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FORMATION OF THE INFRASTRUCTURE OF THE GLOBAL INNOVATION MARKET

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Abstract. *Emergence of the global technology market is under the influence of transnationalization in the context of informatization of the knowledge economy in parallel with the formation of the global market for intellectual property products, which together with the institute of private property will determine the conditions for the generation and implementation of new ideas. The role of the patent system in the international technological exchange in the global harmonization of both direct and indirect regulation of innovation is increasing. The prospects for the global technology market will determine the processes of digitization and automation of the standardized industries and services based on the artificial intelligence, energy efficiency using renewable sources, greening and socialization, especially in pharmacy and medicine. The most common is the business model when demand finds a suitable offer among users rather than commercial agents through an online platform. Since one of the main problems is lack of complete trust in online operations, platforms are working to improve the financial and personal security of their users and the virtual identification of customers.*

Keywords: *sharing economy, business model, innovative development, TNC, startup.*

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Introduction

Economic growth as a result of technological advances is case of increasing population is able to meet its ever-growing needs in the conditions of the depletion of traditional resources. The beginning of the 21st century was marked by the fundamental transformation processes and the formation of a post-neoliberal model of global economic development, when competitiveness and progress are increasingly determined by digitization, intellectualization, creativity, energy efficiency and environmental responsibility, social responsibility and security. Assessment of these trends becomes the scientific basis for the development of prognostic scenarios for the development of economic systems at different levels.

Technological innovation is a key imperative for economic and social progress in today's global economy, substantiated by economic theory and validated by the practices of the leading countries.

Economic transformations, caused by scientific and technological progress and spread primarily by transnational corporations, led to the formation of a global economy, an appropriate global research, production, logistics and financial infrastructure on the basis of the abrupt increase of the scale, quality, popularity and accessibility of information and communication technologies in all spheres of

international economic relations with the unification of regulatory rules and regulations at the beginning of the 21st century. The global economy is beginning to be divided not into separate national and regional economic systems but into interconnected sectors, clusters and networks, structuring the world into a multi-level, complex, contradictory system with global imbalances and symmetries.

The purpose of the study is to study key principles and conditions, to identify mechanisms and models of the relationship between innovation and technological factors and global economic progress.

Literature Review

More and more countries are becoming dependent on emerging technology leaders as they couldn't form a competitive information technology sector as part of the national economy. Some scholars (Beck, 2018) call this status of affairs as information and technological neo-colonialism.

The main instrument of colonization is the intellectual property right by which countries with monopoly rights to technical inventions protect their position from the rest of the world (Beckert, J., & Dewey, M. (Eds.) (2017)). The areas most affected by globalization processes are the financial system and media.

When production links go beyond national boundaries, transnational associations emerge, governed by specific supranational regulatory and management bodies, which have, as a result, become the main engines of globalization in its current sense (Coulibaly, S.K., Erbao, C., & Mekongcho, T.M. (2018)).

When more than half of the world's industrial production and international trade flows came under the control of TNCs, a new class of TNCs, such as multicultural global corporations, emerged (Drahos, P., & Braithwaite, J. (2017)). They are interested in the enclave economic development of most countries in the world, which exacerbates regressive structural shifts in the national economy of these countries. TNCs are only created by enterprises that are competitive by international standards, the number of them is small in most countries of the world.

In addition, new supranational structures, such as the IMF, the WB, and others, are being created to regulate new global social processes.

Given the globalization of economic activity, in order to achieve competitiveness in the global market, the national production begins to obey not only internal rules and regulations, but also international, unified ones.

On the one hand, national manufacturers have no other path of development: if products and ways of doing business do not meet generally accepted international standards, localization within national boundaries is not successful with the advent of TNC markets offering the best product or service (Feiock, R.C., Moon, M.J., & Park, H.J. (2017)). Thus, intra-national production processes become a part of a single planetary production and logistics chain. The global economy does not begin to divide itself into separate national economic systems, but integrates them into separate sectors, regions and clusters, qualitatively re-structuring the world into a more complex networked economic system.

On the other hand, firms producing and selling their products on a global scale are forced to develop local connections, as well as to obtain the necessary resource

for their global symbols from local cultures, for their vitality, brightness, market attractiveness (Gözüör, G., & Can, M. (2017)).

In addition, acquiring specific features inherent in them, based on both starting conditions and specific intentions, integration associations are transformed into a means of comparing and co-existing interests at the global level, and the institutional and legal links between them create the preconditions for forming a new balance of power, a new global, system of international economic relations (Griffin, K. (2018)).

Modern information and communication technologies allow international clusters to expand their territory, number of members, and role in the global economy, becoming intellectual centers of attraction for human and creative capital (Jamali, D., Karam, C., & Blowfield, M. (2017)).

