# Analysis of Fourth Industry Development of Sectors and Innovative Structures Information Economy

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***Abstract***
*The article is dedicated to studying the effect of the IV Industrial Revolution on the emergence of sectors of the information economy, the development of new industrial systems and revolutionary parks of technology. Here is a description of the scientific work and its effects on the new industrial revolution. The effect on the modern economy and the functioning of economic structures of the IV Industrial Revolution has been studied. It has discussed the nature, attributes, networks and constituents of industrial revolutions. It outlines its priorities, values, core objectives and outlines the key drivers and advances in science and technology. The importance of the industrial revolution has been illustrated in the region's revolutionary economic development. The international experience and situation in Azerbaijan in relation to the Fourth Industrial Revolution's expectations are evaluated and recommendations are given*

***Keywords:*** *postindustrial society, information economy, innovative structures, technological innovations, IV industrial revolution, promising industrial technologies, artificial intelligence, robotics, Internet of things.*

## Introduction

Most countries are currently moving to a creative model of economic development that plays a leading role in the service sector. The level of development of science and technology demonstrates that the main economic sectors are almost industrialized in nature. In other words, an economic restructuring of the economy has taken place.

The human capacity, technological progress, and the level of development of science and education are at the root of developed countries ' success. In the coming years, it will become more important to robotics, autonomous vehicles, artificial intelligence, digital computers, networks, space, information technology, new materials and biotechnology[1].

Countries that want to excel in micro-and macro-level technological competition in modern production give more room for innovative economic research. In this regard, the economic impact of the Fourth Industrial Revolution, the consequences of the Fourth Industrial Revolution, as well as the relevant research activities are being widely studied in the world's respected scientific and academic circles, as well as at the recent World Economic Forum meetings[2]. The study of the effect of the IV Industrial Revolution on the modern economy

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and the functioning of economic structures is, therefore, of particular importance as a catalyst for exponential growth.

Level of question analysis. In March 2018, the Web of Science website reported 521 research materials based on the keyword "Industrial Revolution-Industrial Revolution." Most of these materials cover the 2005-2018 periods. Of the published materials, 286 are modern revolutionary social sciences, 260 are social sciences, 145 are engineering sciences, and 8 are informatics. Like the fields of research. Of these, 517 were included in the database of the Web of Science Core Collection and 4 were included in the database of the SciELO Citation Index. There are 1) 248 scientific material reviews, 2) 196 papers, 3) 52 conference materials, 4) 40 theoretical materials, 5) 7 abstracts (types). 201 printed items are historical, 188 in industry, 137 in social sciences, 58 in engineering, 48 in sociology, etc. study fields. 130 Of the products in question were B. Brittany, 132 –USA, 28–Canada, 22–Germany, etc. countries. 28 Industrial Revolution Review papers, 20 Journal of Economic History, 13th Technology and Culture, 9th Journal of British Studies, 8th Library Journal, etc. have been published in journals such as. International Conference on Industrial Creative Innovation and Management, Annual Conference on the European Economic Union, Annual Conference on Industrial Engineering Applications and ICTC Manufacturing), International Conference on Technology Education and Development. There have been planned international conferences. In English, 85-90% of scientific materials were written. In contrast, French, Spanish, German and Russian have at least some research material[3].

**Industrial revolutions in social and economic development: their meaning and characteristics**

Industrial revolutions have contributed to the advent of innovation and economic rivalry at various times and in different countries. Let us note that in the 18th century, with the change from handmade to machine tooling, the first industrial revolution took place. The main issue at that time was building steam engines, setting up factories and separating labor. The time lasted one hundred years. Water and steam power encouraged manual labor, oil and coal acted as a source of energy during the first revolution. It can be defined as the first industrial revolution as a cycle of rising living conditions and health, In the late eighteenth and early nineteenth centuries, preceded by economic and social changes in society. In Europe, the first industrial revolution began and then spread to Central America. The transition has changed from agrarian to industrial societies.

