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“Igor Sikorsky Kyiv Polytechnic Institute”

**INTERNATIONAL SCIENTIFIC AND TECHNICAL COOPERATION:
LECTURES**

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Institute as a textbook for foreign students studying in the specialty
051 «Economy»*

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International scientific and technical cooperation: lectures

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The teaching manual is devoted to the following topics: Subject matter, methods and system of International scientific and technical cooperation. Creation of international coordination programs, joint scientific and technical research. International licensing, exchange of scientific and technical documents, patents, licenses. International engineering. Cooperation in the training of scientific and engineering personnel. Holding international scientific and technical conferences, symposia. Establishment and functioning of international research institutes and organizations. Development of scientific and technical forecasts. Priority directions of MNTS development. For students, graduate students and other stakeholders.

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TOPIC 1. SUBJECT MATTER, METHODS AND SYSTEM OF INTERNATIONAL SCIENTIFIC AND TECHNICAL COOPERATION

Educational issues:

1. *The subject of international scientific and technical cooperation.*
2. *Methods of international scientific and technical cooperation.*
3. *The system of international scientific and technical cooperation.*

Basic concepts: International scientific and technical cooperation (ISTC), Intellectual property, International licensing, license, International engineering

International scientific and technical cooperation (ISTC) is a form of International Economic Relations (IER), which is a system of economic relations in the field of intersection of science, technology, production, services and trade and exists on the basis of common, pre-determined and agreed intentions, which are enshrined in international economic agreements.

Priority directions of ISTC development:

- Electrification and automation of production processes.
- Reliable peaceful use of nuclear energy.
- Expanding the practical use of biotechnology and genetic engineering (cloning).
- Space research.

Intellectual property and the global technology market

Intellectual property can be defined as the relationship between people that arises from the appropriation, possession, use and disposal of the results of intellectual property.

The subject (object) of intellectual property is:

- new technologies,
- scientific discoveries,
- inventions,
- production and other experience,
- know-how,

- experimental or industrial designs of equipment,
- equipment,
- tools,
- technological lines,
- documentation,
- production methods.

Intellectual property is the possession of an exclusive right, which determines the exclusion and restriction of access, transfer, control and liability for the object of intellectual property.

A certificate of intellectual property is a **patent** - a document issued by a competent state authority for a certain period to the inventor or his successor, which certifies the authorship and exclusive right to the invention.

The problem with international patenting is that different countries have different rules for patenting. In the United States, the Patent Office must decide who is the first, true and original inventor, and the time of filing an application for an invention does not matter, as it is practiced in Europe (while the inventor himself remains unknown).

The main international forms of technology transfer:

- Sale of patents.
- International licensing.
- International engineering.
- Joint research and development work.
- Foreign intellectual investment.
- International interuniversity relations.
- International scientific conferences, symposia, seminars,
- Creation of computer data banks (Bank for Industrial and Technological Information at UNIDO).
- Technological espionage.

International licensing.

International licensing is a structural element of international scientific and technical cooperation, which takes the form of international licensing trade in licenses for inventions, patents, technologies, know-how.

A **license** is a permit issued by the licensor to the licensee for the industrial and / or commercial use of the invention for a specified period for a fee. Licensed trade on the world market is carried out by concluding licensing agreements.

The main types of license agreements:

- Simple license - the licensor allows, under certain conditions, to use the invention of the licensee, while retaining the right to both independently use and issue similar licenses to other interested parties.

- Exclusive license - the licensor has the right to use the invention himself and allows the licensee to use the invention only.

- Full license - the licensor transfers all rights to the licensee.

Types of license fees for granting license rights to use the invention:

- Royalties are periodic interest deductions.
- The lump sum payment is a clearly defined amount in the agreement, which is paid once (or in installments).
- Cross-licensing is the exchange of licenses or patents that are presumed to be equivalent.
- A prepayment is a payment that reimburses the licensor's expenses prior to the license agreement.
- Transfer of securities and granting the right to participate in profits.

