “Network Externalities, Competition, and Compatibility” *The American Economic Review* [Online], Vol. 75, № 3., P. 424-440., Available at: <http://www.jstor.org/stable/1814809>.
8. Mulgan G.J. (1991) “Communications and Control: Networks and New Economies of Communication”, N.Y,p. 19.
9. Newman M. (2010), “Networks: an Introduction”, *Oxford University Press*, p. 805.
10. Rozanova N. (2016) “Network Competition as Determinant of Contemporary Markets Configuration”. *Mirovaya ekonomika i mezhdunarodnye otnosheniya*, vol. 60, № 4, pp. 13-20
11. Warf B. (2013) “Geographies of Global Telephony in the Age of the Internet”. *Geoforum*, vol. 45, pp. 219-229.
12. Wasserman S. (1994) “Social Network Analysis: Methods and Applications”, *Cambridge*, p. 4.
13. World Economic Forum (2015), *Global Competitiveness Report*. [Online], Available at: <http://reports.weforum.org/global-competitiveness-report-2015-2016/>
14. Blasco-Arcas L., Hernandez-Ortega B., Jimenez-Martinez J. (2013) “Adopting Television as a New Channel for E-commerce. The Influence of Interactive Technologies on Consumer Behavior”. *Electronic Commerce Research*, vol. 13, pp. 457-475.

Information about author:

Inna Honcharuk – Graduate student, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine. E-mail: inna.goncharuk@metinvestholding.com