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**Innovative infrastructure of industry and its role
in ensuring sustainable development**

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Abstract

Innovation infrastructure is a complete system of subsystems (elements). In this system, mutual relationships between elements and basic production are ensured. Different research has differentiated approach to the distribution of subsystems of innovation infrastructure. The broadest approach is that the majority of organizations supporting the development of innovation activities are subdivided into 5 subsystems.

Also the main factors are objects of Innovation Infrastructure. Techno parks are the key elements of the entrepreneurship support infrastructure. Today, techno parks have no definite definition. As a technology park, the development of innovation activity is a specialized scientific-production complex of small and medium-sized enterprises, which creates favorable conditions for the provision of equipment, financial and personnel assistance.

The role of innovation for sustainable development Innovation infrastructure is the innovation activity that can be implemented, including the provision of innovation activities, services for the creation and implementation of innovative products. Also a big role of Innovative Infrastructure in the Development of Small and Medium Entrepreneurship. The concept of regional SMEs policies has highlighted regional economics and its relevance to the regional innovation system, and the growing relevance of regional innovation. This approach will allow SMEs to look at innovation in the context of mutual communication systems between start and end of innovations.

Also in this work was done research of Influence of the industry's innovation infrastructure on sustainable development in Azerbaijan. In order to form a national innovation infrastructure, it is important to initially formulate and co-ordinate regional innovation infrastructure.

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1. Introduction

1.1 Background of Study

Innovation is one of the foundations of practical improvement of the national economy, as developments in the mechanical division make the nation's economy increasingly steady. Advancement framework is a key framework that guarantees long haul aggressiveness of the national economy, high innovation arrangement of the economy, the improvement of imaginative enterprises and the state's development approach. With the developing job of the local foundation angle in the manageable improvement of the economy, the monetary advantages of the areas and its broad use make the institutional, infrastructural, managerial and hierarchical help components progressively dynamic in achieving propelled dimensions of financial advancement. To illuminate the job of advancement foundation in growing national monetary improvement, particularly in the modern segment, business enterprise subjects need to clear up their aggressiveness and development potential, to be specific, advancement focal points.

For more development of innovative infrastructure of industry we also use Regional development (innovation) centers, Innovative Development Areas (FIEZ), Special economic zones, Entrepreneurship support centers, Microfinance of organizations.

1.2 Purpose of the study

The purpose of the study is to development of the industry's innovative infrastructure and its shaping. Mainly to develop the role of innovation infrastructure and its elements in the economic system. To define the perspective role of innovation infrastructure in ensuring the sustainability of the Azerbaijani economy. In this research, mainly is used extensive international experience and studied this experience in the Azerbaijani industry. The use of modern technologies in infrastructure and innovations and to develop their positive aspects.

1.3 Research Questions

To understand Innovative infrastructure of industry and its role, In my research I want to show you answers of these questions:

1. Determination Innovation infrastructure and its role in ensuring Sustainable Development.
2. Innovation infrastructure and its theoretical and methodological aspects
3. Sustainable Development and its key goals
4. Identify of the role of innovation process for sustainable development.
5. Study of Impact of the industry's innovation infrastructure on sustainable development in Azerbaijan.

1.4 Significance of the Study

My research is the role of a robust development of the industry's innovative infrastructure and its element and objects. I have mainly developed the role of innovation infrastructure and its impact to economic system. I define the perspective role of innovation infrastructure as we know the modern era request high technology in ensuring the sustainability of the Azerbaijani economy. In my research, I have been using extensive international experience and studied this experience in the Azerbaijani industry. In this case, the country will become stronger and be close to sustainable economic development targets.

2: Theoretical Analysis of Study

2.1 Theoretical and methodological aspects and structure of Innovation Infrastructure.

The key function of the innovation infrastructure is to assist the resettlement of resources needed for the innovation process. The experience of foreign countries shows that the share of high technology production in the world market depends on the level of development of the innovation infrastructure.

Innovation infrastructure is the innovation activity that can be implemented, including the provision of innovative services, services for the creation and implementation of innovation products.

Through these structures, innovation programs are being developed to support and provide a comprehensive service for the subjects. To look at the content, creation and functioning of the innovation infrastructure, we need to look at the infrastructure as an economic category.

The concept of "infrastructure" was taken from military lexicon at the beginning of the twentieth century. The basis of the word "Infrastructure" is the combination of the words "info" (lower) and "structure" in Latin. In the '40s of the twentieth century, the concept of "infrastructure" began to be used as a term in the economy. For the first time in the western countries, industrial and agricultural production, which serves the field economic complexes. According to economists in Western countries, the basic needs of the infrastructure population and entrepreneurship in economic fields is a complex of general conditions. On the other hand, some economists show that this term was first used by US economist P. Rosenstein Rodn in 1955. The concept of "infrastructure" has been disclosed differently by different economists. (P.Rozenstein Rodn, 1955)

These disclosures are given in Table 1.

Table 1: The concept of "infrastructure"

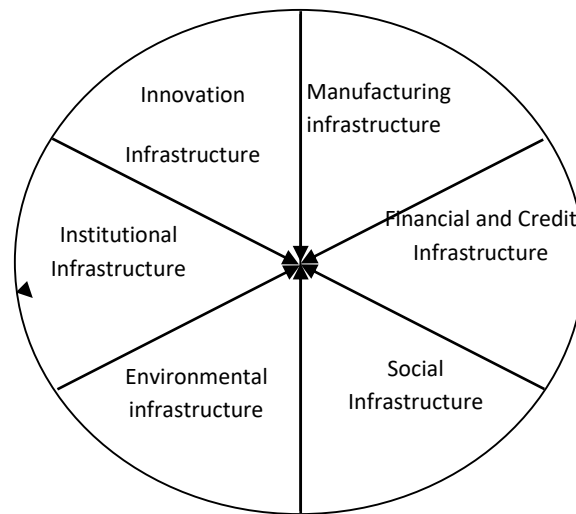
R. Iohimsen	Infrastructure is a set of material, institutional and individual conditions that are in the disposal of a single entity and which has the appropriate adjustments to the income associated with the equal productivity of the factors. (R. Iohimsen,2015)
C.F.Rey	Infrastructure is the service needed to create a modern economy. (C.F.Rey, 1930)
	Infrastructure is a complex of engineering-technical, facilities, facilities that provide uninterrupted load, energy, information flow in a given area, etc. it is the material and technical condition that the activity of modern economic facilities is impossible without it.
V.N.Stakhanov	Infrastructure is a complex of specific labor processes in the production of services that provides the exchange of activity in public and industry. (V.N.Stakhanov,1993)

As you can see, there is no single view of the concept of "infrastructure". On the other hand, each approach characterizes the role and place of the infrastructure in modern economic relations and demands to the national innovation system.

This system should help to increase the degree of innovation preparedness of the enterprise in the development and implementation of innovation reform and implementation programs.

Thus, in a market economy, the infrastructure objective is a typical (specific) system of interrelated institutions, which creates general conditions for the functioning of economic entities in different markets. Infrastructure overview allows it to be regarded as a complex of institutional, innovation, finance-credit, manufacturing, commercial, and information, environmental and social infrastructure (Figure1.1).

Figure 1. Classification of Infrastructure



Source: Torrisi, Gianpiero "Public infrastructure: definition, classification and measurement issues" (2009)

Creation of the key infrastructure of innovation infrastructure is in the 1950s. Thus, the first object of the innovative infrastructure can be considered when the Stanford Research (Science) Park was established in 1951 in the United States, California. From then on, the process of forming such centers in many advanced industrial and technological centers of the world began. The university administration began to lease non-used facilities to small-scale enterprises operating in the high-tech field, which began to shape the implementation of innovative ideas. The main objective of this center was to support the innovation activities of the American government in innovative areas in the field of defense industry, and this was the primary infrastructure of university and state's innovative activity. Thanks to the university proximity of entrepreneurs and technology companies, the development of innovation infrastructure has faster. Thus, since its inception, the Stanford technology park has become a key ingredient innovation infrastructure that has led to the formation of a similar infrastructure in these countries by encouraging innovative collaboration of industry entrepreneurs in research in many countries. Innovative infrastructure facilities - science and research parks and technology parks - have

opened new opportunities to ensure world-class science and technology advancements, with the advent of innovation infrastructure in the United States, Japan development has become one of the priorities of the state.

From the beginning of the 21st century innovation has become one of the key aspects of the industrial and economic development policy in Western countries. The policy agenda in the most advanced economies includes programs that help companies to increase their innovation capabilities to create different products and services at all times. As a general rule, this institutional trend is supported by traditional innovation innovations such as the ability to sustain long-term sustainability of companies. American economist Michael Porter (1990) summarizes the experience of more advanced people in the 21st century. In his view, the most important outcomes are: the first, the national heritage, the need to create it; secondly, the competitiveness of countries and regions is determined by the more effective use of them. M.Porter demonstrated that US entrepreneurship competitiveness is related to the availability of cluster-based regional and local innovation systems. It was particularly noted in areas such as Massachusetts and California, where new economic sectors such as biotechnology and information and communication technologies (ICTs) were formed, and areas where innovation activity was high in Hollywood, Los Angeles, and New York, such as Silicon Alley (M.Porter, 1990)

From the set of ideas it is possible to conclude that the infrastructure is an economic category. This is also part of the "innovation infrastructure". There is no single description of the "innovation infrastructure" as the concept of "infrastructure". Table 2 presents various explanations for the concept of "innovation infrastructure". In our opinion, the approach that separates any stage of innovation processes is poor because the innovation infrastructure has a broader function.

Table: 2 Explanations for the concept of "innovation infrastructure"

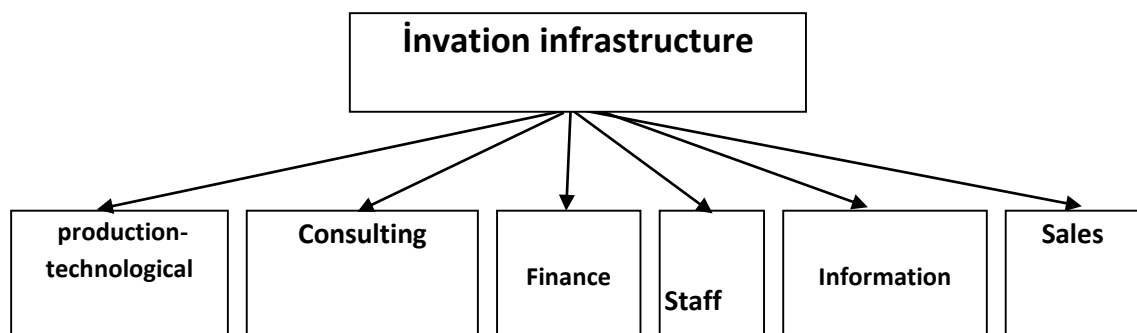
	Infrastructure is a complex of basic structures that support daily life and economic activity in society. It
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World Bank	involves roads, electricity, water, communications, and public transportation.
RDAU-MKTA Area agrarian business incubator portal	The new infrastructure is a diverse range of interconnected and complementary organizations and full-technological science development, various legal forms provided through the implementation of this innovation process as well as their interconnected systems.
Novokuznetsk Institute (branch) portal	Innovation infrastructure is a set of objects designed to regulate innovation and relationships between them, to create new knowledge and innovation, to provide their new products and services in market conditions.
V.S.Popov	Innovation infrastructure is a series of economic and technological entities and their relationships that accelerate the transformation of research results and new knowledge into knowledgeable products and services and is a factor that promotes the competitiveness of domestic producers in the world market.(V.S.Popov,2013)
Databank of information technology of the Republic of Bashkortostan	Innovation infrastructure - a set of innovative activity objects and interconnections that enable them to create new knowledge and innovation, transforming them into new products and services, as well as their market share and demand.