In this case, institutional investors become a link for states, corporations and international organizations, enabling them to reconcile their goals and conduct economic cooperation for mutual benefit. Active marketing strategies that have been tailored to the economic, political, social and cultural situation have created new influential actors in economic globalization - city leaders.

The largest metropolitan areas have transcended the cultural and social boundaries of their states, turning into the places of attraction for innovative individuals seeking to get comfortable infrastructure and become a part of the "ideological field" through interaction with an increasing number of highly skilled city dwellers (Li, L., Li, L., Liu, L., Long, H., de Jong, W., & Youn, Y.C. (2017)). In addition, social networks, the Internet, and virtualization have reduced the barrier of entry into the structure of economic globalization, so in addition to large institutions such as corporations and states, individuals have acquired the status of one of the most influential actors in international economic relations. Virtualization allows practically everyone to spread their ideas around the globalized world and gain so many adherents to influence the decisions of states, TNCs and international organizations. In our view, the next step in the evolution of the structure of economic globalization actors should be the empowerment of individuals to create and adopt binding international law standards at the level with other institutional actors.

In general, an analysis of the existing paradigms of economic globalization demonstrates that there is no single concept among scientists: some scholars argue that only economic interests and contradictions are the basis of globalization and future global conflicts, while others emphasize the differences of cultures and the division of the world into competing civilizations (Rodrik, 2018). There are optimistic predictions and scenarios for the development of a globalized world as all nations, cultures and economies thrive, share ideas and work together to solve global problems for humanity.

Pessimists insist on the need to halt the globalization process because it will result in the exploitation of a small number of monopoly countries of the rest of the world (Scheuerman, 2017).

Most theories are considered globalization as an objective process that must be taken into account by governments and society when planning their own development (Sheth, 2017).

Contemporary contradictory trends in the global economy shape new processes of fragmentation (formation and strengthening of blocs and alliances of "nation states" in the form of complex hierarchical systems against the background of increasing number of "actors" on the world stage with a further change in the balance of their forces) (Steger, 2017) and globalization (a process of restratification of the world based on new principles that makes it possible to create a new hierarchy on a global scale) (Stiglitz, 2017). Fragmentation and globalization form the newest phenomenon of independence.

Independence demonstrates the latest paradox (Tsukada, 2017), when none of the states is able to take responsibility for ensuring the public goods necessary for orderly functioning and maintaining stability of the global economy and for exercising effective control over the internationally-mandated institutions forced to maintain the openness of the trading system, to save the stability of the monetary system, and ensure the proper functioning of the world financial markets.

However, despite the increasing number of scientific publications on the impact of innovation on the development of economic systems, further research is needed to systematically understand their new role in global economic progress, which requires scientific exploration in the categorical, classification and statistical fields. Important in theoretical and practical terms is a comprehensive study of the conditions, factors and features of global intellectualization. It led to the choice of the topic of the paper, logic.

Methods

The working hypotheses of the research are based on the combination of dialectical principles of scientific cognition with general scientific and special methods of research according to the logic of the paper: induction and deduction; abstraction, analysis and synthesis; statistical quantitative and qualitative comparisons and analogies; historical and logical; scenario forecasting (in the construction and justification of forecasting models of global economic progress); expert assessments; economic and mathematical (in the process of evaluating the business models of the economy).

Results

The most comprehensive information on innovation in almost all countries is provided by the Global Innovation Index, which is compiled annually by the World Intellectual Property Organization. An analysis of recent reports allows us to draw the following conclusions. First, there is a clear correlation between the level of development of a country and its level of innovation. The key advices provided by international organizations for promoting development in developing countries are often the need to stimulate and develop innovative sectors of the economy. However, in our view, comparing developed and developing countries at some specific point in time and claiming that the latter are lagging behind due to a lack of innovation input to total GDP is not correct. In fact, the leading innovator countries have undergone a long process of establishing, promoting, protecting and commercializing their own innovative developments. They entered into every new technological venture with

significant financial resources, which allowed them to significantly break away from competitors and to build up their capital. In addition, high-income countries had the opportunity to invest in development of their own human capital. The third world countries are not able to accumulate the necessary investment to develop the full range of innovation, so they always have a choice: what innovative areas to support with state aid to stimulate their development.

However, countries from different groups, such as high- and middle-income countries, often have comparative innovation inputs, but weaker countries lag behind in terms of creativity, intellectual and technological gains. This situation testifies to the importance not only of quantitative indicators, but also of the qualitative component of innovation activity - the quality of national university education, not simply the total number of higher education institutions in the country and the number of persons who have received higher education, the level of internationalization of national inventions, not the total number patents and registered utility models issued, the number of international references to national scientists, not the total number of scientific publications. At the same time, the best results in innovation activity are achieved by countries which not only create the conditions for the development of human capital and form the necessary institutions, but also have effective mechanisms for commercialization of innovations.

