

## The Main Global Trends In Scientific And Technological Development In The World, Classification And Assessment Of Scientific And Technological Development Level

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### Abstract

*At the beginning of the XXI century ICT was one of the important factors that could affect the development of society and economy. Developing and developed countries get profit at a high level from the advantages that ICT can establish and achieve great success in the economy. The degree of application of ICT is one of the main features of the economic and scientific potential of the country, as well as the level of its management in the state. Nowadays, the importance of e-business is increasing over time in the world market, and the ability of countries to compete in the economic field depending on the level of effective use of ICT. A number of steps have been taken in Azerbaijan in order to increase in this space, and ICT has become an integral part of state policy.*

**Key words:** *Development Of Society, Economy, Post-Industrial Society, ICT.*

### Introduction

The end of the last century coincided with the replacement of civilization with a new and more progressive stage in terms<sup>1</sup> of population development. It was a crisis of industrial society that included every level in the pyramid of civilization.

Within the industrial civilization, it gathers strength rapidly with the accumulation of new elements over time. Those elements make up the post-industrial society style.

The main characteristics are as follows:

- creating process of a person at a higher level of knowledge and the conformity of this knowledge to the new idea of the rules of development of society and nature;
- progressive manufacturing, radical reconstruction of the production structure and demilitarization by prioritizing the personal needs of the society, as well as ensuring the transition to an even higher technological structure;
- the structure of state with democratic rights;
- beginning the period of national revival with the formation of voluntary unions of nations with equal rights;

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- revival of high culture; the demand for intellectual products, the growth of science-intensive production, the primacy of moral reproduction, the further increase of the share of people engaged in intellectual labor.

It is important to take into consideration the emphasized global trends in the development of future development of the state, as well as its regions, all fields' activity, especially innovation and scientific and technical spheres. One of the absolute conditions for our country to be able to join the world economy with equal partner rights is the activation of innovation and scientific and technical activities, as well as the ability to structurally rebuild the economy based on the development of high-tech, science-efficient production and transition to an even more high-tech economy.

During the end of the 20th century to the nowadays, there have been very rapid changes in human society. The basis of these changes is innovation. Radiophysics, electronics, optoelectronics, modern materials science, laser technologies, chemistry and catalysis, cosmonautics and modern aviation, many fundamental and also technological inventions, the use of new information technologies, the results that obtained in the fields of macro and microelectronics, as well as nanotechnologies are the main reasons for the creation of products. Modern technologies that ensure the acquisition of these products are science-intensive technologies.

As a result, the use of science-intensive technologies led to the emergence of a new direction in economic development - innovation-oriented economic development. This model has proven its high efficiency in the example of some developed countries of the world.

Since the end of the 20th century, the terms known as knowledge-based economy or knowledge economy have become widespread in science. The main factor that distinguishes this economy from other industrial and agrarian economies is human and knowledge capital. Currently, the main source of economic growth in many developed countries is the production of this knowledge.

Experts at the World Bank believed that the knowledge economy is an economy that creates, uses and disseminates knowledge in order to accelerate personal development, as well as increase competitiveness.

A new form of competition began to emerge as a result of the interaction of science and production. It is impossible for enterprises that do not use modern science-intensive technologies in production to compete in the world markets now. The basically important condition has to take into consideration in the developing strategy of enterprises is the application of scientific technologies and innovations to production.

It is enough to remember P. Drucker's words for understanding innovative economy in the development of each country: There will be no concepts of rich or poor countries in the world in the future. There will be distrustful countries that do not focus on innovation. In order to get acquainted with the innovation-oriented development of the economy: scientific parks (small business incubators, technical parks, techno polices) that play a role in innovation and its acceleration, fundamental science - application, as well as new and modern forms of organization of science - production relations and other such concepts and it is important to get acquainted.

In a number of developed countries of the world, science-intensive goods and technologies make up a large part of GDP (general domestic products) growth at present. Recently, the United States, Japan, Western Europe, China, India, as well as South Korea and Singapore, etc. the economic growth of countries like is closely related to the development of innovation infrastructures.

The concept of the new economy has recently become widespread. The emergence of a new economy was caused by the development and spread of high-speed Internet and

computers as a result of technological development since the 1990s. That is a new economic period, that is considered the information period.

The concept of New Economy describes the impact of newly created technologies on the economy. The era of textile-heavy industrial production is the era that began with the advent of electricity near the end of the 1800s, and later with the advent of new inventions such as the radio, telephone, TV, and the automobile.