Innovation infrastructure is a complete system of subsystems (elements). In this system, mutual relationships between elements and basic production are ensured. Different research has differentiated approach to the distribution of subsystems of innovation infrastructure. The broadest approach is that the majority of organizations

supporting the development of innovation activities are subdivided into 5 subsystems. According to Q. Shepelyev's theory, organizations can be subdivided into six subsystems for services provided to innovation subjects (Figure 2). (Q. Shepelyev,2004)

Figure 2. Innovation infrastructure structure



Source: S.Viktorovna “Innovation infrastructure in the region: problems and directions of development” (2014)

2.2 Innovative infrastructure of the industry and its elements

2.1.1. Production-technological infrastructure

Experimental and experimental bases of research.

Production-technological infrastructure creates conditions for access to production facilities. Here are technology parks (TP) and innovation technology centers (ITCs) that provide access to production areas and innovation - technology complexes that provide access to production facilities:

- production and technological composition of technopark and innovation-technological centers;
- innovation-industrial complexes;
- technological clusters;
- technical application zones;
- centers of collective use of high-tech equipment;
- Business incubators, the center of transfer technologies.

2. Consulting infrastructure

This bloc of infrastructure facilities includes consulting organizations. The importance of these structures for innovation activities is that innovation has many specific features. The study of these features is only possible through practical experience. Small innovative enterprises (SMEs) created by "non-professional" managers are often abolished.

This structure includes institutions dealing with intellectual property, standardization and advice. Consolidation includes:

- technology transfer center;
 - consulting in the field of economics and finance;
- technological consulting;
- marketing consulting;
- Consulting in foreign economic activity.

3. Financial infrastructure

Financial infrastructure is one of the key conditions for attracting investment into innovation activities and its efficient utilization.

Livelier discussions on this group of Innovative Infrastructure Entities are structures that enable the innovation enterprise to access financial resources (both large and small).

Scientific organizations interact with innovation infrastructure objects or create innovative infrastructure in their structures. This includes:

- Budgetary funds;
- Venture funds;

- Entrepreneurship support funds;
- Budget and non-budget funds of technological development;
- Banks;
- Microfinance organizations;
- Science support funds.

4. Staff preparation infrastructure

Staff training infrastructure provides innovative knowledge and ideas with specific knowledge. It is necessary to provide balanced staff training in all areas that provide innovative activity for the development of the personnel training system. Nevertheless, as the main problem, it should be noted that currently most enterprises in the industrial sector (both large and small) do not have the right professionals to market the enterprises productively. Therefore, issues of increasing the level of personnel in the field of innovation and the preparation of experts in the field of technological and scientific management remain relevant.

5. Information infrastructure

This block of innovation support infrastructure is linked to access to information. There is a network of well-diversified organizations consisting of the regional system of state scientific-technical information centers, structures supporting small business, and regional information networks. Large volumes of innovation issues should be posted online. This includes:

- State scientific and technical information system;
- Stocks of support for small businesses;
- Information networks;
- Internet.

6. Sales infrastructure

Provides the progress of the innovation product in the market by the manufacturer. The classic methods of product promotion require participation in the exhibition, as well as the use of new methods, along with the Internet. Includes:

- Foreign trade associations;
- Specialized intermediary firms;

- Internet;
- Exhibitions.

The classification given is not perfect. Some authors also add other subsystems to the infrastructure, depending on the purpose of the study. The objects of the innovation infrastructure are created, encouraged and supported within the state innovation policy. These objects are the focus of the state.

By summarizing the foregoing, we can conclude that the concept of "innovation infrastructure" is basically a collection of organizations involved in ensuring the innovational process. In many cases, innovation infrastructure is viewed as technological subsystems. However, the network of organizations serving science-building products is wider and includes financial, information, legal, etc. including organizations of the field.

2.2 Objects of Innovation Infrastructure

Production and technological infrastructure facilities

Technoparks are the key elements of the entrepreneurship support infrastructure. Today, technoparks have no definite definition. As a technology park, the development of innovation activity is a specialized scientific-production complex of small and medium-sized enterprises, which creates favorable conditions for the provision of equipment, financial and personnel assistance. In Azerbaijan, the concept of "Techno Park" is used for larger objects: for example, production yards, research centers and even office centers.

Technopark can be a legal entity or a structural subdivision of a higher school, a scientific center or organization, a production facility.

The main purpose of the technopark is to create a favorable environment for the development of resident companies and to promote the development of science and technology, innovation. Techno-park services use small and medium-sized innovation enterprises that have commercial knowledge of their scientific knowledge. Technoparks can also incorporate innovative industrial and technological infrastructure facilities with resident companies, such as business incubators, transfer

technologies, centers, engineering centers, and collective use centers. Firas Thalji “The Planning and Design of Science and Technology Parks” (2005)

Business incubators are a small enterprise support institution in the early stages of development (start-up).

Business incubators provide complex services. Subject: provision of premises (by territory) on favorable terms, office equipment and communications provision services, legal and juridical services, etc.

Business incubators resident entrepreneurs, small businesses, individual entrepreneurs. They are selected through the competition.

Here are some other types of business incubators:

- Classical - enterprises are united by their dependency on business circles.
- Special - specialize in exact area.
- Virtual does not have a rental area and offers remote services.

Innovation-business incubators are focused on supporting innovation projects.

Transfer Technology Center (TTM) - is a freelance person or a structural unit of a high school, scientific organization, and industrial enterprise. TTM's core activity is the commercialization of technological know-how, which is a result of research, development, innovation activities.

TTM plays a leading role in the national innovation system. It accelerates the application of science to the industry, primarily through the use of budgetary funds. The main objective of TTM is the commercialization of scientific organizations and higher education institutions. In order to achieve this, TTM implements the functions of design and maintenance of scientific and technical activities, search of their users, provision of consulting, economic, marketing and foreign economic activities. He is presenting scientific and technical works at all stages.

Collective use centers (KIM) are a scientific-organizational structure with a modern equipment base, highly qualified personnel.

Scientific, teaching, etc., without equipment base for research, measurement and practice. Provide enterprises with necessary equipment and staff. The main purpose of the creation of the KIM is to provide users with a unique equipment base,

software complex, training of top-level employees, and service of students, masters and doctoral students in scientific researches.

Engineering Centers provide engineering consultancy services for engineering services, production and service delivery processes.

Included in the complex of engineering services:

- technical studies and services related to preparation for production processes; preparation of technical issues and feasibility studies for the design of pre-project works, scientific researches, construction of industrial and other facilities, technical documentation development, design and construction of technical and technological facilities, services during installation and commissioning, etc. special services (e.g. environmental problems analysis, etc.);

- general technical assistance that provides the optimal production process in the facility, author's review of consultancy and equipment, advice on economic and financial issues, marketing research, research on information security systems, and so on.

There are other types of engineering centers, for example, design centers, engineering calculations center and so on.

2.2.1. Regional development (innovation) centers

The purpose of Regional Development Centers (RIM) activities is to create conditions for the effective interaction of participating enterprises in one area and to ensure implementation of joint local projects. Participating companies include: educational and scientific institutions, public and private organizations, state and local authorities, investors interested in developing their fields, etc.

The RIM base provides a continuing consultation and service system for participants in the area. They focus on providing information services for investors and innovators in the legislative framework, as well as support for newly created and emerging small and medium-sized businesses.

Innovative Development Areas (FIEZ) - is the territory of one or more educational institutions with state-owned, legal, organizational and economic

economics, which is subject to the activation of innovation activities, the formation and strengthening of scientific, technical and innovation potential of the state.

The main focus of such areas is to transform the local economy into an innovative way of utilizing the benefits of science and technology to ensure economic development. One of the key factors in increasing the economic development and competitiveness of the IRA is the inter-sectoral interaction between science, education and industry.

Special economic zones are the areas of special jurisdiction and economic concessions by the state to attract local and foreign investors to priority areas for the country. These zones are created for the development of the economy, high technological fields, and new types of production, transport infrastructure, tourism and recreation.

Residents of Special Economic Zones (SEZ) are high-tech products.

On the other hand, residents may carry out activities that take into consideration the agreement at SEZ.

The following mechanisms can be used to achieve XSI release:

- Creation of SEZ infrastructure through budget investment (engineer, customs, business, transport and logistics)
- Providing tax incentives; reduction of taxes on income and insurance payments; property, land and transport taxes
- provision of custom customs regimes with the establishment of free customs zones on the territory of SEZ;
- preferential land regulation; preferential rental, purchase of land plots;
- Ability to apply accelerated vaccination.

Creation of SEZs provides favorable conditions for the establishment of innovation infrastructure for small and medium entrepreneurship support (technoparks, incubators, scientific centers).

2.2.2. Information and advisory infrastructure, small and medium entrepreneurship support centers (funds)

Entrepreneurship support centers. It is a legal entity created to provide complex services aimed at supporting the development of small and medium entrepreneurship entities.

Center's services include: finance, marketing, patent-licensing, legal, entrepreneurship information, innovation products, certification of works and services, personnel selection, seminars, conferences, forums, organization and implementation of special education programs.

There are other state and other foundations besides the Entrepreneurship Support Centers. These funds are the elements of financial infrastructure.

Information Centers. Information Centers, scientific and technical information institutions are established to support innovation business information.

The duties of these centers are as follows: establishment of scientific and technical information banks; collection and processing of information on scientific and technical achievements; analytical, marketing and other research; creation, deployment and promotion of advertisements; patent-information services; co-operation with foreign non-profit organizations on the evolution of scientific, technical and commercial information; organization of scientific-technical, commercial exhibitions, fairs; new technology, industrial product, information, product and service delivery according to consumer requirements; to assist in the search for foreign partners; transfer of knowledge, technology and knowledge; expansion of technological cooperation.

Centers can provide the following services:

- Searching for business partners;
- organization of participation in local and foreign exhibitions and fairs;
- giving advice;
- placement of proposals in international and local database;
- presentation of products and services;
- organization and teaching of seminars and educational programs;
- International marketing.

2.2.3. Financial Infrastructure Objects

Venture fund. Venture financing is a highly risky investment to generate revenue from the development and expansion of the innovation industry.

Unlike the start-up stage of the innovation venture, Venture financing is initiated by the company when it first starts to generate revenue, in other words, at the initial stage of development and expansion.

Venture financing basically involves Venture funds and business ventures (individuals who are ready to place their own funds in innovation projects). The venture capital stock is invested and managed by the venture company. The management company is created in the organizational-legal form of the closed-type joint-stock fund.

The main features of Venture Investment are:

- Active involvement of a team of professional vendors (experts) in increasing the price of the company's portfolio;
- Involvement of the investment is carried out by means of conversion of the company's charter capital or debt;
- The company is in the future in the interest of investors.
- The investment strategy is medium-term and long-term.
- The ultimate goal of venture investment is to generate revenues through sales of assets to strategic or portfolio investors or by selling shares of the companies.

Entrepreneurship Support Funds are designed to fund entrepreneurship programs, project-related activities.

The main activities of the Entrepreneurship Support Fund are as follows:

- Implementation of the microfinance program;
- issuance of preferential securities;
- contract loan and leasing;
- Supporting entrepreneurs' advice and information;
- Providing assistance to entrepreneurs within the boundaries of development programs.

Microfinance of organizations. Microfinance activities include providing financial services (cash, transfer, repayment, repayment of debts) in large amounts.

Microcredit is an integral part of microfinance and is a small amount of loans and loans short-term.

Organization Microfinance Organization (TMT) - is a microfinance organization whose main activity is the microfinance organization.

Unlike banks TMT solves the problems of financial services in other two aspects: 1) territorial (due to insufficient development of financial infrastructure); 2) technological (failure to meet the requirements of certain groups of financial services).

TMT's role is both economic and social.

The economy is because citizens with financial instruments fill our empty shelves. It is social because it provides people with no access to loans, borrowing, supporting businessmen who start and operate without a bank transfer.

TTM key users include other groups: small enterprises, individual entrepreneurs, poor rural population.

The Scientific and Technological Development Fund is a state non-profit organization.

The main functions of the Fund include:

- state policy of development and support of scientific and technical field;
- providing direct financial, information and other assistance to innovation organizations engaged in the development of new types of science-intensive products and technologies;
- creation and development of infrastructure for innovation entrepreneurship;
- helping to create new jobs for the efficient use of scientific and technical potential;
- Involvement of non-budget investment in innovation;
- Creation of personnel (innovation activity involving youth)

The creation and development of high technology companies should focus on commercialization of scientific and technical performance, attracting investment in innovation, and creating new jobs.