Objects of international licensing:

- development of constructive, technological character,
- composition of material, substance or alloy,
- methods of treatment,
- ways to search for and extract minerals,
- trademarks and industrial signs.

International licensing is characterized by such a concept as *patent purity* - a legal property of the object, which means that it can be used in the country without

infringement of existing in its territory protection documents of exclusive law (patents owned by third parties).

In practice, the validity of license agreements is from 3 to 10 years, and more for licenses, the development of which requires significant capital costs.

International engineering

International engineering is a form of international scientific and technical cooperation that takes the form of a set of intellectual activities, the ultimate goal of which is to obtain the best results from foreign investment or other costs associated with the implementation of projects of various engineering and consulting types.

In other words, international engineering is the provision of engineering consulting services.

Types of engineering services:

- Pre-design services - research related to the study of the market of goods that will produce the object to be built; topographic surveys; transport network development.
- Project services - project preparation, project cost estimation, project examination, working drawings, supervision of works.
- Post-project services - preparation of a contract for construction, construction, installation of equipment, consultations on the operation of equipment.

International interuniversity scientific relations. WIPO activities

Traditionally, the main research in Europe is conducted more in research institutes, and in the United States, traditional science is created in universities, and applied science - in research laboratories at large firms.

Specialization in science at the global level contributes to its significant progress. The exchange of scientific knowledge takes place in different ways: through the scientific literature, the work of leading scientists in different countries, the creation of joint research institutions, holding various kinds of symposia and conferences.

The exchange system in the field of education is somewhat less developed, which is built on the basis of links between universities. The most common forms

of international relations at the higher school level are: exchange of experience and information, exchange of teachers, researchers and students, joint research activities, internships for young professionals.

Among the large number of international organizations operating at the level of international scientific and technological cooperation, the *World Intellectual Property Organization* stands out - an intergovernmental organization with the status of a specialized agency of the United Nations, founded in 1970 and aims to:

- promoting the protection of intellectual property throughout the world through the development of cooperation between states and cooperation with any other international organization;
- management of unions that are part of the WIPO.

These are the following unions:

- 1.) The Paris Union is the protection of industrial property.
- 2.) PCT Union - a patent cooperation agreement.
- 3.) The Union of Madrid is an agreement on the international registration of marks. Ukraine was one of the first to become a member of WIPO in 1970.

Questions for self-control:

1. What is the main goal of the priority areas of INTS development?
 - a) Greening
 - b) Automation of production
 - c) Introduction of Industry 4.0.
 - d) Space travel
2. What is not the subject (object) of intellectual property:
 - a) the latest technologies and production and other experience;
 - b) scientific discoveries, know-how, and inventions;
 - c) means of production and legal documents;
 - d) prototype or industrial samples of equipment, apparatus, tools, production lines.
3. The main types of license agreements are as follows:
 - a) exclusive, general, individual;

b) simple, exclusive, complete;

c) limited, open;

d) short, medium, long.

4. The prepayment includes:

a) reimbursement of the licensor's expenses before the implementation of the license agreement;

b) fixation in the agreement of the sums which are paid once (or in installments);

c) exchange of licenses or patents, which are presumed to be equivalent;

d) transfer of securities and granting the right to participate in profits.

TOPIC 2. INTERNATIONAL SCIENTIFIC AND TECHNICAL RELATIONS. CREATION OF INTERNATIONAL COORDINATION PROGRAMS, JOINT SCIENTIFIC AND TECHNICAL RESEARCH

Educational issues:

1. joint research

2. joint development and use of scientific and technical norms and standards

3. exchange of results of scientific works

4. conducting joint research (ND, DKR)

5. introduction and use of joint scientific and technical programs

Basic concepts: International scientific and technical relations, «Know-how», Engineering, International engineering, International technology transfer.

International scientific and technical relations are relations between the subjects of the world economy, connected with the development and use of world achievements of science and technology.