In addition, it should be noted that there is a time lag between improving innovative inputs and further benefiting from an innovative sector becoming dynamically to be developed. For example, investment in human capital involves the development of specialized early childhood programs, continuing with school and university programs, and can cover all stages of human development. The return from such investments will only be possible after the next generation has entered into an active economic life (at least twenty years). Investments in infrastructure and institutions produce a time lag of about from two to five years. Probably, only the conditions of doing business can directly and quickly influence the innovation and business activity in the country. Thus, countries started investing in human capital, institutions, infrastructure at least at the end of the XXth century are now benefiting from higher innovation outputs and can be credited to leading innovator countries.

A new idea, a scientific proposal appearing on the market in the form of an intellectual property object, is not always clear to businessmen, investors, manufacturers and does not give a full guarantee of the possibility of its practical implementation and profit from its implementation. It is necessary a link between science and manufacturers, which is able to transform scientific ideas into a real innovation project, in order to be able to create ready-made innovative products, new goods and services. Information about the innovation in economic activity is recorded in the form of a special certificate or patent, which secures the author of the idea's ownership on the idea. Innovation as a product arises at this moment. Innovation as a product emerges as the ownership of a new idea. Therefore, innovation as a product must be unique, with virtually no analogues, because according to the definition, a patent or certificate marks the difference of this new idea from others already expressed by someone. The owner of the ownership of the innovative idea is a

monopolist in the innovation market, since no one else has the right to sell the idea as a product.

The main condition and component of effective innovation activity is a competitive infrastructure of the innovation market, its qualitative development level determines the duration of the innovation process, forms a priority portfolio of innovations, contributes to achieving the desired results of innovation activities.

Among the elements of the infrastructure of the innovation market are: trade networks, telecommunications networks, techno poles, techno parks, business incubators, innovation and technology centers, financial structures, consulting firms. The main task of the infrastructure of the innovation market is to ensure interaction and dissemination of information between the subjects of innovation activity, to facilitate the establishment of effective and mutually beneficial links between different institutional institutes.

As a system the innovation market includes: information, instrumental and financial support of operations, therefore, the appropriate specialized institutions, organizations and institutions operates to execute the above tasks in the innovation market, each of them performs the respective functions. In this sense, innovation infrastructure is a set of political, economic, legal, managerial, financial, information, scientific and other institutions of the innovation market that create the conditions for effective implementation of innovation activities.

An effective mechanism for the functioning of the innovation market infrastructure must meet such requirements as: high scientific and technical potential of the subjects of the innovation market; full integration of the infrastructure component of the innovation market with financial and credit support; availability of a developed information support system; high flexibility and adaptability; versatility, allowing to solve the problem of innovation implementation in any field of production or service sector of the economy; professionalism based on quality customer service - subjects of innovative activity; complete innovation market infrastructure with the purpose to achieve timely and effective results of innovation activities; formation of mechanisms of accumulation innovative experience. The most widespread activities of various support structures of innovative entrepreneurship are presented in Fig. 1.

It should be noted that techno parks previously occupied a special place among the objects of the innovation market infrastructure, ensuring a close territorial rapprochement between the necessary industrial research material base and the human component of the country's scientific potential. Techno park brings together scientists, industrialists and capital at one geographical point, which allows to intensify the innovation process and make the development and implementation of innovative products and processes more efficient. A successful techno park makes a complex of such elements as the sufficient level of funding; access to qualified business, advisory and management services; availability of technical support companies; participation in the work of a techno park of highly qualified specialists who cooperate on a permanent basis; an atmosphere of trust and invention.