The new economy of this modern era is associated with a number of concepts such as creativity, information production, information society, and information. This economy uses new technologies that are products of information and knowledge, so that these technologies increase efficiency in every area of the economy.

The new economy is essentially an information economy, and information in the new economy is becoming more important than the inputs used in earlier periods, both quantitatively and qualitatively. And information seems to be the only factor of production more important than capital and labor. One of the main characteristics of the new economy is the integration of information into each of the economic activities, in other words, the high degree of information intensity increase in each of the economic activities. Although the significant increase in information trade, information as a product has become very important.

Knowledge creation is mainly attributed to information consumers, and at the same time, information workers in the new information economy. The main sources of organizations are not classical factors of production in the information economy, but knowledge and human capital. It should be noted that the production of information and its use as a commodity, inventions and innovation play a decisive role in the creation of prosperity and wealth in the new economy.

In increasing the efficiency of production, the efficiency of distribution and production process information is the main tool, as well as the quantity and quality of products, and the possibility of choosing between services and goods for consumers and producers. In order for industries and firms to be successful, they need to innovate and innovate, develop new products, provide new services, and increase the information density of their goods and products. The new economy is also considered the digital economy. In the new economy, all types of information, writing, sound, moving object, image, etc. delivered through computer networks. Large amounts of information are transferred to their recipients very quickly, reliably and cheaply.

As we know, the information economy in the countries that have an important place in the world economy is increasing day by day. Knowledge is considered the most important factor in determining the standard of living, and currently technologically advanced economies are considered knowledge-based economies. Countries with strong knowledge-based economies are also more competitive.

The increasing importance of information, skills and creativity is also changing the sources of comparative advantage among countries and the way firms compete. The increasing importance of information-based economies over time leads to important effects on the factors affecting growth, the organization of production, the need for high-level personnel and employment, as well as necessitating new applications in industrial and competition policies.

The value and importance of science is gradually increasing, it is becoming one of the most important means of competition to create difference and innovation. In the future, with developments in technology and science, science-based production will continue to be the main determinant of growth. Some technological research and development

activities and investments are developed not only by the free market mechanism, but also by the directional, supportive and regulatory approaches of society.

A number of research and development activities can have an international character and are mainly carried out by global companies. The economic opportunities of the modern era can rely on the perspectives of the forecasting method in the formation of priority areas. This method shows methodological differences in approaches to forecasting, the foreign experience of using long-term forecasting technology is analyzed, its specificity and differences from traditional methods are reviewed, and it shows the beneficial effect of forecasting in determining the development directions of society and business. The innovative development of any country requires the formation of new methods of management and planning. In order to meet the requirements of innovative activity, this shows a serious need for changes in many areas of the country, especially in the higher education system, for the sake of development. The foresight system initially requires the creation of an economic base for training highly qualified professional personnel and scientists for the development of the country's economy. It will not be possible to move forward without forming an innovative economic base in higher education institutions, without developing new funding mechanisms, without solving the problem of financial provision of fundamental and applied scientific research. . Email: a.lanskih@vzfei.ru)

The whole world is experiencing economic problems and considering decisions on ways and methods of improving the appropriate performance of modern multifactorial forecasting models, which allow a comprehensive assessment of strategic alternatives in the face of an unstable external environment and lack of funding at the moment. "Technological foresight in foreign science and practice (git. foresight - vision of the future) is an assessment of the development directions of technology, including macro and micro levels, effective methodologies for forecasting socio-political processes, tools that allow forecasting, research that can give the greatest socio-economic effect and in order to determine the strategic directions of new technologies, systematic attempts to evaluate the long-term prospects of science, technology, economy and society, measures to systematically look at the distant future of science, technology, economy and society with reference to experts' surveys, and to create a methodology for long-term forecasting are being investigated. ( Kuklina I.R. Foresight as a tool for active research and formation of the future <http://viperson.ru/wind.php?ID=361988&soch=1>)

Forecasting-foresight methods are different and are based on appropriate methodological and practical, organizational principles in each country. Rich experience in this field has been accumulated in Japan, Great Britain and Germany. Studies in China, Korea, South Africa and Latin American countries are constantly being monitored. There are more than 60 programming projects in Colombia. It is possible to identify development trends using the Foresight method. In foreign practice, the methods used in the implementation of Foresight projects are shown:

- \*Forecast projects
- \*Literature review
- \*Brainstorming
- \*Scenarios
- \*Expert groups
- \*Workshops on futuristic assessments
- \*Situation analysis
- \*SWOT analysis

\*Critical technologies

Source: mon.gov.ru (site accessed on September 3, 2011)

Foresight methodology is also applied in Azerbaijan as a method that provides systematic forecasting that takes into account the factors determining development in science, education, economic and social fields. The methodological problems of increasing the role of forecasting in the system of strategic management of scientific-technical, innovation-technological, economic and social development of Azerbaijan are considered. Foresight of the future – Foresight methodology is characterized. Measures are proposed to include Forsite technologies in the activities of organizations dealing with strategic design and planning problems in the Republic. In the framework of the "State Program on Poverty Reduction and Sustainable Development in the Republic of Azerbaijan (2008-2015 years)", the corresponding tasks are reflected in a more complex and large-scale manner. One of the main elements in the system of long-term priorities is science, technology and innovation. (Farhad Panah oglu Rahmanov. "Problems of using the Foresight methodology for socio-economic development of Azerbaijan", August, 2015. Azerbaijan State University of Economics, professor)

While a number of developed economies maintain their leadership in high-value-added areas such as innovation centers, on the other hand, they lose their competitiveness over time in areas that are more sensitive to labor costs. Developing countries, especially Brazil, India and China, are showing interest in science-based production. New projects and ideas cannot turn into innovation and therefore competitive advantage without entrepreneurship. Note that innovation and entrepreneurship create economic value when they come together. It can be said that dynamic and young medium and small entrepreneurs who set innovation as their main goal can create added value and employment in the world more than large firms.

Currently, 25% of the slow and fast growing economies around the world are run by entrepreneurship. Innovation-based entrepreneurship is given great importance in countries that have placed innovation at the center of their policy. Open primary schools in order to change, creativity, starting innovation from elementary school; it is necessary to raise a generation of risk-takers, and lessons on entrepreneurship in the fields of engineering and science should be an integral part of education. For example, almost 3,000 students study entrepreneurship at Stanford University in the USA every year, which accelerates the process of technology transfer to the private sector. Infrastructural and financial needs of the entrepreneur can be met, as well as intellectual property protection, support and consulting services for setting up the company should be provided.

In strong public research organizations created in the 1940s, it is important to have administrative and technical human resources, specialized workforce educated at world standards. India has a 20% share in global pharmaceutical production with the development of technology as well as science and innovation. Almost 181 patents are granted each year and 41% of US patents are owned by India, and 41% of the revenue goes to researchers. Thus, the number of organizations created by Indians working in multinational companies has been increasing for the last six years, with more than a hundred belonging to the development and research center of the multinational company, which is also operating in India. Giant companies like General Electric, Texas Instruments, Cisco, Intel, IBM get their patents from the work of development and research centers in India.

F. Jansen, an American researcher, characterizes innovation as a highway that ensures the constant prosperity and growth of the company. He was able to develop the following TAMO model for the innovation trajectory (Figure 1):

Figure 1.1. The trajectory of innovation

New technologies	New types of goods and services (A)	Formation of new bases	Introduction of new organizational forms
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**Source:** [http://elibrary.bsu.az/yenii%5Ciqtisadkitablar%5C226\\_innovasiya.pdf](http://elibrary.bsu.az/yenii%5Ciqtisadkitablar%5C226_innovasiya.pdf)

According to a number of economists, the TAMO model can be extended by the addition of innovation (NR) focused on the development of human capital. ETT is implemented unevenly in many different scientific and technical directions in each region, field, and country. Some of them appear to be leaders in the locomotive of technical development, while others lose their positions by remaining in the shadows. The process of changing this leadership is mainly determined by the characteristics of technological development during technological revolutions. At this time, it would be good to look at the signs of technical development for the first half of the 21st century and the second half of the 20th century. (Table 1.1)

The IV stage of development began in 1928-1932, immediately after the financial crisis. Although previously this situation was of a military nature, after the 50th year it continued in a peaceful way - the development of EHM002Din, as well as the use of atomic energy, space exploration.

Already in the 70s, the crisis of technology and deep energy gave a great impetus to the V stage of development. The leading countries of this period included Japan, the USA, Northern Europe, as well as the former USSR. Already at the beginning of the XXI century, it seems that the V stage has ended.