It was possible to establish factories and plants in areas far from rivers and canals due to the transformation of steam energy into mechanical energy. Large-scale factories and new-type plants were produced through manual labor mechanization. The main part of the Industrial Revolution was not only steam engine development but also movement vehicle mechanization. At the same time, new methods are being replaced by kohl methods used in manufacturing. The job here, based primarily on human behaviors, is replaced by machines that work quickly, reliably and tirelessly, replacing the individual with an inexhaustible source of energy, and most importantly, the Creation of an inexhaustible source of energy using heat exchangers. It was noticeable that it would be replaced by synthetic materials that were not necessary. In the first half of the 19th century, the second industrial revolution took place when the conveyor was invented and the widespread use of electricity, chemistry and internal combustion engines began. The use of energy-related technologies made this transition possible and allowed mass production to be developed and consumer markets to be established. Nearly a century after its precursor, the Third Industrial Revolution took place. 1969 marks the start of the Industrial Revolution III. During these years there has been the growth of computers, the advent and dissemination of information technology, and the automated process of production using these technologies[4, 5 ].

The name of the third phase of industrialization turns to the history of the "digital revolution" with the advent of electronics and computers. All production processes are massively automated and computerized. With microelectronics, data and the Internet, trillions of manufacturing industries have emerged. The Third Industrial Revolution has developed around computers and information technology, creating a phenomenon known as the world of the post-industrial or digital economy. Lastly, since the first decade of the 21st century, society has begun moving on to a new phase of the IV Industrial Revolution— the stage of acquiring the production

intellect. The end of human reliance on development, in other words, has begun. In this direction, the cycle has been accelerated and smart, plant, house, town, and so on. Expressions are becoming increasingly possible.

Considering the fact that industrial revolutions took place at intervals of nearly 100 years, it can be said that in 2060-70s the next, the fourth revolution, will take place. Nevertheless, information and communication technologies (ICTs) were rapidly developing by the end of the 20th century. The number and variety of services related to the Internet and their users have reached a high level. The IV Industrial Revolution would be much sooner with the advent of groundbreaking developments in the fields of robotics, sensors, information sharing and manufacturing technologies.

The rapid deployment of computers and IT, one of the major strengths of the previous Industrial Revolution and its application in all areas of life, is certain that this transition will occur more rapidly. If the key factors in previous revolutions were distributed in the form of numerical series, this process would be generated in the fourth industrial revolution by geometric series.

**The Fourth Industrial Revolution Platform's function, architecture and components**

The next IV Industrial Revolution[ 2, 6, 7] was one of the key topics discussed at the 2016 World Economic Forum. Intellectual capacity, commonly found in economic management, human capital, corporate governance, etc., such ideas as the start of the IV Industrial Revolution — Industry 4.0, the development of a modern economy separate from the conventional economy. Information and communication advances that have accelerated since the late 20th century have contributed to the growth and development of the modern economy. Continuous growth and innovation are necessary for a modern economic system to continue.

In numerous authoritative science and research circles around the world, where scientific and technological advances and developments in human behavior are accelerating, the IV Industrial Revolution was also one of the key topics of discussion. Industry 4.0. Industrie 4.0. The term (Industry 4.0) was created in Germany in 2011 and has been used by many to describe the process of computerization of industrial production, widely regarded as the Fourth Industrial Revolution.

The Fourth Industrial Revolution, or INDustry 4.0 platform, uses digital technology and real-time data to increase productivity of labor and rising costs of production. In smart factories, industrial machinery, storage systems and manufacturing processes are capable of performing difficult tasks freely, exchanging information, and commanding and commanding one another without requiring human presence. Industry 4.0 helps digital technology to incorporate global industrial development. Industry 4.0 is a major advantage of multinational corporations. Because they have access to production information along the supply chains, in addition, companies are more responsive to trends in the business world and can plan their activities based on accurate forecasts. In addition, smart technologies and smart systems can lead to widespread employee productivity management practices. Smart factories are predicting high demand for flexibility in working conditions in both manufacturing, processing, assembly and adjustment processes, as well as transportation and logistics. This, in turn, results in an increase in unstable employment[ 8-10].

The fourth industrial revolution platform aims to increase the competitiveness of the manufacturing and processing industries by introducing cyber-physical systems into production processes. The conceptual structure of the IV Industrial Revolution can be proposed, as shown in Figure 1, based on the synthesis of existing approaches, as well as the priorities of development strategies and the results of scientific analyzes.

Industry 4.0 is compliant with the Internet of Things (IoT) output, which involves everything from vehicles to home appliances to the Internet. This is an entirely new and different manufacturing approach.

Industry 4.0 Working Group assumes that Industry 4.0, which includes highly qualified professionals, artificial intelligence experts and economists, is being formed. The United States has formed a large, non-profit Internet alliance led by industry leaders such as General Electric, AT&T, IBM, and Intel. Significant research on the

theory of Industry 4.0 is currently under way[11, 12]. While it is not entirely clear what the future holds, one can imagine the perspectives of the Internet of Things. Therefore, as in the concepts of "smart home," "smart factory," "smart city," the formation of close communication between people on the platform of the IV Industrial Revolution is a requirement of the modern age.