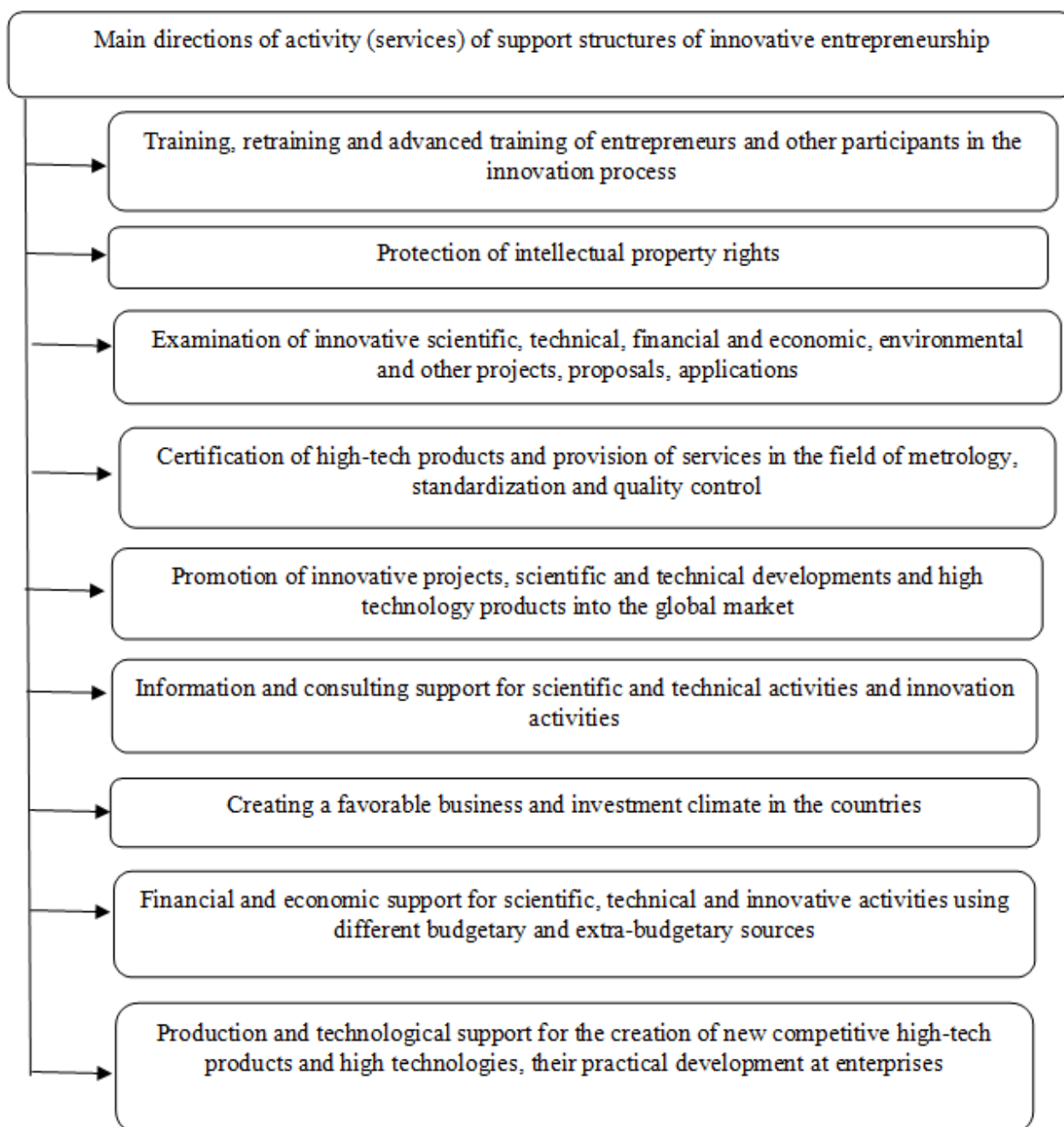


Figure 1. Main directions of structures activity supporting innovative entrepreneurship
(author's development)

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The factor of physical proximity loses its weight and importance in the context of the globalization of markets and rapid development of information and communication technologies (ICT). It is not necessary at this time to physically be at the epicenter of the world information technologies in order to create an innovative product or a successful startup. All the necessary information can be found on the network, to present your project to potential investors there. To get financing and then to choose a convenient place for further development. Young entrepreneurs from developing countries most often choose this way. Entrepreneurs pay more attention to the comfort and convenience of their home than to proximity to investors or other innovators in the context of global information networks. Therefore, techno parks are beginning to lose their advantages in organizing innovative activities. Their future depends on their ability to create a unique atmosphere of innovation and to provide effective personal communication between innovators, investors and service personnel.

The technological elements of the state's innovation system are also techno poles. Their structure and functions are similar to techno parks, but they are differed mainly due to they include a small settlement. Organizationally, a network of structural entities of the techno polis-type is a set of three basic structural components: a scientific core consisting of universities, research and scientific-technical organizations; industrial zone, which implies the creation and development of industrial potential; residential area (residential buildings and objects of socio-cultural purpose). This structure of the techno polis is a manifestation of the highest level of integration of science and urbanization. Therefore, techno poles are more competitive in today's ICT domination, as they provide an opportunity to combine creative scientific work and a comfortable permanent residence, thereby creating a unique creative atmosphere.

Significant effectiveness in creating a favorable financial, organizational, scientific and industrial environment is demonstrated by such elements of infrastructure as incubators. Their main purpose is to support young entrepreneurs starting their businesses in high-tech, and therefore risky industries, consulting services, project expertise, assistance in attracting public funding, and providing administrative services.