The crisis of 2001-2002 was considered the first world information crisis. With this, the transition to the VI development stage began. According to the opinion of a number of experts, for this stage of development, this period would cover 30-50 years of the XXI century. Also, the post-industrial technological method of production will be able to change the technological image of our planet in the next 300 years.

**Table 1.1. Grading of technological development**

Technological development	IV	Nanotechnology, global information network, alternative energy sources	VI
Coverage period	1935- 1980	1981-2020	2021-2060
The main technical directions	EHM, atomic energy, rocket engines, space research, petrochemical	Microelectronics, Biotechnology informatics,	Nanotechnology

	industry	oil and gas industry, space technology	global information network, alternative energy sources
Dominated fields	Instrumentation, atomic engineering, radioelectronics, chemistry, telecommunications	Information and telecommunication technology, oil and gas and chemical industry	Nanomaterial production, biotechnology, alternative transport and hydrogen fuel
Leading countries	ABŞ, Yaponiya, SSRİ. Q.Avropa.	USA, Japan, USSR. W. Europe.	USA, North Europe, China, Japan, India, Brazil, Russia.

**Source:** [http://elibrary.bsu.az/yenii%5Ciqtisadkitablar%5C226\\_innovasiya.pdf](http://elibrary.bsu.az/yenii%5Ciqtisadkitablar%5C226_innovasiya.pdf)

The main scientific and technical direction of the fourth stage of development is mainly genetic engineering of animals and plants with biotechnical bases, nanotechnology, environmental safety, global information network, hydrogen, etc. the discovery of fuel forms the emergence of alternative types of transport such as electronic transport. Europe, USA, and Japan are the leading countries for this stage. Countries like India, China, Brazil, and Russia are considered the second group of countries.

Based on experience, we can say that developed countries were developing a national innovation system that was in line with their interests. In such situation, the creation and application of modern technology that can serve the development of the economy, as well as the implementation of scientific knowledge and many measures that can stimulate the organization of many new production processes, can be given more priority. That's why innovation is considered the main decisive factor in economic development, and its application brings about a number of serious changes in the economy, as well as in the field of science - the process of realizing the results of scientific research and the further improvement of technological processes, etc. can happen. The process of formation of the national innovation system is of great importance for the further optimization of inter-sectorial relations in the conditions of innovation and economic development. MIS is a complex of a number of different institutions (scientific institutions, firms, universities, etc.) that can participate in the processes of creation and dissemination of new technology in the DC. NIS is the main resource that can implement the country's innovation policy. It can be said that technological zones have a role for economic development based on individual emerging countries. However, the formation of NIS can lead to more effective results. Technological zones have proven themselves as the main element of this system. During the analysis, it can be said that small innovative enterprises can achieve more effective results when they operate in a single space. In this kind of activity, they make more contributions for economic development. We can conclude from the experiments that one of the main principles involved in the formation of the techno-park is the principle of a complex approach. Among many new types of innovation structures, especially scientific and technological parks stand out for their multi-functionality and variety of issues that can be solved.

The main objectives for the creation of techno parks are mentioned below:

- the process of turning inventions and knowledge into technology;
- the process of turning these technologies into commercial products, therefore, increasing the efficiency of national research expenditures;
- the process of transferring these technologies to the industry with the help of the small science-intensive entrepreneurship field;
- the formation of a number of science-intensive firms and the process of its formation in the market;
- the process of supporting many organizations in science-intensive business and rebuilding the structure of the industry;
- partial solution of the employment problem, rapid application of scientific and technical achievements in high technologies.

Basically, techno-parks are considered to be a science-production complex where an environment that is maximally favorable for the development of innovation organizations with medium and small science capacity can be formed, and techno parks deal with the process of transforming the results obtained from scientific activity into products, as well as organizing the process of putting them on the market.

Techno parks are the main driving force of the innovation economy in the world economy. The role of the noted techno park in the process of formation of a number of modern and new sectors in the national economy, as well as in their competitiveness, is great. China, USA, India, etc. these techno parks have taken an important place in order for other countries to be at the forefront of ICT in the world. Local government bodies initiated the creation of these technology parks (with the participation of the state). More than 75% of the necessary funds for the creation of techno park structures were covered by the state. Based on the world experience, we can say that the implementation of many conditions, such as state support, formation of the legislative framework, customs and tax concessions, training of personnel, is very important for the creation of technological parks. Currently, new projects are being implemented for the purpose of creating and developing technology parks in countries with different levels of development. The process of creating techno parks will be the main reason for the rapid development of ICT in the country.