**The position and importance of the new process of industrialization in the economy**

In recent years, both developed and developing countries have been linked to the increasing role of manufacturing in the global economy. The nature of its structure characterizes industry among the economic sectors. The industrial complex comprises more than 300 areas and sub-sectors according to various international classifications. The industry's share of the global economy is around 30%, and this business accounts for 40% of the world's energy consumption. The Organization for Industrial Development of the United Nations reports that about 12% of the economically active population engaged in industrial manufacturing is involved. According to the International Labor Organization, Industry is distinguished by the complexity of its organization among the economic sectors. The industrial complex includes more than 300 areas and sub-sectors according to various international classifications. The industry's share in the global economy is about 30%, and 40% of the world's energy consumption accounts for this sector. The United Nations Industrial Development Organization estimates that about 12 percent of the economically active population engaged in industrial processing is. The number of factory employees worldwide has grown by more than 200 million over the past 15 years, according to the International Labor Organization.

The diversification of individual countries ' industrial structure depends directly on various factors, including the availability of high-quality labor, the size of the domestic market, and the rate of scientific and technical innovation growth. One of the largest industrial countries is the United States, China, Japan, Germany, and Russia. Simultaneously, for the past 20 years, Asia's place in the global industry has been growing. Looking at the rate of industrial structure diversification, however, the US, Japan, and Germany are the countries that have mastered the entire spectrum of industrial products. Competitiveness tends to be more broadly based in other developed Western European countries.

In the context of the sector, heavy industry and mechanical engineering have a dominant position. This trend has been exacerbated in recent decades, as much of the scientific and technical innovation in these areas is being applied. On the verge of the new industrial revolution, heavy industry and mechanical engineering are on the brink.

A logical continuation of the mechatronics trend produced in Japan in the 1970s is the latest industrialization phase in Germany. As a result of computer software, electronic devices, communications technologies, physical equipment and machine tools, as well as the human factor, "smart" factories and factories are produced and 3D objects are built based on 3D printing and modular technologies.

The US, Germany, China, Japan, and South Korea have increased the amount of funding for research in this area over the past 15 years. While most of the value chain is concentrated in research and science products in developed countries, the impact of cheap energy, natural resources, and labor is greater in developing countries. The key purpose of the new industrialization support measures is to improve industrial enterprises ' productivity and ensure that the main markets, including the international sales markets, are the ones.

Depending on local circumstances, specific support measures such as growth, international trade, human resource development, infrastructure building, the establishment of special economic zones, industrial parks and clusters, sectoral strategies and modern technology transfer are used in many countries[13, 14]. ]. When export-oriented countries become more experienced in relationships related to metallurgy, automotive and mechanical engineering, efforts to promote human capital are becoming a necessity.

**Perspectives in applying fundamental technological innovation**

It is agreed that the "horse"-CPS (Cyber-physical systems) is the main component, formative component and development engine of the IV Industrial Revolution. Combining physical, electronic and biological worlds, cyber-physical structures. This is because IT is directly involved and influences the systemic and interrelationship of these three domains. Another characteristic is the convergence of production systems and corporate governance, interactions between employer-employee and business-customer[ 15, 16].

It is a difficult process to align electronic and human interfaces that consume huge energy resources. Cyber-physical systems (CPSs) are generated and implemented instead of these autonomous objects, which now consists of interconnected components. In reality, developing complex systems by combining these simple devices with telecommunications is the path to the next "industrial revolution."

**The following technological innovations will be of great importance and use in the sense of the IV Industrial Revolution[2 ].**

In households, companies, socio-economic structures and leadership, the implications of artificial intelligence and machine learning will soon be felt. In the near future, various robots will do a lot of work in transport systems, storage, warehousing, shipping, domestic operations and industrial operations as a result of the advancement of robotics. In learning, accountability, transparency, protection, corporate governance and decision-making, new methods of analytical learning will be created. New generation network technologies focused on cloud and fog technology, biocomputers, parallel computing, quantum computing, and supercomputers are going to evolve very soon.