As a rule, innovation activity is not distributed evenly across the territory of the state, but concentrated in clusters that are tied to one or more neighboring cities, and the locally concentrated innovation hubs becomes an engine of innovation activity bringing the entire national economy to higher levels of innovation development. Contemporary there is not commonly accepted definition and criteria for an innovation cluster, as well as a clear list of their ranking. In addition, the geographical boundaries of innovation clusters generally do not correspond to the formal territorial division of the country, according to it governments collect statistical information. The study of the functioning of innovation clusters at the subnational and international levels has become relevant because, combining talents, know-how, research laboratories and production capabilities, often going beyond national economies, forming global innovation centers which begin to affect all local economy.

Modern ICTs allow humanity to reach a new level of interaction. You may be a small business owner, but you are able to reap the benefits by interacting with other individuals through a global network. Previously it was available only to large corporations. Currently, everyone is able to bring together an unlimited number of partners and potential clients with an interesting and promising idea. It requires a desire and a certain level of ICT skills that anyone can gain from free online courses. Most often, the competitive strategy of small companies is the rapid implementation of the idea and the rapid entry into the market with an innovative product or service, which creates some competitive advantage over large companies, which make a long and bureaucratic decision-making process.

In general, 3D printing, efficient use of sustainable production resources and robotics are powerful drivers of employment growth in the field of architecture and engineering, experiencing an ever-growing need for skilled professionals to create and manage innovative and automated production systems. Manufacturing is expected will turn into a highly scientific process where highly qualified engineers will implement projects aimed at making the internet of things to reality.

Cash flow automation and smart inventory using sensors and other devices of the internet of things are factors in reducing demand for traditional jobs in trading sphere. On the other hand, employment growth in the sector may be driven by the use of big data analytics to optimize and personalize sales.

The largest decline in employment is expected among office and administrative workers through the mobile Internet, cloud technologies, big data analysts, the internet of things. The relatively small impact on employment is expected from the two most publicized results of the technological revolution. Yes, artificial intelligence and machines able to learn on their own will lead to a decrease in employment in such areas as training, law, business, finance.

Therefore, the effect of job creation in the context of the Fourth Industrial Revolution is expected to be disproportionately smaller than the number of laid-off low-skilled workers. In addition, even highly-skilled workers will need constant training and new knowledge.

For this reason, the entry of the labor market into a new era of technological fluctuations with increasing wage inequality is forecasted. In addition, there is a growing demand for specific new professions that emerge during introduction of new technologies into the economic life, such as: data analysts who need to generate new ideas for business, using growing information flows; specialized sales representatives, as practitioners of virtually every industry will need to become proficient in commercializing their own products and promoting their offerings to business, government customers, consumers, explaining to them innovative product specifications or seeking new customers with who the company is not yet familiar; human resources development specialists; engineers who will work with new materials, biochemicals, nanomaterials; robotics; specialists in work with state and regulatory bodies; experts in geospatial information systems; industrial designers; top executives who will successfully manage the company in the turbulence and destruction of traditional business schemes.

In the light of emerging trends in the labor market, global corporate management is increasingly focusing on the development and training of new and existing workforce skills. As a consequence, the number of public-private partnership programs in the field of education, training and retraining of skilled personnel is growing significantly. In this way, corporations meet both their own needs and help to solve social problems. Therefore, the vision and management of the human resources of corporations undergoes significant changes, namely:

- Human resource development: business leaders take an active stance on adapting to the new situation in the job market, highlighting innovative tools of talent management.
- Using accessible analytics: companies need to build a new approach to workforce planning and talent management based on better data forecasting and planning.
- Talent diversity as a priority: as companies will face a shortage of workforce in 2020, it is time to make dramatic changes to the search for talent when the barriers on gender, age, and ethnicity should be overcome.
- Use of flexible working mechanisms and social networks. Contemporary, work is what people do, not where they work. This is why innovative forms of associations such as online freelancer unions are emerging and updated labor market regulation rules are being introduced to complement new models of workforce organization.
- Cross-sectoral and public-private collaboration: given the complexity of the challenges facing global corporate management, it is necessary for business to understand that talent support has turned from a simply nice bonus into a necessary component of a corporate strategy.

Work is assumed will continue to have a comparative advantage in social skills and creativity. Governments' development strategies should focus on improving these skills to complement and not compete with computer technology. In addition, the leading trend is the transition to the dominance of flexible working hours. It is one of the biggest drivers of business model transformation in many industries. Coworking, remote work, virtual teams, freelancing are becoming increasingly popular, allowing them to overcome the physical boundaries of the office or even the factory and to rethink the boundaries between their work and personal lives.