The United States took the first step in this direction and it is still the leader in this field. Currently, 80% of the leading ICT companies started their activities from that technology park. According to the statistics of international scientific parks, there are more than 262 techno parks operating in the world. The main part of the techno-park concept is the idea of combining territorial scientific research and necessary capital for this. The aim of mentioned idea is to further increase the efficiency of the transfer of scientific and technical achievements from academic and other research centers to the industry, as well as to accelerate their assimilation. The analysis of the practices of creating techno parks in a number of foreign countries and the generalizations made in this field show that the correct selection of the model of the techno park considering the natural-economic resources and social-political realities, as well as the process of considering the degree of development in the innovation and scientific-technical potential of the specific region helps to solve many social and economic issues in the country in a more successful way. Taking this into account, it means that in Great Britain, USA, Europe (France, Germany, Finland, Spain), Belarus, Russia, Kazakhstan, Ukraine, China, India, Japan, Dubai, Turkey, etc. there is a need to analyze the experiences of creating and operating technological parks in countries such as

In the competitive battle between the countries of the world, which prioritize innovation and knowledge are winning currently. In the process of formation of economy based on knowledge and innovation, innovation infrastructure plays an important role. As for this, we can say that the development and implementation of the concept of innovation



infrastructure development in Azerbaijan can play a significant role in the process of forming a knowledge-based economy, in increasing the competitiveness of the economy, and in protecting the leadership status in the region. The dynamic development particular seen in our country recently has created fertile conditions for its realization. This creates an opportunity for ensuring the sustainability of the process, the process of integration into the world economic system, as well as the development of science-intensive industries, for the efficient use of existing resources. In order for this situation to be realized, first of all, the infrastructure should be prepared to allow the self-confirmation of the existing scientific potential. The role of innovation in the development of the economy in the republic is quite weak. If we look at the expenses for technological innovations in the countries of the world, we will see that the weight of funds allocated for technical innovations from the current budget for 2009 is reflected. Thus, according to the amount of funds allocated for technological innovations (0.8 million dollars), our country ranks last among the compared countries. Latvia and Estonia are ahead of our country in terms of the weight of these funds.

The innovation activity in the non-oil sector of the industry in the republic is currently low, and therefore it becomes impossible to enter the world market with this innovation activity. Therefore, it is important to further increase spending on innovation and science activities.

At the beginning of the XXI century one of the main factors affecting the development of society was ICT. In this development history of the society, three global socio-technical changes are manifested - industrial revolution, information revolution, agrarian change, Information revolution is realized as the information of social life with the application of modern information technologies and has now become one of the actual processes of today.

Several state programs, as well as laws and strategies, as well as laws and strategies have been adopted for this purpose in our country since it is considered important to create a legal and legal base for the ICT development process in the country,

**According to the Decree of the President of the Republic of Azerbaijan, the ICT National Strategy (2004-2011) was approved for the development of the republic.**

The main goal of the National Strategy is to create a transparent economic system with the wide use of ICT, as well as to help the democratic development of the country and also ensure the formation of the information society.

The following are the main tasks of the national strategy:

- creation of a legal base of the information society and its constant development;
- promoting the human factor, developing a number of service areas such as social security and medical services, creating favorable conditions for citizens to receive a quality education;
- creation of appropriate conditions for ensuring a number of rights of many social institutions and citizens, such as receiving and using information;
- realization of transparent, efficient and publicly controlled state administration, process and development of e-government, banking, trade, business formation;
- further increasing the social, economic and intellectual level of the country, building an economy based on information and knowledge, as well as being competitive, promoting the human factor, creating and developing the market of knowledge and information over time;

- preservation of the nation's history, its material and moral heritage, as well as promotion of progress in the world;
- formation of many developing information infrastructures, wide application of information and communication services, creation and formation of the national electronic information space;
- ensuring the information security of the country, as well as the population;
- the process of integration of the information society for the global e-information space;
- The process of development of production of ICT products, training of personnel who create national software tools over time;
- the process of eliminating the lag in digitalization in the country's economy.

At the end of the implementation of the program, the transparency of the state administration, the improvement of the living conditions of the population, the process of creating an institute for the civil society, the continuous achievement of economic revival, the formation of a unified electronic information space in our country, as well as the creation of opportunities for citizens to receive information and interests and national it is intended to be able to turn into separate parts of that global space formed by the mentality of the country's society.