With the development of the Internet of Things or the Internet of Things, the cost of connecting the Internet to objects, computers, appliances will be reduced and the number of examples of living things in the network will be steadily increasing. When their activities grow on the Internet, the shape and essence of socio-economic, socio-political relationships will change dramatically.

The introduction of autonomous self-driving technology would bring about progressive changes in the path of urban life, passenger transport, freight traffic, parking and mobile traffic. At the same time, this phase will have a very significant impact on human resource management and will influence the development of new socio-economic relationships.

New areas of application are being developed by the advent of drones, the development of unmanned aerial vehicle control technologies. Simultaneously, it needs the solution of new air space physical and virtual infrastructure issues. Different elements of human activity management, new requirements, standards and regulations will be increasingly needed to ensure health.

Applying developments in embedded medical technology, gene engineering, biotechnology, nanotechnology, stem cells, e-medicine, 3D-bio material printing in the medical field, using state-of-the-art treatment and diagnostic techniques and methodologies in the health sector, their economy, management technology, the decision-making paradigm will be fundamentally renewed and developed. In the context of the IV Industrial Revolution, there will be an urgent need to form the medical industry.

Developing blockchain technology, emerging new cryptocurrency networks, and growing popularization of their use would result in many socio-economic changes in the world currency system and foreign financial relationships. In controlling economic relationships, there is an important need to develop new approaches to both the physical and virtual world. This also leads directly to a new basis for the transformation of the industrial system.

In the context of the new industrial revolution, the advent of e-commerce and payment systems is transforming the perception of international trade and sales processes. The ability to incorporate the smallest company into the global economic system is expanding. 3D printing is evolving with a new production, distribution,

marketing and advertising innovations. It designs its own customer-focused development, distribution and logistics systems. New systems of regulation and management are required.

Against other aspects of the industrial revolution, environmental protection, resource management and green technology are being further developed. Human society's health relies on the climate. Although natural resources are improving industry and economy, the climate has a negative impact on public health and social issues. Natural disaster preparedness, damage restoration, food security implementation, timely avoidance of global environmental cataclysms, climate change adaptation, biodiversity conservation, water resource management, etc. These issues require new technology for leadership and decision-making. For this reason, new monitoring systems should be built; information exchange systems should be created, intellectual decision-making technologies will be established and integrated with other related economic and technological systems. As a consequence of the industrial revolution there will be a need for new regulation frameworks in human resource relations due to the energy storage and the emergence of new alternative sources of energy.

**The Fourth Industrial Revolution's science and technology advances and features**

Industry 4.0's true value is not what separately can be generated by cyber-physical systems. The true value lies in the interconnection between various CPSs and their ability to adapt to humanitarian assistance to the environment. Obviously, in both the theories of Industry 4.0 and the Internet of Things, telecommunications and the Web play a central role[8, 17].

In many areas of production and management, the Fourth Industrial Revolution will minimize the role of people. Automation and robotics are going to clear the boundaries between physical, digital and biological objects. Such a comprehensive system, covering all fields, is focused on automated and robotic manufacturing and management tools. His digitalization is the main feature of this industrial revolution. The other key features are that at this time, there will be many new technologies being developed. Such innovations will serve as a replacement for economically impacted natural, electronic and bio-products. There will be an even greater development stage.

The following areas are being developed as part of the Fourth Industrial Revolution: artificial intelligence and machine learning, space and space drones, robotics in different fields and rapid spread in human life, Internet of Things technology, 3D printing products, nanotechnology and biotechnology. Quantity calculations, energy storage and use of renewable energy, self-driving vehicle development, etc.

Cyber-physical systems were applied to manufacturing processes during the Fourth Industrial Revolution, increasing the industry's competitiveness. As we have noted, this revolution is focused on automated and robotic production and management methods. The main characteristic is that it's electronic. For the IV Industrial Revolution, the current period can be viewed as a transition period. Based on innovation, information and new technology, the economy is evolving during this time. The Fourth Industrial Revolution has an enormous impact on the growth of the information economy and the exciting development of revolutionary structures. Some of the features of this international system are:

- Interaction feature: contact between people and smart factories via the Internet of Things and Services via cyber-physical systems;
- Virtualization feature: the system consists of a combination of sensor data with virtual devices and simulation models;
- Autonomous management features: the ability of cyber-physical systems inside intelligent factories to make their own decisions;
- Ability to collect and analyze data in real time;
- Serviceability feature: cyber-physical systems are supported by Internet services, human resources and smart factory services;

- Modularity: the adaptation framework is versatile for smart factories to adjust the specifications of individual modules.