International scientific and technical relations reflect the links between:

- joint research;
- joint development and use of scientific and technical norms and standards;

- exchange of results of scientific works;
- conducting joint research (ND, DKR);
- introduction and use of joint scientific and technical programs.

In the organizational and production aspect, international scientific and technical relations can be classified into:

- exchange of general scientific and technical information;
- concluding and implementing contractual agreements on conducting R&D research;
- implementation of international scientific and technical programs on special issues (biotechnology, genetic engineering, etc.);
- specialization in the field of scientific and technical works;
- cooperation in the field of scientific and technical work (joint efforts of partners to specifically solve scientific and technical problems);
- international research and production associations.

International research and production associations can be as follows:

- international research organizations;
- international research institutes (IAEA Institute for Nuclear Research in Dublin);
- international scientific and technical laboratories (laboratory of strong fields in Warsaw);
- international scientific and technical centers (center for electric welding - Paton Institute).

Forms of international scientific and technical relations:

- exchange of licenses, patents (patent license market);
- "know-how" - providing technical experience, innovations and secrets of production;
- engineering - providing technological knowledge necessary for the purchase, installation and use of purchased or leased machinery and equipment;
- international exhibitions and fairs;
- international relations between scientific institutions;

- training and retraining.

International technology transfer

International technology transfer is not just the transfer of scientific and technical knowledge, but also the obligation to use it in any activity.

International technology transfer includes:

- selection and acquisition of technology;
- adaptation and development of new technology;
- development of local opportunities to improve technology taking into account the needs of the national economy.

Reasons for the rapid development of international technology exchange:

- rapid growth of STP;
- strengthening the uneven economic development of states;
- the purchase of advanced foreign technologies for developing countries is an important means of overcoming technical backwardness;
- monopolization of STP by large firms;
- intensification of competition between producers in the world market.

The main channels of technology transfer:

- in-house - subsidiaries of TNCs (accounting for 2/3 of world trade in licenses);
- intercompany - under licensing, cooperation, management, and other agreements with foreign firms;
- foreign trade - new technologies are supplied together with export supplies of machinery, equipment and other industrial products.

The main forms of technology transfer take place on both a commercial and non-commercial basis, depending on whether cash settlements are made between buyers and sellers of technology.

Technologies are the results of intellectual activity in materialized (equipment, units, tools, technological lines, etc.) and non-materialized form (various technical documentation, knowledge, experience, etc.).

The subjects of the world technology market are: the state, universities, companies (TNCs), research centers, individuals - scientists, specialists.

Forms of technology transfer on a non-commercial basis:

- information arrays of special literature, computer data banks, patents, directories, etc .;
- conferences, exhibitions, symposia, seminars;
- training, internships, internships of students, scientists, specialists, which are carried out on a parity basis by universities, companies;
- migration of scientists and specialists, "brain drain" from scientific structures.

The main flow of technology transfer in non-commercial form is accounted for by non-patentable information of ND DKR, business games, scientific discoveries.

The main forms of commercial technology transfer:

- sale of technologies in material form - tanks, units, equipment, production lines, etc;
- foreign investments, if they are accompanied by the inflow of investment goods, as well as leasing;
- sale of patents;
- sale of licenses for all types of patented property;
- know-how sales;
- joint holding of ND DKR, research and production cooperation;
- engineering.

The entire volume of technology transfer in a commercial form is accompanied or formalized by a license agreement.

One example of the creation of state coordination international programs is the Agreement on Scientific and Technical Cooperation within the member states of the Commonwealth of Independent States. March 13, 1992 (Republic of Kazakhstan, Republic of Tajikistan, Republic of Armenia, Russian Federation,

Republic of Uzbekistan, Moldova, Republic of Belarus, Turkmenistan, Republic of Kyrgyzstan, Republic of Azerbaijan, Ukraine).