Scientists use different methods of cluster identification, depending on the characteristics of available statistics and the hypotheses that cause clustering. These methods range from simple visual isolation to the use of various types of technical algorithms.

For example, the DBSCAN algorithm requires two input parameters: the clustering radius and the minimum number of data points in this circle to be recognized by the cluster. The choice of these input parameters critically affects the shape and size of the identified clusters. For example, the DBSCAN algorithm identified 162 clusters in 25 countries according to the input parameters (13 kilometers (radius) and 2000 (minimum number of patent applications) (WIPO, 2017). The size of the clusters was identified by the number of inventors submitted to the System of inventors from a specific geographical region.

Fig. 2 demonstrates the locations of the world's largest 100 clusters.

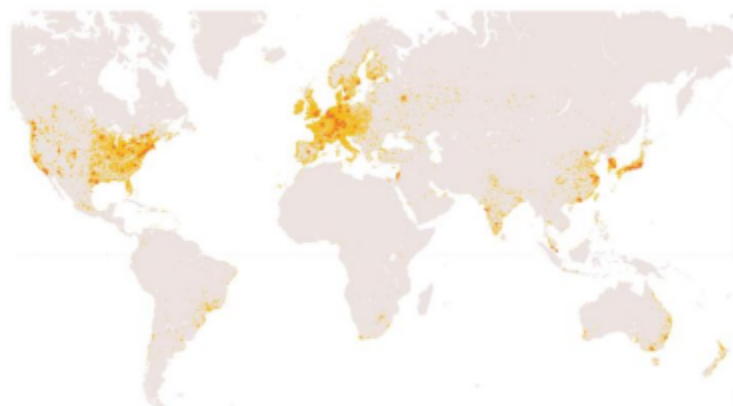


Figure 2. Geographical location of the largest innovation clusters
(based on <http://www.wipo.int/ipstats/en/>)

The location of the clusters is very uneven. For example, seven countries have four or more clusters: United States (31), Germany (12), Japan (8), China (7), France (5), Canada (4) and South Korea (4). There are from one to three clusters in another sixteen countries. India (three clusters), Malaysia and the Russian Federation (1 cluster) were highlighted among the middle-income countries, except China. The hundreds of largest clusters do not include associations from Latin America and the Caribbean, sub-Saharan Africa, North Africa and Western Asia.

The distribution of clusters across countries is also uneven. Notably, less than half of the 50 states have clusters in the US, and three or more clusters are located in the states California, New York, and Texas. Finally, the cluster around Basel crosses three borders at once.

Detailed characteristics of each cluster that allows you to draw the following conclusions:

Although the largest patent applicant for the most clusters is a commercial company, for some of them it is a university, such as the Massachusetts Institute of Technology for the Boston-Cambridge Cluster. Several commercial companies are leading applicants for multiple clusters. For example, Ericsson stands out as the largest applicant in five different clusters. Siemens and Intel are leading applicants in four different clusters each.

There are pronounced differences in the number of applications submitted by the leading applicants in each cluster. For many clusters this proportion is below 10%, indicating a high level of diversity of applicants. This proportion is higher for other clusters, which indicates a higher concentration of applicants in the cluster.

Clusters are also significantly different in their technological orientation. For example, the Shenzhen-Hong Kong (China) cluster, which is ranked the 2nd, focuses on digital communications technologies, accounting for about 41% of patent applications. On the other hand, the Tokyo-Yokohama cluster is much more diverse, with only 6.3% of applications submitted for its main technological area - electrical engineering, equipment and energy saving. The most popular technological areas are medical equipment, which predominates in 17 clusters, digital communication

(16 clusters), pharmaceuticals (15 clusters), computer technologies (12 clusters). In total, 18 different technologies are dominated in more than one cluster.

The role of universities also varies among different clusters. In some clusters, such as Baltimore, Daejeon, Grenoble, Kuala Lumpur, Singapore, the proportion of universities in applications exceeds 30%. Inventive activity in other clusters is largely concentrated in commercial companies, with academic institutions submitting a small number of applications. Interestingly, universities play a relatively important role in many clusters specializing in medical technology or pharmacy.

Clusters actively interact not only within their boundaries, but also with each other. The distance and size of the cluster in many cases affects the choice of partners. For example, Tokyo-Yokohama is a leading partner for all other clusters in Japan, and Seoul is the most active partner cluster for all other clusters in South Korea. Today the San Jose-San Francisco Cluster is the most active cluster supporting relationships with 24 other clusters, including six clusters located outside the United States.