Participation of Innovation Enterprises in Fund Programs enables the creation of a sustainable business idea of the scientific idea involving investors.

Innovative projects should undergo expertise on scientific and technical innovation, financial and economic basis, prospects for product sales.

2.3 Role of innovation infrastructure in modern economic system and its mechanism of action.

Innovation infrastructure is one of the cornerstones of sustainable development of the national economy, as innovations in the industrial sector make the country's economy more stable. Innovation infrastructure is a key system that ensures long-term competitiveness of the national economy, high technology provision of the economy, the development of innovative industries and the state's innovation policy. With the growing role of the regional infrastructure aspect in the sustainable development of the economy, the economic benefits of the regions and its extensive use make the institutional, infrastructural, administrative and organizational support mechanisms more active in reaching advanced levels of economic development. To clarify the role of innovation infrastructure in expanding national economic development, especially in the industrial sector, entrepreneurship subjects need to clarify their competitiveness and innovation potential, namely, innovation advantages.

Entrepreneurs, in particular industrial sector entrepreneurs, play an important role in ensuring economic growth by creating more productive economies with more efficient and more innovative production methods. Industrial firms are collaborating with other industry firms to innovate or develop their system by adopting their innovations.

Innovation in the industry ensures systematic development and deepening of knowledge in the commercial context. Scientific research work in the national innovation system is carried out by universities and research institutes, and research and development activities are often carried out by industry firms. The main difference here is that, unlike universities and research institutes, private companies have important tasks such as earnings for their shareholders in research and development. Depending on the level of innovation in industry, in particular, the development of the resource utilization system may change priorities in the national economy

The main trends in each of the key elements of the innovation infrastructure are interconnection between innovation and the production process, and some of them can be viewed in the mechanism of action.

Science parks are components of the foundation of the worldwide "learning economy". They give areas that cultivate advancement and the improvement and commercialization of innovation and where governments, colleges and privately owned businesses may work together. The designers work in fields, for example, data innovation, pharmaceuticals, science and building. Science parks may likewise offer various shared assets, for example, hatcheries, projects and coordinated effort exercise, uninterruptible power supply, broadcast communications centers, gathering and security, the executives workplaces, bank workplaces, conference hall, stopping, and inner transportation. Science stops likewise plan to unite individuals who help the designers of innovation to convey their work to business realization, for instance, specialists in licensed innovation law.

Science parks contrast from high innovation business regions in that they are increasingly sorted out, arranged, and oversaw. They contrast from science focuses in that they lead to popularized items from research. They vary from mechanical parks which center around assembling and from business parks which center around organization.

Science parks are discovered around the world. They are most basic in created nations. In North America there are more than 170 science parks. For instance, during the 1980s, North Carolina State University, Raleigh needed space. New conceivable

destinations incorporated the state psychological wellbeing property and the Diocese of Raleigh property on 1,000 sections of land (4.0 km²) encompassing the Lake Raleigh Reservoir. The college's Centennial Campus was created. Sandia Science and Technology Park, NASA Research Park at Ames and the East Tennessee Technology Park at Oak Ridge National Laboratory are instances of research stops that have been created by or neighboring US Federal government labs. Science and innovation park (STP) action over the European Union has around multiplied in the course of the last 1112 years, driven by the development of the more drawn out standing parks and the rise of new stops. There are presently an expected 366 STPs in the EU part expresses that oversee around 28 million of finished structure floor space, facilitating around 40,000 associations that utilize roughly 750,000 individuals, generally in high esteem included occupations. In the period from 2000 2012, complete capital speculation into EU STPs was around €11.7 billion (focal gauge). Amid a similar period, STPs spent around €3 billion on the expert business backing and advancement administrations they either convey or money to help both their occupants and other comparative information based organizations in their territory.

Business hatcheries contrast from research and innovation stops in their commitment to startup and beginning period organizations. Research and innovation parks, then again, will in general be expansive scale extends that house everything from corporate, government or college labs to exceptionally little organizations. Most research and innovation parks don't offer business help administrations, which are the sign of a business hatching program. In any case, many research and innovation parks house hatching programs. Since new businesses need numerous assets, experience and systems, hatcheries give administrations which encourages them get past beginning obstacles in beginning up a business. These obstacles incorporate space, financing, lawful, bookkeeping, PC administrations and different essentials to maintaining the business.

- ❖ High-speed Internet get to
- ❖ book keeping/monetary administration
- ❖ Access to bank credits, advance assets and assurance programs

- ❖ Help with introduction aptitudes
- ❖ Links to advanced education assets
- ❖ Links to vital accomplices
- ❖ Comprehensive business preparing programs
- ❖ Advisory sheets and tutors
- ❖ Intellectual property the executives

The term business bunch, otherwise called an industry group, focused group, or Porterian bunch, was presented and promoted by Michael Porter in *The Competitive Advantage of Nations* (1990). The significance of monetary geology, or all the more accurately geological financial aspects, was likewise conveyed to consideration by Paul Krugman in *Geography and Trade* (1991). Group improvement has since turned into a concentration for some, administration programs. The basic idea, which market analysts have alluded to as agglomeration economies, goes back to 1890, and crafted by A.Marshall.

Michael Porter cases that groups can possibly influence rivalry in three different ways: by expanding the efficiency of the organizations in the bunch, by driving advancement in the field, and by invigorating new organizations in the field. As per Porter, in the cutting edge worldwide economy, relative preferred standpoint—how certain areas have extraordinary blessings (i.e., harbor, shabby work) to conquer substantial information costs—is less significant. Presently, upper hand—how organizations utilize inputs, requiring ceaseless development—is more important. Porter contends that financial exercises are implanted in social exercises; that social paste ties groups together'. This is upheld by late research demonstrating that especially in provincial and rustic territories, essentially more advancement happens in networks which have more grounded between close to home systems.

Geographical group – as expressed above for example the California wine group or the blossom bunch among Rotterdam and Amsterdam in the Netherlands

- **Sectoral groups** (a bunch of organizations working together from inside a similar business area for example marine (south east England; Cowes and now Solent) and photonics (Aston Science Park, Birmingham))

- **Horizontal bunch** (interconnections between organizations at a sharing of assets level for example learning the executives)

- **Vertical bunch** (for example an inventory network group)

It is likewise expected – especially in the German model of authoritative systems – that interconnected organizations must communicate and have firm activities inside something like two separate dimensions of the associations concerned.

3. THE ROLE OF INNOVATIVE ACTIVITY AND INFRASTRUCTURE IN THE INDUSTRY IN CONTRIBUTING TO SUSTAINABLE ECONOMIC DEVELOPMENT.

3.1 SUSTAINABLE DEVELOPMENT AND ITS KEY GOALS

Currently, the concepts of "sustainability" and "sustainable development" are used in various fields of knowledge and social life. It should be noted that the reasons for such a wide use of these concepts are due not so much to their universality, but to the lack of development of concepts of sustainable development, their inconsistency, as well as shortcomings of relevant information for quantifying the degree of sustainability or instability of the development process and, accordingly, the adoption of optimal managerial making.

Thus, the term “sustainability” should be applied not only to development, but also to functioning. Studies show that sustainable development cannot be achieved without the sustainable functioning of the system. The lack of sustainability of operation leads to the fact that as a result of disruptions, the urban system is constantly thrown back in one direction or another, thereby not creating opportunities for a permanent change in the quality of the system towards its improvement, that is, for sustainable development. Sustainable development involves continuous change (improvement) in the quality of the territorial system, which includes various aspects

- economic, social, and environmental. Sustainable functioning is associated with maintaining for a long time the achieved level of the socio-economic system.

The basis for the formation of a new stage of economic development is a fundamental change in the technological mode of production, approaches to the use of production factors, the nature of the relationship of people during production, their relationship to technology and nature. The main way of this phenomenon is the transition from resource-intensive to resource-saving, high-tech, high-performance technologies, and a deep restructuring of the economy. For the stage of development of market relations, the fact of the economic dominance is primarily characteristic of material production, and then the consistent development of intangible sectors of the economy.

In economically developed countries, 80–95% of the growth in gross domestic product (GDP) is achieved through scientific and technological advances. Therefore, in these countries, the introduction of new technologies has become a key factor in market competition, the main means of improving production efficiency and improving the quality of goods and services.

In an environment where the country's competitiveness in world markets is based less and less on traditional factors and more and more on those activities that are based on the results of scientific and technological progress, it becomes common practice for governments to not only support basic research, but even development of innovation in industry.

In general, the requirements for high-quality economic policy, its scientific and methodological justification have increased dramatically. Focusing on effective results, concentrating resources on truly priority sectors and areas, giving an undoubted and quick result, significantly enhancing the stability of the national currency.

The insufficient development of some aspects of determining the effectiveness of innovation activities and the formation of an economic mechanism for the operation of metallurgical enterprises, whose activities are based on innovative developments,

makes it possible to conduct in-depth research and determine the scientific and practical value of the problem.

An increasing part of industrial investment is directed towards the development of innovations, even if they are investments of “level conservation” (financed in principle by depreciation). In addition, although this concept is still used mainly in the field of production technology, it increasingly extends to organizational methods and methods associated with the use of various elements that contribute to the operation of an enterprise.

The concept of sustainable development includes recognition that the focus is on people who should be entitled to healthy and fruitful life in harmony with by nature. The term "sustainable development"

Presupposes such a progressive development of a process that does not create problems to their descendants.

The transition to sustainable development requires the development of strategic guidelines that take into account: firstly, the nature of global trends and expected changes in social life, technological patterns, economics and politics; secondly, climatic conditions on the territory; thirdly, living standards, technological, intellectual and social potential of the population, resource capabilities of the regions;

Fourth, the state of the environment. It achieved through strategic planning for sustainable development and organization fulfillment of the strategic plan. In the basis of the strategic plan in accordance with the concept sustainable development should be a humanitarian-ecological imperative, i.e. the principle of conservation and restoration of the natural environment for normal life of people.

The concept of sustainable development is based on three main principles:

1) Ensuring a balanced economy and ecology, i.e. achieving such a degree development when people in production or other economic activities cease to destroy habitat;

2) Ensuring the balance of economic and social spheres, taken in its human dimension, which means the maximum use in the interests of the population of the resources that economic development provides;

3) Solving developmental tasks; not only in the interests of the living, but of all future generations with equal rights to resources. Approaches to balancing economic, social and environmental factors in the transition to sustainable development lie on the path to social justice, sustainable economy and environmental sustainability. Social justice must inevitably be based on economic sustainability and social equity, and for this environmental sustainability is also necessary, which means maintaining natural capital.

Environmental sustainability includes the conservation of biodiversity, human health, as well as air quality, water and soil at a level sufficient to sustain human life and well-being. At the regional level, as part of the strategy sustainable development needs to develop measures to stabilize the socio-economic situation and strengthen the integrated development of the regional economy on the basis of an effective use of available resources to create points of economic growth and the formation of its own viable economic base. At the intraregional level, the most important direction is to ensure the financial and economic base of municipalities, sufficient for the effective solution of social problems. .UNIDO, “Strategies for regional innovation National Innovative systems” Vienna (2003)

When analyzing intraregional processes, to ensure effective management of the region, as well as for the socio-economic forecasting of regional development, first of all, regional peculiarities are taken into account, in particular, the administrative structure - the composition of districts, major cities, and other settlements. However, the approaches are not limited to this, since the region is, first of all, a social community. One of the most important functions of the region is to provide optimal economic and living conditions for the population, reproduction of labor, infrastructure, natural resources, taking into account the needs of the social sphere.

Picture 1: Sustainable Development Goals



SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



Source: United Nations- www.un.org

The Sustainable Development Goals are a gathering of 17 worldwide objectives set by the General Assembly of the United Nations in 2015 for 2030.