**Decree of the President of the Republic of Azerbaijan for the approval of the program in the period of 2005-2009 on communication and information technology in the Azerbaijan Republic.**

The purpose of the adoption of the State Program is to ensure the development of communication and information technologies in the republic and in this way to act for the all-round development of the country, as well as to ensure the implementation of the National Strategy for ICT development, to plan and implement projects in accordance with the predetermined directions of action and goals.

In connection with the program, solving the following issues was of particular importance:

- for the purpose of improvement and development of the communication and information technology sector, the implementation of various reforms and the process of forming a number of mechanisms that are more efficient;
- Rapid integration and expansion of integration into the information space around the world, as well as provision of the ability of people, government bodies, economy, individuals and legal entities to easily connect to communication and information technology and the demand that grows over time;
- Establishment of information security system in the republic, organization of protection of information rights of citizens and security of information space;
- further improvement of the normative-legal base with the aim of ensuring the development of information technologies;
- Organization of IT certification, standardization, regulation of radio frequency and numbering resources in accordance with international standards;
- creating conditions for attracting investments over time in the field of information technologies, as well as the process of developing the private sector;
- Modernization of e-mail services and launching of many new services;

- the process of rendering services for satellite communication and radio-television broadcasting, which is even better with the application of modern electronic technologies and techniques;

- provision of wide use of new technology in education, many highly qualified personnel, as well as specialist training process for the field of information security;

- the process of conducting applied and theoretical scientific research that will ensure the process of determining the innovation policy and establishing the information society;

- Ensuring industrial development through ICT, further stimulating the production process of many local e-tools and constantly supporting the export potential;

- ensuring the production of electronic products on the basis of information technologies that can be freely and freely competitive;

- formation of state, field and public information systems, creation of various information systems, information networks;

The activities to be carried out in order to achieve the set goal are planned to be implemented in the following directions:

- conducting both structural and economic reforms on information technologies;

- Modernization in the field of information technologies, i.e. introduction of new technologies and equipment;

- creation of conditions for the preparation and implementation of many projects for a rapid transition to the information society.

When solving the mentioned issues, the following results will be obtained:

- the formation of Electronic government, which will allow the activity of state bodies to be more efficient and will provide a quality information service to the population, as well as to private institutions;

- organization of existing electronic document circulation in state bodies;

- provision of widespread use of modern technologies in local self-government and state administration;

AR President's Decree on the approval of the Regulation on the system for the circulation of e-documents between departments.

This regulation defines the rules for establishing, managing and using the system for the circulation of e-documents between departments. The system is organized by the administration of the President of the Republic of Azerbaijan, and the operator of the system is the Ministry of Defense of the Republic of Azerbaijan.

**Decree of the President of AR on a number of measures on the organization of the process of providing e-services by state bodies.**

The Regulation on the interdepartmental electronic document exchange system defines the rules for the creation, management and use of this system. The operator of the system is the Special State Security Service (SSSS), and the organizer is the Administration of the President of the Republic of Azerbaijan.

It is considered necessary to provide electronic services to the population with the main goal of ensuring modern and flexible management, the process of further increasing transparency in the activities of state bodies, and eliminating all situations that can create corrupt conditions. Based on this Decree, the central executive authorities must implement the following measures:

- a special section called e-service should be created in the information resources of the Internet in order to provide electronic services according to its powers;

- for the e-service section, the name of the service and the list of the documents required for its implementation, the placement of the electronic version of the document, and the free and unhindered use of the section by relevant persons should be ensured.

MCIT must ensure the creation of e-government for the period of 3 months to organize the use of e-services in state bodies based on the one-stop principle.

**Decree of the President of Azerbaijan Republic on the approval of the State program for the development of communication and information technology in the Azerbaijan Republic.**

The main goal of the program is to implement a number of tasks related to the National Strategy, to ensure the transition to the information society in our country, to form an economy that can be based on knowledge and information and produce competitive products and services, as well as to develop the ICT development process, as well as to ensure its wide application. creation of the necessary conditions, increasing the current efficiency of the state management system and expanding the opportunities for citizens and institutions to participate in decision-making, as well as ensuring that the society's demand for information and services is met at a high level.