Interstate cooperation in solving complex scientific and technical problems is implemented in the form of:

- interstate programs of basic research;
- interstate scientific and technical programs;
- interstate programs and projects for the development and development of new ones technologies;
- other interstate programs and projects.

International production cooperation is a derivative form of the international division of labor, which consists in the development of international industrial relations that arise and exist between internationally specialized entities in order to combine complementary production processes.

International production cooperation unites production resources in a single organizational and technical process. The implementation of such a process on an international scale involves the conclusion of appropriate contracts and agreements governing production, technical and trade and economic issues, as well as the development of adequate forms and methods of cooperation.

There are the following main features of international industrial cooperation:

- preliminary agreement of the parties on the terms of joint activities;
- the main method of cooperation is the coordination of partners of different countries;
- the presence of industrial firms owned by different countries in direct production cooperation;
- consolidation in the agreement of the main objects of cooperation: finished products, components and relevant technologies;
- distribution of tasks between the partners within the agreed program, assigning them production specialization, based on the main objectives of cooperation agreements;

- direct connection of mutual or unilateral supplies of goods by partners with the implementation of production programs within the framework of cooperation, and not as a consequence of the implementation of ordinary sales contracts.

General international cooperation is classified according to several criteria:

- by types: economic cooperation, industrial cooperation; production cooperation; scientific and technical cooperation; cooperation in the field of design and construction of industrial facilities; cooperation in the field of life; cooperation in other areas of economic activity;

- by methods of use: implementation of joint programs; contractual specialization; creation of joint ventures;

- by stages. pre-production cooperation; production cooperation; commercial cooperation;

- by the structure of relations: intrafirm and interfirm cooperation relations; intra-industry and inter-industry cooperation; horizontal and vertical forms of cooperation; mixed forms of cooperation;

- by territorial coverage: cooperation between two or more countries; cooperation within the region; interregional cooperation; world cooperation;

- by number of subjects: bilateral cooperation; multilateral cooperation;

- by the number of objects: single-subject cooperation; multidisciplinary cooperation.

The main ways of establishing cooperation in the literature are reduced to three methods: the implementation of joint programs, contractual specialization and integrated cooperation.

The implementation of joint programs of international industrial cooperation consists of contract cooperation and joint production.

The essence of contractual cooperation is that the customer instructs the contractor to carry out certain works in accordance with pre-determined requirements for terms, scope, quality of performance and other conditions. There are two types of international production cooperation: simple production (or it is also

called "classic contract") and the contract with the design and manufacture of a new product.

Joint production comes down to the fact that two parties (or more) from different countries come together to perform certain works or programs. For example, several firms from different countries are working to rebuild war-torn oil fields in Kuwait.

Contractual specialization, as another way to establish cooperative relations, is to differentiate between the subjects of different countries, so as not to duplicate each other, but complement each other. At the same time, they often divide the general program into subroutines, which run separately, but within the general program. Contractual specialization also involves the association of already a priori specialized entities to implement complex programs. Contractual specialization, like any other form of cooperation, smooths out the competitive opposition of firms from different countries.

Recently, in the world, and especially in post-socialist countries, integrative cooperation is developing quite rapidly, which is carried out in the form of combining the capital of several entities from different countries to achieve separate, mutually agreed goals. The most common type of integrative cooperation was the creation of joint ventures. At the same time, no less important type of integrative cooperation is the development of municipal cooperatives, which, however, have a much wider range of features than joint ventures.

Questions for self-control:

1. Depending on the content, "know-how" can be design:
 - a) technological, production, management, commercial, financial,
 - b) financia, production, managemen,
 - c) commercial, financial, echnological, production, management, planning,
 - d) technical, general, commercial.

2. What kind of International Research and Production Associations does the IAEA belong to?

- a) international research organizations;
- b) international research institutes;
- c) international scientific and technical laboratories;
- d) international scientific and technical centers.

3. What is the difference between know-how and engineering:

- a) know-how is knowledge, engineering is experience;
- b) they have the same meaning;
- c) know-how is experience, engineering is knowledge;
- d) both include staff training and retraining.