Objectives are expansive and associated, yet every one of them has a different rundown of objectives to accomplish. Accomplishing each of the 169 objectives will mean accomplishing every one of the 17 objectives. 169 objectives are estimated utilizing 232 pointers. The targets spread social, financial and natural improvement, including neediness, hunger, wellbeing, training, sex fairness, clean water, sanitation, reasonable vitality, tolerable work, imbalance, urbanization, an Earth-wide temperature boost, the earth, social equity and harmony.

As per an investigation distributed in the diary Nature, less African youngsters younger than 5 experience the ill effects of hindered development and weariness. The way to effectively accomplishing objectives is to make information on 17 objectives available and reasonable.

1. End neediness in the entirety of its appearances all over the place.

Since 1990, outrageous neediness has more than divided. In any case, roughly 1 out of 10 individuals live at a dimension beneath the global focus of \$ 1.90 every day. A low destitution edge is legitimized, underlining the need of those individuals

who are in a more terrible position. The main objective is to end outrageous neediness worldwide by 2030.

Destitution is more than absence of pay or assets: individuals live in neediness on the off chance that they need essential administrations, for example, wellbeing, security and training. They likewise experience hunger, social segregation and avoidance from basic leadership forms. Kids make up the greater part - the greater part - of the individuals who live in extraordinary neediness. In 2013, an expected 385 million kids lived on not exactly \$ 1.90 every day. These numbers are temperamental as a result of the immense information holes in the circumstance of youngsters around the globe. By and large, 97 percent of nations don't have enough information to decide the state of devastated kids and make conjectures.

Ladies face possibly hazardous dangers related with early pregnancy and incessant pregnancies. This can prompt lost trust in instruction and better salary. Neediness affects age gatherings, with the most annihilating ramifications for kids. It influences their instruction, wellbeing, sustenance and security, and influences their passionate and otherworldly improvement.

2. End hunger, guarantee nourishment security and improved sustenance, and advance reasonable farming.

Objective 2 expresses that by 2030 we should end craving and all types of lack of healthy sustenance. This will be accomplished by multiplying agrarian profitability and the livelihoods of little nourishment makers.

Ladies make up about 43% of the horticultural work drive in creating nations and over half in parts of Asia and Africa. Around the world, 1 out of 9 individuals are undernourished, most by far of whom live in creating nations. Interminable unhealthiness, which influences an expected 155 million kids around the world, additionally hinders the mind and physical advancement of kids and puts them in danger for death, sickness and absence of achievement in adulthood. The announcement depends on the examination of involvement in China, Vietnam, Brazil and Thailand. Three different ways to accomplish this were distinguished: 1) farming;

2) social insurance and nourishment under the direction of the mediation; or 3) a mix of both of these methodologies.

3. Guarantee a solid way of life and advance the prosperity of individuals.

Huge advances have been made in expanding future and lessening the quantity of regular reasons for death related with newborn child and maternal mortality. Somewhere in the range of 2000 and 2016, the under-five death rate overall fell by 47 percent. All things considered, the quantity of kids passing on before the age of five is incredibly high: in 2016 alone - 5.6 million. Objective 3 intends to lessen the under-five death rate to somewhere around 25 for every 1000 live births. In any case, if current patterns proceed, in excess of 60 nations won't most likely accomplish the neonatal SDG mortality focus for 2030. About portion of these nations won't achieve the objective even by 2050.

One objective is to decrease maternal mortality to under 70 passings for every 100,000 live births. Despite the fact that the maternal death rate declined by 37 percent somewhere in the range of 2000 and 2015, in 2015 there were around 303,000 maternal passing around the world, a large portion of which can be avoided. Information on young ladies of most prominent concern - kids matured 10 to 14 years - are right now not accessible. The key systems for accomplishing Objective 3 will be to decrease high school pregnancy (which is firmly identified with sexual orientation equity), give better information to all ladies and young ladies, and guarantee all-inclusive inclusion by qualified birth chaperons.

Objective 3 expects to accomplish widespread wellbeing inclusion, including access to fundamental medications and immunizations. He proposes a conclusion to the preventable passing of infants and youngsters younger than 5 years and a conclusion to pandemics, tuberculosis, intestinal sickness and waterborne maladies.

Consideration regarding wellbeing and prosperity likewise incorporates errands identified with the counteractive action and treatment of substance misuse, demise and wounds from street auto collisions and dangerous synthetic compounds, just as air and water contamination, soil and contamination.

4. Quality of education

Huge advancement has been made in getting to instruction, particularly at the grade school level, for both young men and young ladies. The quantity of out-of-younger students nearly split from 112 million out of 1997 to 60 million of every 2014. In any case, somewhere around 22 million students in 43 nations will avoid preschool instruction except if advance rates twofold.

Access does not constantly mean the nature of instruction or the finish of elementary school. 103 million young men and young ladies around the globe still need essential proficiency aptitudes, and in excess of 60 percent of them are ladies. In each fourth nation, the greater part of the kids did not fulfill the base guidelines for science toward the finish of grade school, and at the dimension of middle school this pointer was 1 of every 3 nations. Information on learning results and preschool is especially rare; 70 percent and 40 percent of nations don't have sufficient information for this reason, individually. This makes it hard to examine and recognize youngsters with the most elevated danger of being abandoned.

5. Gender equality

Giving ladies and young ladies equivalent access to training, medicinal services, fair work and portrayal in political and financial basic leadership procedures will add to the improvement of a maintainable economy and will profit society and mankind all in all. Starting at 2014, a record 143 nations ensured the uniformity of people in their constitutions. In any case, another 52 nations did not make this stride. In numerous nations, sexual orientation separation is as yet woven into the texture of legitimate frameworks and social standards. Issues that are explicit to ladies and young ladies incorporate customary practices in connection to all ladies and young ladies in the general population and private circles, for example, female genital mutilation.

Over the previous decades, the quantity of youngster relational unions has diminished. On the off chance that present patterns proceed, somewhere in the range of 2017 and 2030, 150 million young ladies will be hitched before they turn 18. Notwithstanding the way that youngster marriage is multiple times higher among the least fortunate than the most extravagant on the planet, most nations need to quicken advance among the two gatherings.

Accomplishing gender equality balance will require existing enactment that advances the strengthening all things considered and young ladies and requires auxiliary training for all young ladies. Objectives require a conclusion to sex segregation and the strengthening of ladies and young ladies through innovation. Young ladies and ladies must consider needs and needs.

Around the world, 6 out of 10 individuals don't have safe sterile administrations, and 3 out of 10 don't have safe water supply frameworks. Safe drinking water and clean toilets shield individuals from malady and enable society to be progressively beneficial monetarily.

The end of open poop will require the arrangement of toilets and sanitation for 2.6 billion individuals, just as changes in client conduct. This will require joint effort between governments, common society and the private segment.

Of those that were accessible, the Joint Checking Project found that 4.5 billion individuals right now don't have safe administration of clean conditions. On the off chance that we need to achieve our sanitation objectives by 2030, right around 33% of nations should quicken advancement to stop open poop, including Brazil, China, Ethiopia, India, Indonesia, Nigeria, and Pakistan.

7. Affordable and clean energy

Objectives for 2030 incorporate access to moderate and solid energy while expanding the offer of sustainable power source in the worldwide vitality blend. This will be related with expanded energy effectiveness and expanded worldwide collaboration to give progressively open access to clean energy innovations and increment interest in clean vitality foundation. Plans require uncommon thoughtfulness regarding supporting framework for least created nations, little islands and landlocked creating nations.

8. Nice work and financial development

For the least created nations, the monetary objective is to accomplish at any rate 7% yearly GDP development. Accomplishing higher efficiency will require broadening and innovation updates alongside development, business enterprise, and the development of little and medium endeavors. A few objectives for the year 2030;

others for 2020. The objective for 2020 is to decrease youth joblessness and set up a worldwide youth work system.

By 2030, the objective is to build up an economical the travel industry approach that will make employments. Fortifying household money related establishments and expanding support for the improvement of creating nations is viewed as a significant factor for financial advancement.

9. Industry, Development, Innovation and Infrastructure

Generation is the fundamental wellspring of business. In 2016, the least created nations had less "included estimation of generation per capita". The figure for Europe and North America was \$ 4,621, contrasted and \$ 100 at all created nations. Cutting edge generation represents 80 percent of complete creation in industrialized nations, yet just 10 percent in least created nations.

Cell flag inclusion has improved altogether. In beforehand "detached" territories of the globe, 85 percent of individuals currently live in shut regions. The whole planet covers 95 percent of the populace.

10. Reducing Inequality

Lessen salary incongruities inside and between nations.

Supported development in earnings of the last 40 percent of the populace at a rate surpassing the national normal, known as general flourishing, the destruction of outrageous neediness, and this is important for all nations of the world.

Objective No. 10 is to lessen exchange costs for transient settlements to beneath 3 percent. An objective of 3 percent was set as the cost that universal transient laborers would pay to send cash home.

11. Reasonable urban communities and networks

The objective for 2030 is to give access to sheltered and moderate lodging. The marker, named to gauge advance towards this objective, is the extent of the urban populace living in ghettos or casual settlements. Somewhere in the range of 2000 and 2014, this offer tumbled from 39 percent to 30 percent. Movement from country to urban has quickened as the populace develops and lodging choices improve.

12. Responsible consumption and production

Targets of objective 12 incorporate utilizing naturally well-disposed creation techniques and diminishing waste. By 2030, national preparing norms ought to be expanded, estimated in huge amounts of reused material. Likewise, organizations must embrace feasible techniques and distribute practical advancement reports.

To make the aggregate effect required for such a move, projects, for example, the Network of One Planet have shaped different usage techniques to help accomplish objective 12.

13. Climatic activity.

Make prompt move to battle environmental change and its belongings by managing outflows and advancing the advancement of sustainable power sources.

In May 2015, the report inferred that just an extremely driven atmosphere bargain in Paris in 2015 could enable nations to accomplish manageable improvement objectives and destinations. Also, monetary improvement and environmental change are inseparably connected, particularly with respect to destitution, sexual orientation correspondence and vitality. The UN approaches the open part to step up toward this path so as to limit the negative effect on nature.

14. Life under water

Seas spread 71 percent of the Earth's surface. They are important so as to make the planet livable. Water, drinking water and atmosphere are represented by the temperature and ebb and flow of the sea. In excess of 3 billion individuals rely upon marine life as a wellspring of business. The seas contain in excess of 200,000 species distinguished, and there might be a great many animal varieties that are yet to be found. Seas are the world's biggest wellsprings of protein. Be that as it may, 26 percent fermentation happened after the mechanical insurgency. An entire 30 percent of marine natural surroundings have been pulverized, and 30 percent of the world's fish stocks are over-abused. Marine contamination has achieved a stunning dimension; each moment 15 tons of plastic is tossed into the seas. 20 percent of every coral reef were irreversibly demolished, and another 24 percent are under impending danger of demolition. It was discovered that 95 percent of fulmars in Norway have plastic parts in their digestive organs. Microplastics are another type of marine contamination.

Individuals can help the seas by decreasing their vitality utilization and their utilization of plastics. Countries can likewise make a move. In Norway, residents working through the finn.no website page can gain cash on getting plastic on the shoreline. A few nations, including Kenya, have restricted the utilization of plastic packs for retail buys.

Improving the seas adds to destitution decrease, as it gives low-pay families a wellspring of pay and sound nourishment. Keeping up clean shorelines and sea water in less created nations can pull in the travel industry and diminish destitution by giving greater work.

15. To live on land.

Ensuring, reestablishing and advancing the economical utilization of earthbound biological systems, feasible backwoods the board, battling desertification, just as ending and turn around land corruption and stopping the loss of biodiversity.

This objective plans objectives for the preservation of the biodiversity of woods, desert and mountain environments as a level of the all-out land mass. Accomplishing a "world nonpartisan to arrive debasement" can be accomplished by reestablishing corrupted timberlands and terrains lost because of dry season and floods. Backwoods assume a significant job in the accomplishment of the 2030 Agenda. The mountain green spread list tracks advance towards objective 15.4, which centers around the protection of mountain environments. The file is called a marker for objective 15.4. So also, the Red Index will play out the capacity of observing biodiversity targets, reporting the direction of imperiled species. Creature annihilation is a developing issue.