Targeting the IV Industrial Revolution is economic growth and greater market productivity to increase income levels, to create new values, to simplify, to improve research in certain management fields, to have a positive impact on people's living standards. Each transition involves all states, economic and political systems, private and public sectors, businesses and companies, macro and micro-environment factors, industry, competitors, customers, employees, etc. in the transition to the new industrial revolution. It's a fantastic influence.

The following are the key IV Industrial Revolution-based Internet and IT innovations in different applications[20]: implant technologies, new visual interfaces, portable Web (Clothing Internet), Internet of Things, "smart" home, "virtual" man, constant Internet access. (Mobile supercomputer), data storage, "smart" city, 3D decision-making, Big Data technology, drone vehicles, artificial intelligence, robotics, cryptocurrency technology, manufacturing, education and consumer goods.

**New industrial policy characteristics in Azerbaijan**

The country has begun a new era of industrial development. During this time, part of the income from the oil and gas sector focused on the growth of different industries. Government programs have been implemented in the regions to improve the industrial structure and substantial work has been done to address the supply of energy. In order to improve the overall infrastructure and open new production facilities, several programs have been introduced. The country's favorable business environment and important business decisions have played a major role in the industry's growth. Thanks to the measures taken in recent years by the government, The private sector's share of GDP in 2015 was 81.2%. There were 677,000 business entities, including more than 100,000 legal entities.

New industrial facilities in the field of heavy industry and mechanical engineering have been commissioned in terms of diversification of industrial structure and geographic coverage in compliance with the State Program for Industrial Development for 2015-2020. Sumgait Technology Park, Sumgayit Aluminum Plant, Ganja Aluminum Mill, Gadabay and Dashkesan Gold and Copper Plants, Garadagh Cement Plant, Sumgayit Carbamide Plant; New industrial plants in the field of heavy industry and mechanical engineering have been commissioned in compliance with the State Industrial Development Program for 2015-2020 in terms of industrial structural diversification, Sumgait Technology Park, Garadagh Cement Plant, Sumgayit Carbamide Plant, Ganja Aluminum Mill, Gadabay and Dashkesan Gold and Copper Plants; Nakhchivan Automotive Factory, ATEF Group's Irrigated Transformers Facility, Norm Cement Plant, Sumgait Plastic Processing Plant, Mingachevir Electronic Equipment, Steel Pipe, Solar Panels and Metal Structures.

The Sumgait Chemical Industrial Park continued to work on the development of external and internal infrastructure, office, consulting, laboratory testing, business incubation, education and vocational training, as well as the creation of other infrastructure facilities needed to effectively implement business activities. The development of the Polymer venture over the past 40 years by the State Oil Company of the Republic of Azerbaijan on the park's territory is one of the largest in Azerbaijan's petrochemical industry by size and scale. In addition, large-diameter corrugated polyethylene tubes, steel pipes, mechanical equipment and hydraulic equipment are produced in the park; manufacturing glass boards based on Float engineering (hot bath rolling) are home-made plants for the production of pesticides for the first time in the Republic. It began to work.

Recycling companies have been set up in Balakhany Industrial Park. In the Garadagh Industrial Park, a new shipbuilding complex was built. High-tech and creative goods are being drawn to the High Technology Park. A joint venture with the Islamic Republic of Iranian Khodro Company was initiated in the Neftchala Industrial District. The construction of the country's new pharmaceutical industry facilities has started at Pirallahi Industrial Park. The Mingachevir Industrial Park and the Masalli Industrial District are planning the infrastructure and infrastructure necessary for local entrepreneurs in the light industry and other areas.

However, in recent years, about 50 new manufacturing facilities have been built to build a strong defense industry using the mechanical engineering potential of the state. For the further growth of heavy industry and machine building, Azerbaijan has favorable conditions. Skilled human capital, improved facilities, functioning structures and an optimized business environment are essential to the industry's future[1].

More intensive measures are being taken to recognize the potential prospects for Azerbaijan in the heavy industry and mechanical engineering compared to international trends. It should be noted that advanced countries are already entering Industry 4.0's new phase. Further investment in this field is significant, updating technical equipment and production processes, increasing labor productivity, and increasing the share of innovative products to global metrics in overall sales.