In order to realize the goals set in the program, it is planned to solve many issues mentioned below:

- The process of developing the new ICT infrastructure in the country over time, as well as further expanding and improving the quality of information and communication services;

- implementation of ICT projects at each level of management, formation and development of state or non-state information systems and information resources;

- based on world standards, ensuring the integration of the state's information resources and information systems, further developing the protected multi-service network for the purpose of safe and reliable information exchange between state or non-state organizations, and the process of forming a suitable environment for the implementation of technological, organizational and technical measures ;

- in order to further increase the quality and efficiency of the services provided by the state body, as well as the efficiency of the management mechanism, the wide application of the e-government project, as well as the organization of e-services based on the one-stop shop principle;

- Implementation of ICT certification and standardization based on international experience;

- The process of increasing the quality of the specialist training process for the ICT specialty as much as possible, focusing on the training of many new qualified personnel;

- Development of ICT product production and services in the country, increase of competitive export potential over time;

- application of electronic technologies and techniques, further distribution and quality improvement of ICT services, as well as postal services and telecommunication services;

- the development of the implementation of many financial services, with the postal network as a tool;

- realization of policy on scientific methodical, scientific-technical and innovation in the direction of formation of information society;

- ensuring that the public supervises the work carried out for the formation of the information society;

### **Law of AR for e-document and e-signature.**

One of the state reforms, which are an impetus for the establishment of e-government and its development in Azerbaijan, is the law on electronic document and electronic signature. It defines the organization of the use of e-documents and electronic signatures, as well as their application in the electronic document cycle, as well as the legal bases and personal rights of the related subject, and regulates the relationship between them.

E-document and electronic signature can be used in all areas of activity where appropriate means have been applied except for the cases specified in the legislation of the Republic of Azerbaijan. Electronic documents can be used for informal and official correspondence, documents and information that create legal obligations and responsibilities.

**People's Computer Project** - This project, jointly implemented by the Ministry of Education of the Republic of Azerbaijan, RITN, Microsoft, HP and BestcompGroup, can be considered the initial stage of mass computerization in the country.

The main goal of the project is to provide the social strata of the population with a new generation computer and many licensed programs, to create conditions for obtaining a PC on favorable terms, as well as to eliminate the backlog by expanding the scope of ICT application in the regions. It is to support the development of E-government and information society in the country.

A pilot project was implemented that started in April 2008 and covered four months in the first stage. During this period, only teachers working in secondary schools were able to get computers. The next stage of this project was started after November 18 of that year. This stage also applies to secondary school teachers. The second phase of the project started in 2010. According to the terms of the signed agreement, in addition to teachers, students studying in secondary schools and teachers in higher education institutions and teachers were able to purchase licensed software and computers within the framework of the project.

### **State program for space industry formation and its development in AR.**

The purpose of the program is to form a space industry in the country and its development, to satisfy the demand of non-state and state structures for satellite communication, to meet the growing demand for mass media of the population living in the regions, to increase the number of international communication channels in the country, and to use space for social, economic, cultural, it is the process of developing scientific, security and other fields. To increase international cooperation in this field, to develop space industry techniques, to further strengthen the country's space industry potential, to organize new communication services, remote sensing of the earth, teleradio broadcasting, environmental monitoring, hydrometrology, research, emergency control, space search and rescue. the program will provide a broad perspective for the development of the field.

The development of the ICT field may require taking many practical measures to further increase the competitiveness of satellite networks, and in this regard, the following are considered relevant for the development of space industry complexes:

- increasing the personal commercial effectiveness of the satellites to be put into orbit and attracting new subscribers;
- multiband of satellite broadcasting and communication service and not intended for a wide audience;
- further improvement of the infrastructure of services provided by satellites;
- the prices of many services provided through satellites are affordable according to the population;
- the process of further expansion of the integration of satellite systems and terrestrial broadcasting services.

The following strategic objectives are expected in the program:

- the process of creating a new potential for high development in the future;
- the process of ensuring and strengthening information security at a high level in the republic;
- increase in the ability of non-state and state bodies to connect to satellite networks;
- further expansion of integration into the world information space;
- creation of conditions for attracting new investments in the space industry;
- meeting the communication needs of state power structures at a high level;
- providing the entire territory of the country with satellite communications, television and radio broadcasts;
- providing the ground for the country's participation in a number of international space programs;
- further acceleration of development in the space industry;
- training of high-level personnel in the space industry and satellite systems;
- organization of monitoring to ensure security in infrastructural objects of strategic importance for the state;
- space industry creation process and its development.