16. Harmony, Justice, and Strong Institutions

Lessening rough wrongdoing, sex dealing, constrained work and youngster misuse are clear worldwide objectives. The global network esteems harmony and equity and requires the production of more grounded legal frameworks that will uphold the laws and advance an increasingly tranquil and just society. By 2017, the UN may report advance in recognizing casualties of dealing. A greater number of ladies and young ladies than men and young men were unfortunate casualties. In 2004,

84 percent of the unfortunate casualties were ladies, and by 2014, that number had dropped to 71 percent. One of the objectives is to put a conclusion to sexual dealing, constrained work and all types of savagery and torment against youngsters. For instance, in 84 percent of nations there is no or no information on fierce discipline of youngsters. Plainly brutality against kids by their parental figures stays across the board: just about 8 out of 10 youngsters matured 1 to 14 years are consistently exposed to fierce order, and no nation will dispense with rough control by 2030.

17. Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Objective No. 17 is to guarantee that nations and associations team up, as opposed to contend. Creating organizations for sharing learning, background, innovation and money related help is viewed as essential to by and large achievement. Specific notice is made of open private organizations including common society.(UNIDO “Energy Infrastructure and Industrial Development”)

3.2 THE ROLE OF INNOVATION PROCESS FOR SUSTAINABLE DEVELOPMENT.

New reasoning about how organizations can execute center business techniques while improving natural and financial advantages is an essential for any organization that needs to turn out to be genuinely supportable. Developments are completely important for another universe of maintainability and help recognize "pioneers" and "supporters." before, the business case for manageability was based on such basic business factors as cost investment funds, notoriety, enlisting the best individuals, chance administration, and asset effectiveness. However at this point it has turned out to be certain that normal business won't be sufficient to take care of the maintainability issues that the world appearances. Driving organizations understood that inside these feasible improvement challenges, there are open doors for re-designing items and administrations to accomplish immense market focal points. Who can create the greenest items? Who can execute new arrangements in the store network to take out

dangers and source impacts at lower cost? Who can take care of enormous issues through coordinated effort and publicly supporting? Developments are happening, and elective answers for existing issues show up in all areas. Electric cars, organic farming, renewable energy and e-learning are good examples. They grow as core programs supported by governments and the private sector, which are often included in sustainable economic development plans. These alternatives are also considered as “green” initiatives, and they are given such advantages as decentralization, thriftiness, flexibility, cleverness and democracy, qualities that are not found in traditional models. They are also linked to the potential for addressing common global challenges, such as climate change and growing inequalities between and within countries. Innovations and alternatives appear not only in industrialized countries, but also in developing countries.

Truth be told, the last have moved toward becoming pioneers in specific advances, for example, China in sun powered innovation, and pioneers in creating progressive applications, for example, portable banking in Kenya. The historical backdrop of modern unrests instructs us that innovative upsets animate or go with social and monetary changes (Perez, Chapter 1). The car and mechanical unrest in the United States, broad with the approach of the Ford T Model T, prompted another method for working, new framework and new hierarchical rules that changed the economy. The car upheaval likewise animated mass utilization and the craving for the American lifestyle. On the off chance that humankind is not kidding about tending to ecological and social issues, advancement over the mechanical insurgency should make ready for practical improvement. This will require the creation and dispersal of new advancements, just as new urban structures, plans of action, cultivating strategies, nourishment propensities, way of life, etc. So, development must happen in both social and monetary, just as innovative viewpoints, as a few parts in Planet of Life appear.

As indicated by David Banister, a specialist on versatility, if the objective is to decrease carbon dioxide discharges to a dimension adequate to avert atmosphere warming by multiple degrees Celsius, it isn't sufficient to just expand the quantity of

eco-friendly or electric vehicles in industrialized and creating nations. Rather, it will be important to lessen the interest for movement. He clarifies that in the event that we restrain ourselves to absolutely innovative contemplations while thinking about transportation choices, we hazard being caught in unsustainable advancement ways. Along these lines, he requires a reexamining of the presence of urban areas, the land dissemination of administrations and offices and different elements that will add to the reception of an increasingly feasible and low-carbon way for versatility. This end is affirmed by Rajeswari S. Raina (Radar 3), who contends that the simply mechanical methodology of different green insurgencies can't take care of the social and natural issues of the rural business in India. She calls for more prominent inclusion of ranchers and each one of those associated with science-based, earth, financially and socially feasible agroecosystems. (David Banister, 2008)

The term innovation can be defined in different ways - it can include a specific innovation or work on creating innovation. Innovations may be gradual or more radical.

There are also various types of innovations, such as:

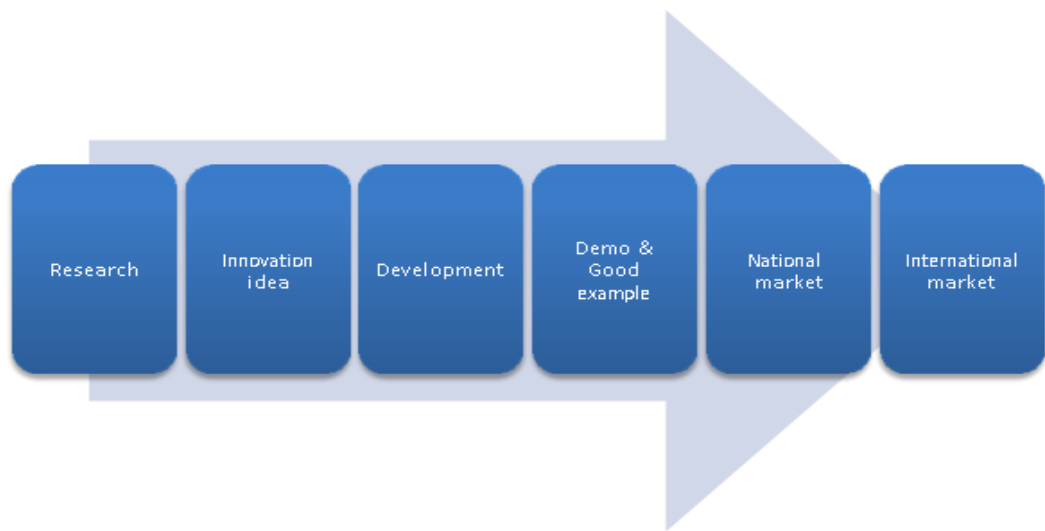
- Product innovations
- Process innovation
- Organizational innovations
- Business (model) innovation
- Social innovation

There are different ways to create and implement innovations. One possible way, when innovation is based on research, is shown in Figure 1. Innovation is seen as decisive for a company's competitiveness.

Common to many definitions of innovation are

1. Innovation includes a new solution.
2. A new idea is only innovation if it hits the market.

Figure 3: Innovation process



Source: Hamid Tohidi “Different Stages of Innovation Process” (2012)

Individuals who produce new thoughts need a comprehension of the supportability challenges confronting the world. In the meantime, the individuals who esteem and market thoughts ought to connect significance to ecological and social effects, while considering potential benefits. This requires interest in enlisting, preparing and spurring staff, just as administrators and chiefs who are prepared to give representatives the chance to test and offer new items and administrations that don't fit the present plan of action.

Nick Carlson in this theory related to innovation and sustainable improvements and new developments that, for example, may be useful, the manufacturer of detergents Tide showed this. Laundry detergent in its niche during hot washing is most effective. Green tile and glass tile, glass tile, the study showed that when new production will help reduce raw materials and energy, and not ceramic tiles. They have been found to create high-quality, cost-effective innovations. They are closely related to the development of some new things and the improvement of old products, as well as products and processes through sustainable design. In addition, there were still products that reduce raw materials and energy waste, which small changes are shared with a large number of people in order to make the most changes in the same way.

Development can get through the procurement of little organizations, for some huge enterprises. Advances are starting to create, and furthermore the degree to which organizations contribute and create advancement test seats can give a fascinating understanding into the organization's frame of mind toward putting resources into economical improvement developments. Regardless of the way that it isn't not kidding that oil and gas organizations are just "fiddling" with interests in new way sustainable power sources, CES is worked around a plan of action for the improvement of elective vitality and the arrangement of administrations and covered a beneficial way to deal with the arrangement of new way sustainable power source. Development is a procedure of progress. For that nations whose maintainability is incorporated into advancement forms, this influences it conceivable to better to clarify these procedures and show how significant they are for structure progressively stable organizations of things to come.

While development is the act of ensuring the earth while raising the way of life for all, manageable advancement are vital to its prosperity. Creations and advancements for improvement are not just the improvement of advances, its new procedures and better approaches to take care all things considered, regardless of the way that individuals everywhere throughout the world have a capacity to make, and a rich nation does not do what's needed to animate and utilize imaginative reasoning, and a poor nation will in general smother development and innovations. Creation and Advancement for Maintainable improvement is proposed for all nations, not simply creating ones. While a created nation needs to build up its very own ecological effect, a poor nation needs to build up its imaginative potential to address its issues. The main driving force of economic development, employment and social stability is the manufacturing industry. However, the volume of conditionally clean manufacturing products per capita in Europe and North America is 4.5 thousand US dollars, and in the least developed countries - about 100 US dollars. (www.worldbank.org) At the same time, encouraging trends are not reflected in the global level of emission intensity, since a significant proportion of global conditionally clean manufacturing products are now in countries with high emission intensity.

With the present development and urbanization rates, there is a requirement for extra interest in structure practical framework that will empower urban areas to all the more adequately oppose environmental change and that can add to monetary development and social steadiness. The help of nations needing money related, innovative and specialized assets is energized, not just from the state spending plan and authority improvement help, yet in addition from private sources. Regardless of the consistent improvement in mechanical generation and work, making the vital foundation at all created nations and multiplying the offer of industry in their GDP by 2030 will require new speculations

Principles are a significant instrument for structure practical foundation. For instance, ISO has created over a thousand records influencing the development business, which are universally concurred rules and determinations for all dirt sorts and concoction organizations that might be on the tops of these structures. They incorporate not just the required dimensions of security and execution, yet in addition a progression of strategies for obstruction testing.

ISO International Standards fill in as a stage for upgrading interoperability, pulling in speculation, and supporting development. Also, the present work of ISO on development the executives will incorporate demonstrated advancements that will enable associations to release their creative potential. These archives incorporate ISO 50501 on advancement the executives frameworks and ISO 50503 on devices and strategies for community oriented development.

In many creating nations, there is as yet a deficiency of fundamental foundation, including streets, data and correspondence innovation, sanitation, power, and water.

Notwithstanding, accomplishing a practical rate of development isn't really a clear exercise. Actually advancement is an unpredictable and troublesome result to gauge, and there are a wide range of factors that factor into it at a national dimension.

Innovative work (R&D) use is unquestionably one of these components – and keeping in mind that it doesn't in every case straightforwardly connect with advancement results, it represents time, capital, and exertion being put into investigating and structuring the results of things to come.

It thinks about R&D numbers for almost every nation on the planet. It utilizes information from the UNESCO Institute for Statistics balanced for obtaining power equality.

Table 3: Innovation costs of states

Rank	Country	R&D Spending	Global Share(%)
1	United States	\$476.5 billion	26.4%
2	China	\$370.6 billion	20.6%
3	Japan	\$170.5 billion	9.5%
4	Germany	\$109.8 billion	6.1%
5	South Korea	\$73.2 billion	4.1%
6	France	\$60.8 billion	3.4%
7	India	\$48.1 billion	2.7%
8	United Kingdom	\$44.2 billion	2.5%
9	Brazil	\$42.1 billion	2.3%
10	Russia	\$39.8 billion	2.2%
11	Italy	\$29.6 billion	1.6%
12	Canada	\$27.6 billion	1.5%
13	Australia	\$23.1 billion	1.3%
14	Spain	\$19.3 billion	1.1%
15	Netherlands	\$16.5 billion	0.9%
	All other countries	\$249.8 billion	13.9%

Source: world economic forum- www.weforum.org

Set up together the numbers for the U.S. (\$476.5 billion) and China (\$370.6 billion), and it adds up to 47.0% of all out worldwide R&D consumptions. Include Japan and Germany, and the complete goes to 62.5%.