**Possible manifestations in the country's revolutionary economic development of the Fourth Industrial Revolution**

The share of industry in Azerbaijan's economy is almost twice higher than the global average of 30.5 percent. While oil and natural gas manufacturing is a leading manufacturer of chemicals, pharmaceuticals, rubber and plastics products, oil products, building materials, metallurgy, finished metal products, computers and other electronic equipment, electrical equipment, machinery and equipment, electricity, gas and steam production, distribution and supply, water supply, etc.

In line with the country's pace of development, steps have been taken to address the 21st century economic system-the transition to an information economy; special attention has been given to the creation and development of technical parks, industrial parks, agro parks, which are key frameworks for addressing these issues, and appropriate steps have been taken in this regard. In Azerbaijan, a number of industrial parks are set up to stimulate the process of industrialization and establish creative industries. Project theory "Azerbaijan 2020: Looking into the Future," Action is being taken to transfer and master the country's advanced technologies, creating an enabling environment for innovative entrepreneurship, promoting new activities and products.

Appropriate technology parks and innovation zones for the production and application of science products and technologies are being developed in Azerbaijan[21, 22]. These enterprises were set up by the Country President's Decree of 28 December 2011,' Balakhani Industrial Park," Sumgait Chemical Industrial Park,' founded by the Decree of 21 December 2011,' Sumgait Technology Park,' launched on 22 December 2009. Baku Technology Technopark University (BMU Technopark), established in 2013,' Shamkir Agropark, founded in 2014, and others. An example is a case in point. The establishment of the High Technology Park and the ICT Fund in November 2012 is one of the important events in Azerbaijan for the development of high technology and the latest innovations in this area.

Based on the island of Pirallahi, High Technology Park (YTP) operates primarily in the following areas: mobile technology, information technology, online business, graphic animation, software engineering, space research and telecommunications, robotics and mechanical technologies, LED technology, biotechnology, nanotechnology. Such as engineering areas, medical technology, power carriers, alternative energy, etc. As of December 31, 2013, YTP's total equity assets was AZN 50,000, over 3.7 million in just one year. The location of the island's industrial park extends the arrival area. Trips to Russia, Kazakhstan, Turkmenistan and Iran by sea can be planned. The YTP has the potential to become a joint technological park in the Turkish world with its ongoing geographical location. Mingachevir High Technology Park was built at YT Park LLC in Mingachevir in addition to its main headquarters on Pirallahi Island under the presidential decree of 26 February 2015.

The country is taking the necessary steps to improve scientific research, innovation and development, according to the definition of "Azerbaijan 2020: Looking into the future." Particular attention is paid to the creation of institutions such as innovation parks, industrial parks, neighborhoods and clusters[23] for this reason. The

following benefits are provided to entrepreneurs in industrial parks built and operating in Azerbaijan: income tax exemption for 7 years; property and land tax exemption; VAT exemption; business (training, consulting, etc.) services; access to talent and academic circles. Therefore, from the date of receipt of the investment promotion report, the manufacture of machinery, technical equipment and facilities were excluded from customs duties for a period of seven years. Apparently the requisite legislative framework has been prepared in Azerbaijan for the establishment of techno-parks and similar structures, and other related measures have already been taken. The IV Industrial Revolution will also have a negative impact on the labor market given their respective advantages. This cycle can influence people's lives and generate other emotional social and psychological issues.

The number of jobs that will still exist in the coming years will be reduced[2], according to a survey from the World Economic Forum in Davos. Therefore, more than 35% of the existing vocational skills will be influenced by the fourth industrial revolution. The 10 most demanding skills can be categorized as problem-solving, critical thinking, creative skills, managerial skills, coordination with others, emotional intelligence, decision-making ability, negotiating ability, flexible communication. Action.

Fourth Industrial Revolution Foreign Experience

The IV Industrial Revolution's technological innovations will be very important in influencing economic demand and supply. For the period 2018-2020, EFFRA has built a program called "Plant 4.0 and beyond" in line with the futurological plan "Factory of the Future." This program combines the previous program synergistically with the 4th thesis of the Industrial Revolution[24, 25].

Industry 4.0's definition is aimed at intelligent production management under new conditions, where units and shops are basically autonomous and analytical. Individual goods, products and services requirements of customers create an entirely new economic infrastructure environment and management mechanism based on modern technologies such as 3D printing, IoT, cloud computing, mobile devices, big data.

Many foreign countries, in preparation for the 4th Industrial Revolution, have certain features and details in their growth plans to develop economic policies. Many countries have also adopted special strategies since 2005 to digitize their economies: Singapore (2005), Australia (2006), UK (2008), Norway (2009), EU (2009). Canada (2010), USA (2011), Malaysia (2012), Republic of Korea (2013), India (2015), New Zealand (2015) and others.