4. The license agreement is executed by:

- a) sale of patents; sale of licenses for all types of patented property.
- b) sale of "know-how", engineering.
- c) foreign investment, if they are accompanied by an inflow of investment goods, as well as leasing;
- d) the entire volume of technology transfer in commercial form

TOPIC 3. INTERNATIONAL LICENSING, EXCHANGE OF SCIENTIFIC AND TECHNICAL DOCUMENTS, PATENTS, LICENSES.

Educational issues

- 1. International licensing operations;
- 2. Patent license;
- 3. International licensing transactions;
- 4. Types of license fees for granting license rights to use the invention;
- 5. Royalties.

Basic concepts: International licensing, License, Patent, Cross-licensing, Royalties.

International licensing operations

Depending on the nature of the subject and the legal basis, international transactions for trade in scientific and technical knowledge are divided into two types:

1. operations for trade in patents and licenses;
2. operations for trade in technical services. Foreign trade operations for trade in patents and

licenses provide for the implementation of inventions of advanced production technology, technical knowledge and experience. The basis of these operations, as already mentioned, is the protection of inventions through patent law. The latter gives the patent owner a monopoly on the use of the invention. This means that during the period of validity of the patent only he has the right to manufacture, use and sell goods embodying the present invention, or use certain methods of manufacturing this product.

The same monopoly rights are granted by the country's patent legislation to owners of other types of industrial property (utility models, industrial designs, trademarks, etc.).

The main security document for an object of industrial property is a patent.

A patent for an invention is a certificate issued by the competent authority to the inventor and certifies his exclusive right to use the present invention. A patent gives ownership of an invention.

To buy or sell a patent (other security documents), you need to know the period of their validity. The validity of a patent is determined by national law and averages 15-20 years, although its actual validity is much shorter, approximately 6-9 years.

According to patent law, a patent is valid only in the territory of the country where it is issued. Therefore, in order to provide patent protection in other countries, it is necessary to patent in them the present invention. Today, almost all inventions are patented, so all new products entering the world commodity markets are patented. If the imported goods are not patented, their import is prohibited.

Most patent holders, especially large companies, themselves use patented inventions by producing and selling products embodying the invention. However, in modern conditions of fierce competition in the world market, the patent is increasingly used not as a means of protecting the economic activity of the patent owner, but as an independent object of trade agreements.

When carrying out foreign trade agreements of purchase and sale of a patent, its owner transfers his rights to another person (firm) in whole or in part.

If he transfers his rights to the invention to another person in full, it is considered a sale of the patent. Such an agreement is based on a patent agreement. As a rule, the patent agreement is applied to small and medium-sized firms, single inventors who do not have sufficient funds to independently develop their invention. Patents are usually bought by large firms.

If the patent owner transfers his rights to the invention in part, ie remaining the owner of the invention, allows for a certain period for a fee to use the invention, which is protected by the patent, it is the purchase and sale of a license to use the invention. The agreement is based on a license agreement.

'A license (patent) means a permit issued or sold by a patent owner (named licensor) to another person (named licensee) for the use of a protected industrial property on terms agreed between the parties.

A patent license must be registered with the patent office of the country of the applicant. Otherwise, the license is considered invalid. Granting licenses abroad for the use of inventions, technical knowledge and experience, as well as trademarks is called international licensing.

International licensing transactions are different from the purchase and sale of goods. This difference is as follows:

1. objects of licensing operations (inventions, advanced production experience, etc.) appear without a direct focus on the market;
2. The licensor's interest in granting a license is often caused not by purely commercial considerations, but by the desire to strengthen its position in the foreign market by establishing long-term relationships with partners;

3. in licensing transactions, in contrast to purchase and sale agreements, there is no complete alienation of the object of the agreement from its owner;

4. in licensing transactions there is essentially a transfer of the licensee's rights to the method of management.