At same time, the nation's left off the above rundown don't consolidate for 15% of the world's all out R&D uses.

Estimating R&D in supreme terms indicates where the majority of the world's exploration occurs, yet it neglects to catch the nations that are spending more in relative terms.

Which nations apportion the most elevated level of their economy to innovative work?

Table 4: The offer of research spending in GDP

Rank	Country	R&D(as a % of GDP)
1	South Korea	4.3%
2	Israel	4.2%
3	Japan	3.4%
4	Switzerland	3.2%
5	Finland	3.2%
6	Austria	3.1%
7	Sweden	3.1%
8	Denmark	2.9%
9	Germany	2.9%
10	United States	2.7%

Source: world economic forum- www.weforum.org

As should be obvious, nations like South Korea and Japan apportion the most astounding segment of their economies to Research and advancement, which show it is a piece of the reason they very position on the rundown in wording too.

3.3 INNOVATION INFRASTRUCTURE DEVELOPMENT AND SUSTAINABILITY OF THE NATIONAL INNOVATION SYSTEM.

Innovation infrastructure is the innovation activity that can be implemented, including the provision of innovation activities, services for the creation and implementation of innovative products. Through this infrastructure, innovation programs are being developed to support entrepreneurship and provide comprehensive service. To look at the content, creation and functioning of the innovation infrastructure, we need to look at the infrastructure as an economic category.

It has been clear from the research that the National Innovation System has been created differently in the world. At the same time, the level of development of the MES in the world is also different. It is expedient to study the experience of a number of countries in order to identify existing problems and identify successful strategies for the formation and development of the PfP. For this reason, we are analyzing the leading innovation systems in the Global Innovation Index - Finland, the Republic of Korea, and the Singapore National Innovation System. Based on the development of the MES in Finland, the formation and development of this country's MES can be traumatic for other countries (Roos 2005).

According to researchers, the development of the MES in Finland is based on changes in the national economy, the adaptation of the policy environment, and the experience of other countries. As we see the innovation policy in Finland consisted of three stages: a) establishment of structures in the 1960s and 1970s; b) technology development in the 1980s; c) Knowledge-based society development in the 1990s. At the first stage, the Science Policy Board was founded to coordinate science and technology policies. A new mechanism has been set up to plan and finance research at universities and increase the speed of higher education. The existing conditions have been further strengthened in order to carry out research and development in the industrial sector. At the second, Finland's innovation policy was prepared in accordance with the teachings of the Organization for Economic Co-operation and Development. In the 1980s, Finland experienced great economic growth and Finland's

international markets expanded. The export was not in line with the domestic demand and it was not able to increase living standards.

At the end, there has been a decline. In this period, technology policy in Finland was oriented towards ICT. The Finnish Agency for Technology and Innovation Financing was founded and the organization was considered responsible for issuing grants in this field of research and development. Nokia's largest firm in Finland and the world's leading telecommunications industry leaders has played a key role in national technology programs. This network of national science parks and practice centers have played a great role in the transfer, commercialization and diffusion of the results of scientific research. At the third stage, MIS and knowledge have become important ideas in innovation policy. Here are four areas highly appreciated: 1) Creating and using knowledge; 2) Research and operation, education; 3) Development and involvement of new technologies; 4) National and international cooperation. During this period, Finland became the main exporter of electronic and high-tech products, and its international productivity, export, research and processing levels were very strong. Finland has become a more intensive country than OECD countries with fewer research and development intensities, and its share in world exports, manufacturing, ICT research and business has dramatically increased. These successes have been achieved through the change in the priorities of the technology policy and the role of the business sector and the increase in decision-making in liberalization. By the late 1990s, Finland had already had a highly skilled workforce and hi-tech industries, and reduced dependence on raw material and energy-oriented industries. Finland was the first country to adopt officially a MIS in the world and the economy was entering a phase of innovation-oriented growth (Georghiou et al., 2003, Roos et al., 2005).

The economic transformation of the Republic of Korea was deep and its MIS is considered as a key factor in the country's growth and development (Bartzokas 2007, Kim 1993, Suh 2000, Wong 1999).

As you know, the Republic of Korea does not have large-scale natural resources and has not implemented its modern technological development on a technological

basis. Which enabled the Korean state to switch to a technologically-oriented economy through the policies created by the MES. The MES of Korea is characterized by active learning, direct foreign investment, using research and development diffusion, carrying out export-oriented policies, and investing heavily in human capital. As a result of the analysis it is clear that Korea's economic growth has been three stages: 1) the stage of economic growth-oriented economic growth in the 1960s and early 1970s; 2) the phase of investment-oriented economic growth from the 1970s to mid-1990s; 3) The stage of innovation-oriented economic growth from the 1990s to the present. Three phases of science and technology policy covering three stages of economic growth in Korea are as follows:

- 1) Imitation phase in the 1960-1970s;
- 2) Transformation phase in the 1980s;
- 3) Innovation in the 1990s.

In the 1960s, the Republic of Korea pursued an appropriate strategy for increasing industry growth in order to expand exports. The state has implemented a licensing and authorization system with the use of credit supervision. At that time, the State Program on Science and Technology Development, the Korean Science and Technology Ministry, the Korean Science and Technology Institute and several other state research centers were established. In the 1970s and 1980s, a major increase in the production of heavy industry and chemical products was achieved. In Korea's science and technology transformation, industrial areas have expanded their research activities within the framework of the National Research and Operational Program, where certain concessions have been made to private firms. Universities were preparing high-level human resources.

The country's development goal in the 1990s was to ensure the development of high-tech innovations and transition to a knowledge-based economy that was simultaneously accompanied by technology and information infrastructure development policies. As a result of weakness in the structural and institutional sector in the economy and the 1997 regional financial crisis, GDP growth in Korea has dropped and even minus 6.7%. According to a number of experts, the crisis has led to

an increase in the innovation potential of the Korean MES. The elimination of the crisis and the pursuit of relevant policies have led to the expansion of the technological capabilities of Korean firms.

Thus, the economy was reformed, liberalized, and high-quality IT specialists were trained. Highly Advanced National Projects for Biomedical, Biotechnology, Electronics, Next Generation Trucks, Semiconductors, Raw Materials Technology and Other Fields were realized during this period. It has played an important role in increasing the research potential of universities, expanding collaborative research and coordinating policies. Events in the field of innovation-oriented science and technology include: a) a five-year plan of innovation in 1997;

b) The National Science and Technology Council was founded in 1999;

c) University-wide research has been expanded;

d) The Ministry of Science, Education and Technology has been founded. After all these events, Korea has been very competitive in the field of innovation.

The main function of innovation infrastructure is to assist the resumption of the resources required for the innovation process. The international experience of foreign countries shows that the share of high technology production in the world market depends mostly on the level of development of the innovation infrastructure. The innovation infrastructure is a main support for innovations, doing the economic value created by entrepreneurship entities more sustainable. Demand for innovation infrastructure is the formation of an environment for sustainable natural resources, increased competition, productive systems, economic security, environmental protection, renewal of technological systems for years and innovative activities for human resources. (Lee 2003).

Deciding on the existing regional innovation infrastructure, we consider that the innovation infrastructure can be grouped into a form of innovation.

- a. Innovation infrastructure
- b. Transfer infrastructure.

National Innovation System is a big network of institutions in the national economy with activity and interaction between them. National innovation agency

recognize the great importance of increasing competitiveness of national industry with the goal of intervening in the innovation strategy of the industry is fundamentals of the industry. Innovation system dynamic social processes provide innovation planning system to do change of knowledge to initiatives to choose the import and innovation of technology to generate business with added values and innovation as an alternative to the strategy industry. The National Innovation System make up a new rational in environmental policymaking, the possible implications of which yet need to be explored and tried out. At first the National Innovation System approach seems to resemble the integrated product policy as promoted by environmental policy in later years. (Dr.Maj Munch Andersen, 2004)

Although entrepreneurs' activities are based on resources and knowledge, the advantages of advanced research infrastructure, highly skilled workforce and innovative culture are more important than natural resources, which is a decisive factor in supporting an innovative environment for innovative companies.

Innovation strategies in the regions should be supported and regional innovators should be able to support their efforts so that the regions are attractive for entrepreneurs. An ever-expanding world is already shaped and, basically, it forms a boundless economy, so one of the key strategies for combining entrepreneurship and innovation with regional development and key provider. In regions, infrastructure and appropriate governance mechanisms are used to support innovative businesses, more effective functioning of economic entities, and identifying real flows of economic activity, and the creation of real relationships and synergies between economic entities. Attracting more specialized and institutional support to the regions, it is becoming more realistic to pursue domestic investment as part of foreign investment and global positioning strategies. Thus, entrepreneurs, markets, government agencies, research institutes, educational institutions and social partners each incorporate an innovative framework that can stabilize all them.

In 2002, Scott Stern and M.Poter pointed out that the three key factors in the measurement and evaluation of the country's innovation capabilities were that national economies are more innovative and competitive. One of them is the overall innovation

infrastructure, the second is the quality of cluster environments created by entrepreneurship subjects and other regional stakeholders, and the third is the quality of the relationship between entrepreneurs and innovation infrastructure. (M.Poter, Scott 2002)

Cooperation at the regional level is one of the key factors of competition and cooperation among entrepreneurs. Forming an effective innovation activity based on a different kind of region in a region requires a complex presence and location of elements of a regional innovation infrastructure. In addition to the existence of industry groups in the regions, the specific composition of local firms can be an important factor in overall economic activity. In particular, the presence of major global companies within the regional economy can act as a catalyst for innovation, trade and development of the workforce.

The concept of regional SMEs policies has highlighted regional economics and its relevance to the regional innovation system, and the growing relevance of regional innovation. This approach will allow SMEs to look at innovation in the context of mutual communication systems between start and end of innovations. There is a need for changes in the internal and international profile of the regions to ensure the regional development of the SMEs. The progressive development of high-tech products and services in the regions, particularly in the industrial sector, and the waypoints and perspectives of regional innovation networks are based on the research of regional innovation systems and infrastructure mechanisms. The development of innovation infrastructure is the basis of a system of interaction that will fill the gap between science and business environment and, as an instrument of innovation policy, will accelerate the process of applying new knowledge through the physical approach of scientific centers and entrepreneurs.

Solving a number of existing social and environmental problems through the creation and application of new technologies in the country. One of the prospects for the development of the MES is the expansion of links between innovations and information resources in the country. Thus, the relationships between information resources and innovations are as follows: 1. Innovation based on the characteristics of

information resources is based on intellectual activity. 2. The basic part of both innovation and information resources is based on scientific and technological success; 3. The significance of innovation activities is its relevance to information and knowledge; 4. Information resources are a key part of information potential. From the analyzes it is clear that the information resources and structure needed for innovation activities should be divided into two sections: information relevant to innovation policy and information relevant to innovation. Information about innovation policy should include the following: official information on scientific research and development of organizations operating in the field of innovation activities; the most important innovation activities and programs implemented by the state; indicators related to research results; materials reflecting innovation activities in the regions; information on innovation activity of manufacturing enterprises operating in the country; predictive information used to identify priorities for the implementation and planning of the innovation strategy

The information provision for the development of the MES in the country should cover the following issues: - Forming databases for the broad use of all stakeholders in our country; - Continuously improve the knowledge and technology to be placed on these databases;

- Provision of public authorities with analytical information. The main principal areas of information and research development should include the following: - Increasing the participation of all relevant authorities during government regulation in the country for scientific research and development; - Ensure participation of science related people in the preparation and evaluation of decisions that will be taken in relation to the management of research and development; - Increasing the professionalism of experts, researchers and government officials involved in the preparation and evaluation of the decisions that will be made to ensure socio-economic development of the country; - Changing the characteristics of the information field in accordance with the requirements of the time period.

Based on the findings from the research, it is clear that, while considering the experience of countries with innovation, the introduction of new methods for

managing innovation and new technology business in the country, selection of competition paths for research funding, effective tax breaks in research and development and the fact that the right to intellectual property is at the proper level makes the National Innovation System even more effective. In the Republic of Azerbaijan, it is expedient to solve the following issues for the development of the innovation: - Coordinating and coordinating the activities of all the components of the innovation process in accordance with common goals; - Strengthen innovation activities of all components (public authorities and private firms) that are components of the innovation.