The process of cluster formation is still poorly understood, as there is no universal recipe for creating an effective cluster. Even ranking and sorting them by different attributes does not allow us to single out many common attributes of successful clusters. Some of the clusters are formed from the bottom, they grow out from a group of active researchers, the rest are targeted at the state level. The core of the innovation cluster is both universities and relevant academic infrastructure, as well as commercial companies. The common to most successful clusters is the presence of a powerful center which often generates the largest number of patents and brings together other players. From the side of the state it is important to give the cluster members wide freedom to choose the sphere of activity, partners, ways of self-organization.

Virtualization of economy as a consequence of dynamic and total process of penetration of information and communication technologies in all spheres of life leads to the emergence of new forms of innovative entrepreneurship. The fierce competition between manufacturers of mass-produced goods is forced them to seek new marketing strategies. Therefore, more and more consumers are beginning to consider themselves as a partner whose opinions on the quality and other properties of the product are most important in their future activities. It contributes to the birth of a new market relations entity, which can be called a prosumer, this is a buyer who satisfies his or her own needs.

The most striking example of new forms of innovative entrepreneurship in recent years have been companies which can be integrated into a common economic system called the Sharing economy. Sharing economy companies provide services related to Business to Business, Person to Person, Business to Person, Person to Business, Machine to Machine. The main distinguishing feature of new companies created within the Sharing economy is the degradation of the role of intermediaries. The first startups with the help of new technologies offered services and products based on Person to Person. Thus, virtualization and ICT again lead to the disappearance of another key element of the market system - an intermediary. With the rise of information and technological literacy of the average consumer, the need

for an additional link between him and the manufacturer simply disappears, because the consumer is already able to determine what goods he needs, find his manufacturer and contract a mutually beneficial agreement. The traditional model of industrial society is being undermined: corporations are the owners; the consumers are the people. Now a person can embody both roles: consumer and owner. The Wikipedia online encyclopedia, a nonprofit project, began operating in 2001.

If global companies build their business based on the standardization and unification of their products and services, the Sharing Economy Services enables the user to obtain unique, authentic and personalized services and products. Currently, about one hundred large companies offer similar services: ParkingPanda, PogVacay, Rentoid, SnapGoods, Liquid, Zipcar, relayRides, Getaround, SideCar, Lyft. Almost all business models deployed by companies in the Sharing economy have a similar structure. They are a platform or online marketplace through which demand for certain assets or services is reduced by ownership of those assets and services by others. The assembly mechanism can be driven by demand (e.g. Peerby), supply (e.g. Sorted) or combination of both methods (e.g. Fixura). A graphic representation of the Person to Person business model is shown in the figure. The Person to Person platform enable to participants to post their own query to which a common pool of participants can respond (Figure 3).

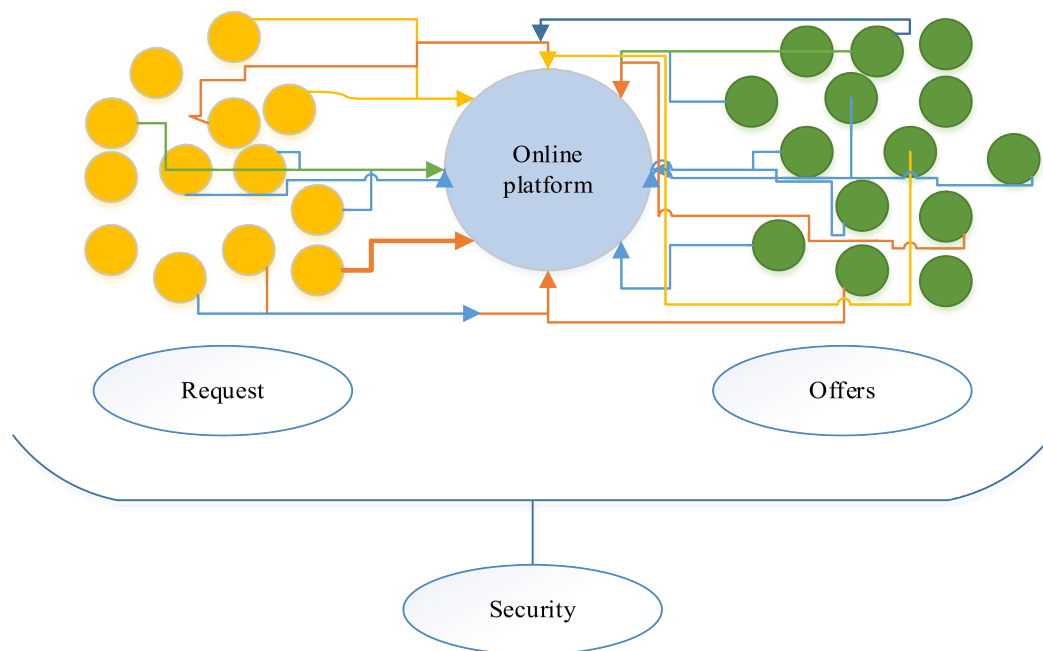


Figure 3. Sharing economy business model (author's development)

Among prerequisites for the emergence of a new business model are: development of technology (for example, the widespread distribution of 3-D printers), emergence and growth of the popularity of social media and social networks, advancement of mobile technologies, new consumer motivation, reducing their confidence in the corporate world.