The U.S. Performance Development Program for 2011 was based in the U.S. This program aims to coordinate federal government, industry, and university activities to create an innovation-friendly environment and invest in new technology and design methodologies. The National Industrial Innovation Network aims to expand the network of research institutes, develop cooperation between science organizations, government and industry, and accelerate the marketing of innovation processes[24, 25].

The purpose of the Complex Program "New Industry in France" (2013) is to support 34 major industrial projects such as "Factory of the Future," "Supercomputer," "Robotics," scientific research coordination, innovation and transfer.

The Japanese robot movement is based on the Internet of Things, dubbed the "Robot Revolution" (2015). Based on its content, the 2015 Made in China 2025 program focused on the integration of the ICT industry.

Moreover, in connection with the 4th Industrial Revolution in some countries: in Germany, "4.0. Industry (2013), European FoF Program (2013), United States Program for Advanced Industry and Cooperation (2014), Netherlands Smart Industry (2014), Spain 4.0 Industry (2014), Malaysia Plan (2015). Complex programs were also adopted.

The key principles and impacts of new industries are illustrated by an overview of the perspectives of the Fourth Industrial Revolution on the growth of information economy sectors, ICT-based real economic sectors and

related technological frameworks, as well as strategic initiatives and programs in this field. First of all, new industrial equipment with the concepts of flexibility, interoperability, complexity, interoperability must be able to combine and work together with elements efficiently. Therefore, the virtualization theory is based on the fact that every physical process in production must be a digital model So that the information obtained can be handled under real circumstances. The third key concept is autonomy, which involves integrated manufacturing components, sensors, computers, networking devices, etc. Will operate freely and make the right decisions.

## Result

The fourth industrial revolution will bring tremendous benefits to the world and to the global economy as a whole. It is going to be the key goal of the new development phase. We must not forget that robots, cyber-physical systems, the industrial revolution, are the product of the human brain and benefit society. Therefore, when a person produces the best product of his or her brain, he or she must also seek and implement the best possible ways to benefit from it. The moving components of the Fourth Industrial Revolution are created, developed, disseminated and widely used in the context of time. This method, in turn, causes several socio-economic changes in economic life. Nonetheless, the universal diffusion of the new Industrial Revolution's components is essentially the core of such a revolutionary information economy. Relevant scientific and technical and strategic work should, therefore, be conducted to take into account the technological characteristics and growth patterns of the new Industrial Revolution while designing frameworks for the establishment of the new economy, approaches and resources for the creation of innovative technology parks.

## Study of the Fourth Industrial Revolution's impact on the growth of revolutionary information economy systems and sectors

The article is devoted to studying the effect of the Fourth Industrial Revolution on information economy sector growth, new industrial structures creation, and innovative technology parks. It analyzes the findings and evaluations of experimental experiments and the effects of their impact on the development of a new industrial revolution in the economy. The problems of the Fourth Industrial Revolution's impact on the modern economy and the development of economic structures are being studied. It explains the industrial revolutions, their essence and characteristics. The Fourth Industrial Revolution's system, architecture and materials are being studied. It shows its objectives, principles and main tasks identify scientific and technological features and identify key drivers. During the Fourth Industrial Revolution, attention is paid to the need for technological innovation. This shows the importance of the Fourth Industrial Revolution's effect on the region's revolutionary economic development. In accordance with the anticipated effects of the Fourth Industrial Revolution, global trends and the situation in Azerbaijan are examined and specific recommendations are proposed.

## References


i. *Milli iqtisadiyyat və iqtisadiyyatın əsas sektorları üzrə Strateji Yol Xəritələri, Bakı, 6 dekabr 2016-cı il, http://www.president.az*
ii. *World Economic Forum. Center for the Fourth Industrial Revolution, https://www.weforum.org/center-for-the-fourth-industrial-revolution.*
iii. *Web of science, https://www.webofknowledge.com*
iv. *Владов Р.А., Дозорцев В.М., Шайдуллин Р.А., Шундерюк М.М. Практические аспекты четвертой промышленной революции // Автоматизация в промышленности, 2017, №7, с. 7-13.*
v. *Vəliyev C.X. IV Sənaye inqilabının astanasında, https:www.//jabrayilvaliyev.com/2016/01/28/iv-s%C9%99naye-inqilabinin-astanasinda*
vi. *Anatolevich G.K., Sergeevich U.V. Trends of the fourth industrial revolution a review of the monograph: Schwab K. The fourthindustrial revolution // Economic and social changes-facts trends forecast, 2017, volume 53, issue 5, pp. 216-221.*
vii. *Berawi M.A. The fourth industrial revolution: managing technology development for competitiveness // International journal of technology, 2018, volume 9, issue 1, pp. 1-4.*