- Develop commercialization of intellectual property and ensure efficient use of existing scientific potential;

- Implementation of a number of stimulating measures to increase the business sector's activity in order to increase funding for research and development in the country; - Creation of a special website for the purpose of strengthening relations between research institutes and the industrial sector and bringing together the participants on that site; - consultation with the industrial sector in the selection of topics to improve the quality of the researches; - Creating the necessary conditions for the development of large and small innovation business irrespective of their size; - Increasing the professionalism of the innovation management staff; - Increase efficiency and effectiveness in attracting scientific and technological resources to the production process; - To increase the potential for innovation; - Developing the use of venture capital to accelerate the use of innovations in production; - Enhance the funding for science in order to stimulate the involvement of talented young people in scientific research work.

4. Influence of the industry's innovation infrastructure on sustainable development in Azerbaijan.

4.1 Formation and activity trends of the innovation infrastructure of Azerbaijan.

Formation of innovation infrastructure for the next decades will form the basis of the national economy development. In order to form a national innovation infrastructure, it is important to initially formulate and co-ordinate regional innovation infrastructure. The innovation infrastructure will create a lot of benefits for less resourcing. Innovation infrastructure, with the main support of innovations, makes the economic value even more sustainable. Demand for innovation infrastructure is consistently shaped by declining natural rewards, increased competition, more productive systems requirements, economic security, environmental protection, renewal of technological systems for many years, and the creation of a necessary environment for innovative entrepreneurship and innovative human activities. The basis of the new economic system is more active and innovative entrepreneurial activity, and the industrial sector has made the central place of the more active dissemination of innovation.

When analyzing international experience, each country has its own Innovation Sitemap that is modeled on itself and its economic potential. The main undeniable fact here is that the innovation factor is now one of the key factors in economic development, and economies that are more flexible than this seem to have achieved better results. The use of international experience in directing oil revenues to the structural development of the economy in the transition to a new stage in the development of human capital as well as the selection of the best practices and their adaptation to the national system should form the basis for the establishment of the National Innovation Site of Azerbaijan. When shaping clusters and industrial parks, internationally-based experience should be identified in accordance with the economic system of Azerbaijan. In order to ensure innovation processes in the country, it is necessary to create innovation database for innovation management in organizations. The purpose of the innovation infrastructure of the industry is to increase GDP through

the production of new types of goods and services, to increase the competitiveness of high-tech products in the local and world markets, to create new technologies and increase the productivity of the production, to increase the number of scientific fields.

All this shows the need for a centralized implementation of the innovation policy implemented in our republic. In order to develop and develop the industry's innovation infrastructure, taking into account international experience, internal potential and implemented programs, the following proposals are offered.

1. Stage one stage of resources and capacity analysis - At this stage, it is necessary to fully define industrial potential of the country and its separate regions, and to fully evaluate existing infrastructure.

2. Phase 2 - Stages of grouping of resources - At this stage, the grouping of industrial sectors should determine which areas in the region are economically viable.

3. The stage of formation and development of the tertiary innovation infrastructure - the formation and development of the industry's innovation infrastructure on protector areas identified in the regions should be carried out with state-purpose programs. (Tagiyev A.H, 2011).

The Azerbaijani economy is in transition to the innovation economy. The essence of innovation economy is the activation of innovation activity. It is impossible to develop innovation activity without developing innovation infrastructure. This is primarily the development of the non-oil sector in Azerbaijan, the development of knowledge-based areas and science-intensive technologies. The main objective of this period, when the Azerbaijani economy is entering a new stage, is the development of the non-oil sector, the provision of more efficient use of oil revenues and the development of a competitive economic system. For this purpose, many programs and projects are being implemented. There are wide opportunities for the development of industrial innovation infrastructure in Azerbaijan. The creation of the necessary infrastructure for the industry will ensure greater use of Azerbaijan's industrial potential. For this purpose, the process of establishing industrial parks, technoparks and industrial zones has already started and works are under way. Industrial parks

support entrepreneurship, ensure sustainable development of the non-oil sector and increase employment in the industry.

One of the key issues in reforming Azerbaijan's economy is to increase the innovation activity of scientific organizations, enterprises, firms and companies. At this stage, the development of innovation is a quick transition to more progressive technological processes and flexible production that enables us to produce new competitive, world-class products. Experience of foreign countries in the creation of industrial and technology parks shows that, given the fact that globalization processes accelerate in the world economy and competition in the market is strengthened, state support to entrepreneurs in this area is one of the positive factors that ensure sustainable development of the country's economy.

The formation of a regional innovation infrastructure in Azerbaijan focuses primarily on the formation of infrastructure subjects that will ensure regional development of the industry. Here, more attention is paid to the formation and support of industrial parks, agro-parks, industrial neighborhoods and business incubators. Establishment of industrial parks in the country is envisaged in a number of state programs, including the "State Program for Industrial Development for 2015-2020 in the Republic of Azerbaijan" approved by the Decree of the President of the Republic of Azerbaijan dated December 26, 2014 № 964. In this regard, consistent measures have been taken to apply the positive experience of foreign countries in our country. Taking into account the recommendations of the experts of the United Nations Industrial Development Organization (UNIDO), Turkish International Cooperation and Development Agency (TIKA), relevant proposals were prepared in this area and a number of consecutive measures were taken. (Strategic Road Map,2016)

Establishment of industrial parks with modern production infrastructure has been aimed at the development of industry in the country, ensuring the balanced development of the country's economy, as well as the implementation of the state policy aimed at the development of production areas and its innovation orientation. The creation of industrial parks is particularly important in terms of sustainable development of the country's non-oil sector, the ability to export the country's

economy, as well as to increase the production of competitive, import-substituting products, to provide employment in the surrounding areas, and to attract investments and modern technologies. Work has been continued in this direction, international experience has been constantly studied and relevant regulatory documents have been prepared.

"Model Regulations on Industrial Parks" was approved by Decree No 865 dated April 24, 2013 of the President of the Republic of Azerbaijan. The decree stated that the Industrial Park is an area that has the necessary infrastructure and governance structures for entrepreneurial activity, which is used for the purpose of producing competitive products and services through the application of modern technologies, which helps entrepreneurs to effectively operate and develop.

The purpose of creating an industrial park is as follows:

- development of innovative and high technology based competitive industrial production, creating favorable conditions for providing services and promoting entrepreneurship in this field;
 - Ensuring sustainable development of the economy, including the non-oil sector;
- Increasing the country's accessibility to local and foreign investment;
 - Increasing the employment of the able-bodied population in production.

The main purpose of the implemented innovation policy is to achieve regional economic development, to produce export-oriented industrial products, to ensure the security of the domestic market, to develop competitive products, to develop industrial sectors based on local raw materials, to increase productivity and employment in the industry, to introduce innovative techniques and technologies in production, development, regional innovation networking, etc. Balakhani Industrial Park was founded in Baku, at the initial stage of the formation of industrial parks No. 1947 of the President of the Republic of Azerbaijan dated December 28, 2011. The purpose of supporting entrepreneurship in Azerbaijan, organization of industrial enterprises which have modern technologies and employment in the field of production. The

Balakhani Industrial Park area is nearly 7 hectares. Balakhani Industrial Park has "Tamiz Shahar" OJSC. It is a management organization of Balakhani Industrial Park.

Table 5: Azerbaijan regional innovation infrastructure subjects.

Subjects	Baku city	Absheron	Ganja-Gazakh	Aran	Guba-Khachmaz	Lankaran
Industrial parks	3	1		1		
State	3	1		1		
Private						
industrial district				3		1
State				3		1
Private						
Aqroparks		1	1		1	
State						
Private		1	1		1	
Business incubators	7			1	1	
State	2			1	1	
Private	5					
Techno parks & high tech parks	3			1		
State	1			1		
Private	2					

Source: www.economy.gov.az

4.2 Perspective role of national innovation infrastructure in ensuring the sustainability of the Azerbaijani economy.

Innovation potential analysis is crucial to ensuring sustainable economic development, identifying activities and actions of management bodies, innovation development and investment climate. The innovation system is being formed in Azerbaijan. To support sustainable economic development, it is important to apply

modern forms of innovation management to maximize the efficiency of the process of forming and managing the innovation potential. The focus of the economic reform is focused on the sustainable development of the economy, in the construction of an efficient innovation infrastructure for the country's economy and in increasing the scientific and technical potential of the industry. Nevertheless, national priorities for innovation should either be part of sustainable economic development targets or coincide with them. Therefore, innovation activities are shaped taking into account the sustainable development situation.

The reconstruction of industrial areas is related to the transition to a new model of regional economic development and to more innovative production systems. Looking for new sources of economic growth, there is a need to increase the efficiency of the industry, and one of the economically viable options is to apply innovation models in the development of industry. If Azerbaijan achieves good results in its sustainable development goals, its innovation infrastructure is being renewed.

Providing a scientific justification for the advantages of a cluster approach to improving the innovation management process to ensure the innovative development of the Azerbaijani economy. An analysis of the best practices in developing a national innovation system for developed and developing countries enables us to leverage realistic innovation leverage in the industrial sector in Azerbaijan only on two conceptual principles: support for regional clustering, ensuring the establishment and development of innovation infrastructure with economic and institutional support.

In the industrial policy formulated in Azerbaijan, entrepreneurs can concentrate mainly on two areas: economic entities located in regional support venues (industrial parks, industrial spaces, etc.); and secondly in the general infrastructure outside the support zones in the regions, industrial operators operating under conditions. If entrepreneurs deal with economic activity in any region their governance depends on whether or not they are within or outside the region. The important point is how companies search, evaluate, and use this support for their innovative purposes.

The President of the Republic of Azerbaijan Mr. Ilham Aliyev issued an order on January 10, 2019 in order to ensure coordination and increase effectiveness in the

field of innovative development in the Republic of Azerbaijan. According to the order, the subjects of the coordination of innovation development in the country are the legal entities created by the central executive bodies, the National Academy of Sciences of Azerbaijan, the President of the Republic of Azerbaijan, as well as executive power bodies designated by the President of the Republic of Azerbaijan, including public universities, stocks) have been identified. At the same time, these subjects are tasked to identify responsible persons responsible for innovative development issues, based on the scientific achievements, knowledge, and product development, technology, processes and solutions based on knowledge and digital innovation. Implementation of these measures will support sustainable development in Azerbaijan.

Special attention is paid to stimulating innovative entrepreneurship. In Azerbaijan, state support measures are being continued in different areas. It is envisaged to create the relevant innovation structures - innovation centers, business incubators, techno parks for improvement of the investment climate according to this policy and significant work has already been done in this part of economy. Our country has a Sumgait Technology Park and relevant work is done to organize Sumgait Chemical Industry, Balakhani Industrial and High Technologies Parks. It will play an important role in maintaining the activity of the innovation infrastructure actors for implementation of innovation activities in this industrial sector. (Huseynova A.D, 2007)

Many issues of understanding and evaluating the effectiveness of innovative infrastructure for the development of innovative entrepreneurship in the regional or national innovation system are unclear for entrepreneurship subjects and entrepreneurs prefer traditional production systems and also culture.

At present, natural resources are still a key determinant for the Azerbaijani economy. This has also largely been reflected in the formation of the regional economic structure. Distribution of industrial entrepreneurs across the regions is largely dependent on these factors. Establishing a multifaceted economic structure in achieving regional development is an important factor, and regional development and support of industrial business is one of the key aspects. Regional development of the

industry creates significant changes in the structure of the regional economy in the formation of new industries in the regions. This, in its turn, brings the region new production forms, taking advantage of science and technology along with new competition conditions.

Innovative activity in Azerbaijan is developing at national and regional levels. Reforms and measures are being taken in many aspects such as education and research, infrastructure development, financial support, innovation development strategies, promotion and application of international experience, and development of new services and skills for workers and entrepreneurs. Not only innovations, but also programs aimed at improving public services and their effectiveness are being implemented. Nonetheless, the relevant innovation policy measures require effective management approach in this policy to ensure that risks are managed.