Thus, social innovation on a modern information basis became a new phenomenon. A social-innovation idea providing greater access to knowledge and information for low-income people may not be completely new in other places and environments, but its application in this community may be innovative and useful. In this context, particular attention should be paid to technologies that provide service to Sharing economy platforms, their advantages and disadvantages. Technology plays a secondary role here because it only helps to flesh out the idea.

The classical market economic system has always relied on private property as the basis of all subsequent relationships. Sharing economy changes the focus: it brings us back to the joint or distributed production and consumption of goods and services. Although the practice of sharing has historical roots, it has re-emerged and developed thanks to new technologies bringing strangers together and facilitate communication.

The most startups are created in these areas. Sharing economy involves the presence of two elements: the existence of physically divided goods that systematically have excess production capacity, and the motivation to share them.

Joint consumption and Sharing economy are often used synonymously. However, Rachel Boatsman stresses that these concepts should be distinguished. In case of joint consumption, the focus is primarily on the idea of exchanging, dividing, trading or renting goods and services; it involves the transfer of ownership, either temporarily or on a permanent basis, which does not occur in the Sharing economy (e.g., Uber, Lyft, Zipcar).

We can say that the Sharing economy is the transition of real life affairs into the digital space: personal life becomes a part of the community. New digital technologies are used to adapt the practices, norms and values of privacy to the norms of the whole society. It is clear that this community is significantly different from traditional forms of market relations. Participating in Sharing Economy projects, we do not expect to receive direct and prompt benefits; we are not forced to follow specific community rules, everyone makes their own choices. The business model of a common property economy violates traditional forms of business organization, but personal rights are always dialectically linked to our lives as a part of a community or state, and these relationships should not be regulated in the same way as our relations with the market.

Attracting a wider range of users to the Sharing economy puts scientists at a dilemma: it either gives ordinary citizens more opportunities to earn money, or replaces traditionally safe and secure jobs, occupations on temporary and low-paid jobs. The person has the opportunity to independently choose the level of employment, working hours and get additional earnings.

The key factor that determines the level of success and acceptance of the Sharing economy business model and requires separate research is the culture and characteristics of local markets. Therefore, the key to the success of these enterprises is to operate in those countries where the local culture is open to innovation and overcoming traditional business models.

Conclusion

At the beginning of the XXI century the global economy emerges as a unique self-replicating network system whose nodes are in interdependent, asymmetric, politically and economically determined relationships. Its main features are global exchange of goods and services, factors of production primarily in the form of international movement of capital, labor and technologies, global organization of transnational production, logistics infrastructure, self-sufficient financial sphere, regulation of the activities of global market entities in order to ensure the balance and dynamism of economic development. The multidimensionality and imperfection of the global economy qualitatively transforms the mechanisms of competition, the resource and ideological basis of them are information and communication technologies.

A dramatic change is expected in the subjective architecture of the global economy, dispositions of countries and regions of the world. The public and corporate sectors are responding to new economic realities with the emergence of global strategic management, which aims to offset risks and benefit from global unification and standardization in all areas of the economy.

As a result of digitization by the 2020s, most professions will require candidates with completely new competencies: ability to work with large databases, development and algorithmization of tasks, visualization and presentation of management decisions. Introduction of artificial intelligence into mass production will reduce the number of traditional jobs while digital technology and robotics will create jobs for highly educated workers. The labor market, which is affected by mobile communications, the internet of things, robotics, big data technologies will undergo a dramatic transformation. The education system needs to be constantly modernized, which should be guided by modern general and special competences. Priority is given to the ability to solve complex problems by accumulating and using knowledge from various fields. Unlike lower technology, along with ability to work with large amounts of data and make fast decisions, the latest technologies require a person to conduct a thorough analysis of filtered data, visualize and present management decisions. A lifelong learning model becomes necessary.

Virtualization of the economy as a consequence of the dynamic and total process of penetration of information and communication technologies in all spheres of life generates the new forms of innovative entrepreneurship, for example, in the context of Sharing economy, which is built on exchange and joint ownership of resources and includes the following types of business: joint production, distribution, trade, consumption of goods and services when a key element of the market system - the intermediary - disappears. In this context, it is important to supplement the common classifications of social innovations with the emphasis on the economic performance of their implementation by the criterion of development / disruption of business and industry.

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