viii. *Rabeh M., Husam A., Saeed M.. The fourth industrial revolution (İndustry 4.0): a social innovation perspective // Technology innovation management review, 2017, volume7, issue 11, pp.12-20.*

ix. *Юмаев Е.А. Инновационно-промышленная политика в свете перехода к индустрии 4.0: зарубежные тенденции и вызовы для России // Журнал экономической теории, 2017, №2, с.181-185.*

x. *Rəhimov F.M., Abbasova B.İ. Azərbaycanda yeni sənaye inqilabı ərəfəsində texnoparklardan istifadənin vəziyyəti // III beynəlxalq Türk dünyası araşdırmaları simpoziumunun materialları. Bakı, 2016, səh.149-153.*

xi. *Wang, K.L., Cao Di.R. A study on the new path of capital formation under information economy based on research of capital formation model under IOT Internet of things // International conference on engineering and business management, 2010, vol. 1-8, pp.1513-1516.*

xii. *Гулин К.А., Усков В.С. О роли Интернета вещей в условиях перехода к четвертой промышленной революции// Проблемы развития территории, 2017, №4 (90), с. 112-131.*

xiii. *Ковальчук Ю.А., Степнов И.М. Цифровая экономика: трансформация промышленных предприятий // Инновации в менеджменте, 2017, №1(11), с. 32-43.*

xiv. *W.Kubinger, R.Sommer. Fourth industrial revolution-impact of digitalization and Internet on the industrial // Elektrotechnik and informationstechnik, 2016, volume 133, issue 7, pp. 330333.*

xv. *Armando C.W., Stamatis K., Okyay K., et al. Industrial cyberphysical systems // IEEE industrial electronics magazine, 2017, volume 11, issue1, pp.6-16.*

xvi. *Waidner M., Kasper M. Security in industrie 4.0-challenges and solutions for the fourth industrial revolution // Conference: Design, automation and test in Europe, Germany, 2016, pp.1303-1308.*

xvii. *Dusko L. The fourth ICT-based industrial revolution "Industry 4.0" - HMI and the case of CAE/CAD innovation with EPLAN P8. Conference: 20th Telecommunications Forum (TELFOR), Belgrade, Serbia, 2015, pp. 835-838.*

xviii. *Illiashenko S.M. Illiashenko N.S. Opportunities and threats of the fourth industrial revolution and their reflection in the selection of innovative growth strategies // Marketing and management of innovations, 2016, issue1, pp.11-21.*

xix. *Halse L.L., Ullern E.F. Getting ready for the fourth industrial revolution: innovation in small and medium sized companies // Advances in Production Management Systems. The Path to intelligent, collaborative and sustainable manufacturing, 2017, pp. 247-254.*

xx. *Mihyun C., Jaehyoun K. The Internet information and technology research directions based on the fourth industrial revolution // KSII Transactions on Internet and information systems, 2016, volume 10, issue 3, pp.1311-1320.*

xxi. *Qasımlı V. "İqtisadi Modernizasiya" // Azərbaycan Respublikasının Prezidenti yanında Strateji Araşdirmalar Mərkəzi, Bakı, 2014, səh. 312.*

xxii. *Alguliyev R.M., Aliyev A.G., Abbasova V.A. The study of formation characteristics and development tendencies of international information and knowledge economy // J. Review of knowledge economy. 2017, vol. 4, No.1, pp. 7-14.*

xxiii. *Aliyev A.G., Shahverdiyeva R.O. Conceptual bases of intellectual management system of innovative technoparks // I.J. Education and Management Engineering, 2017, №2, pp.1-7.*

xxiv. *Yongxin L., Eduardo R.L., Fernando D., et al. The impact of the fourth industrial revolution: a cross-country/region comparison // Production, 2018, volume 28, pp. 2/18-18/18 25. Liu C. International Competitiveness and the fourth industrial revolution // Entrepreneurial business and economics review, 2017, volume 5 issue 4, pp.111-133.*