The development of innovative activity in the industry, in addition to the existence and relevance of regional intellectual resources, material and intangible assets of entrepreneurs, national and regional innovation infrastructure and systems, requires new industry-driven approaches to industry today. The development and support of its innovation potential is one of the key goals during its industry management. Organizational goals, created by entrepreneurs, are one of the important functions to focus on innovation management in providing essential economic targets at national economic levels. Its features are determined by industry trends, situation, factors and regional potential in high-tech and medium-tech industry sectors, directions of development of the region, as well as economic development strategies.

The most important support for innovation infrastructure elements in the regions will be for industry-entrepreneurs, of course, in the region. The extent to which regional innovation is being shaped and supported is the level of innovation in the region. These infrastructure organizations are implementing uninterrupted and indirect support for innovative activities in the regions. Entrepreneurs operating in each region can face problems with the nature of the region and their own innovative activity systems. Providing innovation support and incentives by the state to the entrepreneurs plays an important role in reducing the risk of entrepreneurial activity.

It would be expedient to pay more attention to the following examples during the implementation of measures to accelerate the regional development of industrial entrepreneurship.

- Identification of innovation infrastructure in Azerbaijan, respectively, identifying their potential and needs for their high and sustainable development.
- Develop a special mechanism to stimulate innovation activities in the industry.
- Supporting infrastructure and ecosystems that provide innovative activity based on industrial potential across regions.
- Development of regional models of entrepreneurship, state, academia and citizens' interaction in the development of regional f entrepreneurial activities.
- To support the development of innovation infrastructure networks and channels for fostering the spread, use, transformation and regional innovation.
- Adoption of the state program on formation and development of the national innovation system.
- Measurement and development directions of innovation potential of traditional industries.

The recent years that Azerbaijan's economy has embarked on on the new stage of changing global relations has come up with predictable, assessed and implemented complex economic reforms. Entrepreneurship and regional development policy, founded by national leader Heydar Aliyev, has become a key factor in today's sustainable development and inclusive growth of the Azerbaijani economy. This policy is not only a real development but also a prospective development of the future Azerbaijani economy.

The main element of economic development is the provision of SMEs and their development, which forms the basis of real economic activity. Reforms implemented in Azerbaijan in this area are mainly reflected in the following areas.

- Protection of entrepreneurs' rights
- Licenses and permits
- Investment promotion
- Export promotion and support
- Supporting domestic production
- Agriculture, Food and Food Safety
- Public procurement
- Customs and Taxation
- Strategic road maps
- Access to finance

As a result of implemented reforms and measures, the number of small and medium-sized businesses continues to grow, which in turn reflects positive trends in product development and employment.

One of the key issues in reforming Azerbaijan's economy is to increase innovation activity of scientific organizations, entrepreneurs and people. At this stage, the development of innovation is a quick transition to more progressive technological processes and flexible production that enables us to produce new competitive, world-class products. Experience of foreign countries in the creation of industrial and technology parks shows that, given the fact that globalization processes accelerate in the world economy and competition in the market is strengthened, state support to entrepreneurs in this area is one of the positive factors that ensure sustainable development of the country's economy.

A lot has been done in recent years to support entrepreneurial innovation in Azerbaijan. High-Tech Park in the Pirallahi region of Azerbaijan and Mingachevir city, High-tech park under the Azerbaijan National Academy of Sciences, Baku Business Training Center of the Ministry of Economy, business incubators at Khachmaz on Guba-Khachmaz economic region, Yevlakh city in Aran economic region. At the same time, construction of parks, neighborhoods and clusters, which will support the transition of the industrial sector to more innovative production

systems, is being continued. Balakhani, Garadagh, Mingachevir, Pirallahi Industrial Parks and Sumgayit Chemical Industrial Park have been established for this purpose.

In order to increase innovation activity of SMEs and to support innovation activities, measures are being taken in several directions in Azerbaijan. Identifying the existing infrastructure of innovation is crucial in determining its future use. Elements of innovation infrastructure in the territory of the Republic of Azerbaijan include technology parks, business incubators, scientific-innovation centers and high-tech parks, industrial parks, industrial neighborhoods and agro-parks operating at public and private universities.

However, the development of Azerbaijan's innovation infrastructure is not at the desired level and it is impossible to develop innovation activity without developing innovation infrastructure. This is primarily the development of the non-oil sector in Azerbaijan, the development of knowledge-based areas and science-intensive technologies.

In order to ensure the development of the regional innovation infrastructure in Azerbaijan, the main targets and expectations to be determined in its methodological approach should be identified and the targeted steps to be taken to be systematized and the program for the implementation of innovation policy should be formulated. In general, the following key indicators should be considered.

In 2018, multifaceted and consistent reforms were continued in our country, comprehensive stimulus measures were taken to increase charitable exports, balanced development of regions, improvement of state-entrepreneurial relations and business-investment environment, nonoil sector development, and promotion of private sector incentives, the state support to the agrarian sector, small and medium sized businesses has always been in the spotlight. An analysis of the country's current socio-economic situation shows that the strong economic potential created as a result of the ongoing reforms has increased the sustainability of the economy and provided macroeconomic stability in the country. During the reporting period, the implementation of measures identified within the framework of strategic road maps, concepts and other state programs for 11 key sectors of the national economy and economy, which was

approved by the Decree of the President of the Republic of Azerbaijan, was successfully continued. As a result of the work done, the economic growth in the country has intensified, and GDP in real terms increased by 1.4% in 2018 and reached 79.8 billion pounds in current prices. The GDP per capita was 8126.2 manat.(www.stat.gov.az)

These indicators show that Azerbaijan's economy is still steadily increasing.

In the light of the reforms, the stability of the Azerbaijani economy is rising. Certainly, in line with global economic challenges, the Azerbaijani industry should switch to more innovative production systems, and the main direction in it is the formation of innovation infrastructure. The more innovative economic system requires the existence of innovative infrastructure and the interaction of its elements. The shameless development of the Azerbaijani economy will accelerate with its industry's more innovative infrastructure. At the same time, the key targets of this sustainable development will be largely dependent on the 9th industry, innovation and infrastructure targets.

5. CONCLUSIONS

In this research, firstly was determination the key function of the innovation infrastructure. Then for understanding innovation infrastructure of industry I looked for the experience of foreign countries, which shows that the share of high technology production in the world market depends on the level of development of the innovation infrastructure. This level of development have a great impact on general level of sustainability of countries.

Innovative infrastructure facilities nowadays also research parks and technology parks have opened difrent opportunities to maintain world-class science and technology advancements, with the advent of innovation infrastructure in the United States, Japan development has become one of the priorities of the state.

Explanations of elements, objects show us mainly that infrastructure support daily life and economic activity in society. We need to know that technology parks (TP) and innovation technology ensure access to production areas and innovation complexes that provide access to production facilities as technical application zones, centers of collective use of high-tech equipment, business incubators, the center of transfer technologies. One of the key elements of innovative infrastructure is techno parks. This techno parks ensure scientific-production complex of small and medium-sized enterprises, which creates sustainable conditions for the provision of equipment. In Azerbaijan also we have techno parks: for example, production yards, research centers and office centers, which help support sustainability.

Also its important to improve Business incubators, which help to the students mostly (start-up). Transfer Technology Center (TTM) which are mainly maintain Higher education institutions.

The purpose of Regional Development Centers is mainly not developing only one region or area but also interaction of participating enterprises.

Innovation infrastructure is mostly maintain long term social, economical sustainability and that is why ensure with various types of financial funds: venture funds, organization microfinance organization (tmt), entrepreneurship support funds. For ensuring sustainable development we need have three main principles as ensuring a balanced economy and ecology, the balance of economic spheres, mostly taken in its human dimension, solving developmental tasks.

Determination in this research all sustainable development 17 goals. Also this goals help developing countries to solve their problems. Actually there are so many types of innovation, which needed to be implemented as process innovation, Organizational innovations, business (model) innovation, social innovation. I do research and come to conclusion that which country spend more to research and development have sustainable economy, innovative technology.

Impact of innovation infrastructure of industry on sustainable development in Azerbaijan. Actually innovation have a great impact and developed Azerbaijan

industry capacity. Also shaping clusters and industrial parks, internationally-based experience should be ensured in within the economic system of Azerbaijan. It is necessary to create innovation database for innovation management in organizations. The meaning of the innovation infrastructure of the industry is to increase GDP through the production of new types of goods and services. The main purpose in Azerbaijan is to increase the competitiveness of high-tech products in the local and world markets, to determine correctly oil prices, to create new technologies, to increase the productivity of the production.

5.1 RECOMMENDATIONS

I recommend that we ought to examine of global learning and suit these encounters to national modern framework. As, global information should suitable to Azerbaijan's legislative issues and framework and make a great improvement in sustainable development. For instance, because of survey we can infer that state utilizes best practices of Europe, China, Turkey and CIS nations, by this we can improve innovation infrastructure in the Republic of Azerbaijan, and also to improve the social and financial qualities of the nation.

Additionally, these days making of technoparks is the fundamental heading of expanding and modernizing the modern governmental issues in nation. Today, government is aim to build genuine capital and improve the legislative issues for supporting modern exercises and basically making technoparks and zones. Just as, state can pick approach for advancement of various parts of industry in nation for structure sectorial technoparks parks. Lastly, we should discover limit of districts for making the best technoparks, since state contributes so huge measure of cash for making them and if this land or locale isn't reasonable for these sort of parks and also development innovation infrastructure then it can influence adversely to nations' strategy.

6. References:

1. Andersen, M. M. (2004). "Innovation system dynamics and sustainable development – Challenges for policy".
2. B.C Popov "Transport development management Infrastructure of urban agglomeration" (2013)
3. Bartzokas , "Daylight Science and Daylighting Technology" (2007).
4. C.F. Rey "Studies in the economic history of Southern Africa", (1930).
5. David Banister "Making sustainable transport politically and publicly acceptable" (2008)
- 6 . Firas Thalji "The Planning and Design of Science and Technology Parks" (2005)
7. Georghiou et al., "Public Procurement and Innovation" (2003)
8. Gustafsson, A., Johnson, M.D. and Roos, I., "The Effects of Customer Satisfaction, Relationship Commitment Dimensions". (2005)
9. Hamid Tohidi "Different Stages of Innovation Process" 2012
10. Huseynova A.D., "Materials of innovation activity in the Azerbaijan Republic" (2007).

11. Lee, H. and Choi, B. (2003), “Knowledge management enablers, processes, and organizational performance: an integrative view and empirical examination”.
12. M.Porter”The Competitive Advantage of Nations” (1990).
13. (Michael Porter, Scott Sternn 2002), “Capacity”.
14. P. ROSENSTEIN-RODAN, ‘Problems of Industrialization of East and South-East Europe’, June-September (1955).
15. Q. Shepelyev ”Strategy of Development of Innovation Infrastructure of city” (2004)
16. R. Iohimsen, “The Features of the Process and Directions of Industrial Infrastructure Development in the Region” (2015)
17. S.Viktorovna “Innovation infrastructure in the region: problems and directions of development” 2014
18. Stakhanov V.N., Platonov V.S. (1993). “Market infrastructure”.
19. Strategic Road Map for the Production of Consumer Goods at the Level of Small and Medium Enterprises in the Republic of Azerbaijan, (2016).
20. Suh, “Governance of Innovation Systems” (2000)
21. Tagiyev A.H, “Innovation (1st edition)” (2011).
22. Torrisi,Gianpiero,"Public infrastructure: definition, classification and measurement issues"(2009)
23. Kim, “Determinants of technological innovation in the small firms of Korea” (1993).
24. Wong, “Economic Growth through Innovation and Entrepreneurship” (1999)
25. UNIDO, “Strategies for regional innovation National Innovative systems” Vienna (2003)

26. UNIDO “Energy Infrastructure and Industrial Development”, 2013.
27. <https://www.globalinnovationindex.org/>
28. www.economy.gov.az
29. www.stat.gov.az
30. <https://www.worldbank.org/>