**Decree of the President of the Republic of Azerbaijan on the approval of the Regulation on e-government, as well as on measures taken to expand e-services.**

In order to organize the use of e-services of state bodies based on the one-window principle in the Republic of Azerbaijan, to improve e-government, to use these services widely, to further increase the efficiency of the work done in the organization of e-services, a series of e-services of state bodies to be organized According to the decree of the head of state No. 428 dated May 22, 2010 on measures, the Regulation on e-government was approved, and the draft of the State Program on the further expansion and development of e-services in the state body in 2012-2014 was prepared and submitted to the President of the Republic of Azerbaijan.

**Azerbaijan 2020: A forward-looking development concept.**

The development of ICT, ensuring the transition to the information society, the creation of an innovation-oriented economy, the further expansion of ICT application and e-services, as well as information security activities in each of the state bodies, and the society's demand for information services and products, full payment, export-oriented and competitive ICT capacity strengthening process, training of many scientific personnel and highly qualified specialists are among the main tasks ahead within the framework of the concept are mentioned in the concept.

The ICT infrastructure will be developed in the coming years, the possibilities of providing modern services to the population will be expanded, it will be possible to access broadband, high-quality and cheap internet in the country's rural settlements. New modern services such as e-commerce, distance education will be widely applied, and e-commerce transactions will form a legislation to ensure the safety and protection of their participants. The application of ICT will spread in the regions, the degree of integration of the republic into a global information environment, and the digital readiness of the population will be increased.

For the formation of e-government, a number of measures can be taken in a phased and consistent manner. ICT will be widely applied in state bodies, as well as secure exchange of information between state bodies based on a single infrastructure, provision of e-services by these bodies to the country's population, training of competent specialists and users, improvement of information security will be taken into account. Also, the quality of electronic services will be improved as much as possible, access to them will be provided through information kiosks, mobile communication and other modern means. Integration of state information systems and resources based on uniform technological standards will be ensured, and a uniform information space will be formed.

Over time, the focus will be on the process of stopping global cyber-attacks that may occur in the Internet traffic entering the Republic, as well as ensuring information security, protecting information processes, protecting information systems and resources of state bodies from threats, and expanding the process of awareness in the field of cyber security.

Staff training for ICT will also be developed. In order to meet the growing demand for scientific staff and highly qualified specialists, a suitable ground will be created for the close integration of education with innovation and scientific research in the higher schools of the republic, the relations with the leading educational institutions located in the world will be further expanded, and at the same time, an effective way to prevent brain drain from the country will be created.

**Conclusion:** At the end of the research, the practice of carrying out innovation in enterprises can show that innovative organizations can face a number of external and internal obstacles that are interconnected at the beginning of their activities. Internal barriers may include scientific and technical limitations for technology adoption and innovation, and severe lack of funding. The external obstacle can be attributed to the resistance of the market to innovation explained by economic and psychological factors, the counter reaction provided by the sales and financial network of competitors, as well as the difficult nuances existing in the copyright protection process. In this context, the state support of the innovative organizations, the serious many tax concessions applied in the activities of the HTP (high technological park), as well as the results of a number of other regulatory measures in the future will be able to show the effectiveness of these measures that the country can take in this direction. On the other hand, the use of science-intensive technologies has given impetus to the formation of innovation-oriented economic development, which is the newest direction of economic development. The innovation-oriented model of economic development based its efficiency on the example of developed countries.

Activity with the possibilities that the Internet environment provides to both consumers and businesses. It has made it possible for users to get a more flexible, rich and fast content and for their size to grow regularly. Especially small and medium-sized enterprises, the Internet, with the "same opportunities" it provides, such enterprises Its actions also create conditions for taking a comfortable place in global markets in the same way as large companies. Internet marketing, customer-oriented business, product marketing with a buyer attitude that will take into account the buyer's wishes and needs more and collect more information about the buyer It strengthens the power and provides the power. On the other hand, with the low cost it provides, it creates the basis for the reduction of the price level of the companies. It contributes to restoring competitive advantages. In addition, the ease of global communication brought about by the Internet environment, the universal size of buyers for companies. Online distribution of certain products in order to provide access and services. It is also possible to make the distribution function more effective and productive. provides money. On the other hand, with relatively low costs and global dimensions compared to the traditional sale of companies. The Internet environment provided the companies with the opportunity to present Among other advantages, he gets a job. In this case, marketing activities through the Internet, from creating a suitable condition for sales and consumption, web site. chrono until the construction of It has been dealt with logically.

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