International exchange of licenses in modern conditions is widely developing. Today it is the main form of scientific and technical exchange between countries.

The rapid growth of international trade in licenses is due to a number of factors, such as the development of science at the present stage of scientific and technological progress, the desire to quickly introduce new products to the market, intensification of competition in world commodity markets and others. Due to the growth of protectionism, international licensing has become one of the promising ways to ensure that companies penetrate hard-to-reach markets. International licensing is also used to expand direct merchandise exports.

Often the licensee agrees to purchase from the licensor the equipment necessary to establish production under the license, as well as individual parts and components for the collection of licensed products or raw materials for its production.

The advantages of trading licenses for the licensor are that he has the opportunity to:

- o in a short time to recoup the cost of research work used to develop the invention; to receive additional profit at the expense of fast development of the invention and release on its basis of new production;

- o use local, cheaper, labor;

- o ensure proximity to sources of raw materials; overcome currency and customs restrictions. The advantages of trading licenses for the licensee are: the ability to save on research; at the same time access to advanced scientific and technical achievements;

- o the purchase of licenses complements and expands its own research;

o the possibility of a diversification process; Purchasing a license allows you to save time, which is especially important in connection with the reduction of the period of obsolescence of the product and joining the latest technological advances.

At the same time, international trade in licenses has some negative consequences. First of all, the licensee's dependence on foreign equipment and technology is growing. At the same time, some of our own research is being discontinued, which ultimately slows down the development of national science and technology. However, international trade in licenses is beneficial for both the licensor and the licensee. It is noted that every dollar spent on the purchase of a foreign license, the effect is equivalent (excluding the time factor) in

US \$ 6.2, in the UK 3.1, in France

+ - 5.4, in Japan -!,: Dollars invested in R&D. The efficiency of purchasing licenses and producing products based on it is also achieved due to the fact that the license is much cheaper than their own R&D to obtain a similar result.

International licensing

International licensing is a structural element of international scientific and technical cooperation, which takes the form of international licensing trade in licenses for inventions, patents, technologies, know-how.

A license is a permit issued by the licensor to the licensee for the industrial and / or commercial use of the invention for a specified period for a fee. Licensed trade on the world market is carried out by concluding license agreements.

An important object of the license agreement is a patented invention. However, it should be noted that in modern conditions, increasingly typical are agreements that give the licensee the right to patented inventions, along with technical knowledge, experience, "know-how", as well as the right to use the trademark. An important condition of an international license agreement is to determine the type of license.

The main types of license agreements:

- Simple (non-exclusive) license - the licensor allows, under certain conditions, to use the invention of the licensee, while retaining the right to both use and issue similar licenses to other interested parties.

- Exclusive license (exclusive) - the licensor has the right to use the invention and allows the licensee to use the invention only.

- Full license - the licensor transfers all rights to the licensee.

The choice of one or another type of license granted depends, first of all, on the country or territory to which the license is issued and the nature of the invention. For example, in a small market, it is better to issue an exclusive license, because the presence of several licensees who have received a simple license will create undesirable competition in this market, which will ultimately reduce prices and affect the amount of license fees. As a rule, an exclusive license is issued for mass-produced and consumer goods. A full license is rarely used.

The licensee pays a certain fee to the licensor for granting the rights to use the subject of the agreement. The agreement stipulates the form of the license fee, the procedure for its payment, transfer of payments, etc.

Types (forms) of license fees for granting license rights to use the invention:

- Royalties are periodic interest deductions.
- Lump sum payment is a clearly defined amount in the agreement, which is paid once (or in installments).

- Cross-licensing is the exchange of licenses or patents that are presumed to be equivalent.

- A prepayment is a payment that reimburses the licensor for expenses prior to the license agreement.

- Transfer of securities and granting the right to participate in profits.

The most common are royalties, lump sums and combined payments.

Royalties are periodic deductions from the buyer's income during the term of the transaction. They are set in the form of certain fixed rates (as a percentage) and are paid by the licensee over agreed periods of time (annually, quarterly, monthly or until a certain date). Royalties may be determined differently; ways: And

- from the cost of products produced under the license;
- from the amount of sales of licensed products; |
- per unit of output or sold products as a percentage;
- from the amount of raw materials processed by the patented method, etc.

Simplified calculation of the amount of royalties (excluding taxes and other factors) can be derived by the formula:

$$P = P / C * 100,$$

where P is the royalty rate;

P - the licensee's profit;

C - annual selling price.

Royalties are the simplest and therefore the most common form of payment.

A lump sum payment is a fixed amount of remuneration paid at the same time. It can be held both once and in installments. Lump sum payment in its pure form is rare. As a rule, it is used in cases when the cost of the license is relatively small compared to the cost of equipment or when it is difficult to control the performance of the licensee.

The combined payment provides for the payment of an advance lump sum payment upon signing the agreement and the payment of royalties, depending on the object of production and sale.

The elaboration of the conditions concerning the obligations of the parties deserves great attention in the international license agreement.

The scope of the licensor's responsibilities usually depends on the subject of the agreement. However, in all cases, the licensor is obliged to provide the licensee with the opportunity to exercise the rights transferred to him under the agreement. This assistance may include:

- transfer of the stipulated technical documentation; adjustment of production and development of licensed products;
- training of personnel of the licensee, etc. The licensor is responsible for the novelty of the invention, for its economic efficiency, guarantees the possibility of production by the licensee of the same quality as in his enterprises. Under the

agreement, the licensee's responsibilities include ensuring the timely and correct payment of remuneration and, most importantly, the use of the subject of the license agreement by the licensee.

Know-how transfer agreements, in contrast to licensing agreements, have their own peculiarities and include the following:

- 1) the parties must clearly define the content of "know-how" that gives benefit, confidentiality or secrecy;
- 2) the whole set of responsibilities for the transfer of knowledge is set out in more detail;
3. special guarantee obligations of exporters in relation to the completion of the transferred developments, their current technical level and patent purity of the solutions used;
4. Much attention is paid to the responsibilities of the importer to maintain the confidentiality or secrecy of the transferred process, etc.

Strict financial sanctions for breaches of obligations by partners are also discussed.

Questions for self-control

1. The main aspect of foreign trade operations for trade in patents and licenses are:
 - a) purchase or sale of patents (other security documents);
 - b) granting abroad licenses for the use of inventions, technical knowledge and experience, as well as trademarks;
 - c) exchange of licenses in modern conditions;
 - d) protection of inventions by means of patent legislation.
2. The main form of scientific and technical exchange between countries:
 - a) foreign trade agreements for the sale of patents;
 - b) International exchange of licenses;
 - c) international trade in licenses;
 - d) mandatory patenting.

3. What is the average period of validity of the patent:

- a) 6-9 years;
- b) 10-12 years;
- c) 15-20 years;
- d) up to 50 years.

4. With an exclusive license:

- a) the licensor has the right to use the invention himself and allows the licensee to use the invention only;
- b) the licensor allows, under certain conditions, to use the invention of the licensee, while retaining the right to both independently use and issue similar licenses to other interested parties;
- c) the licensor fully transfers the rights to the licensee;
- d) permission issued by the licensor to the licensee for industrial and / or commercial use of the invention

TOPIC 4. INTERNATIONAL ENGINEERING

Educational issues

- 1. Engineering related to the preparation of the production process;
- 2. Types of engineering services;
- 3. Tasks of international engineering;
- 4. Features of engineering as a type of foreign trade operations;
- 5. Reengineering;
- 6. Consulting engineering.

Basic terms and concepts: International scientific and technological exchange, technology, economic feasibility of technology exports, economic feasibility of technology imports, segments of the world technology market, intercompany international technology exchange, intrafirm international technology

exchange, simple license, exclusive license, full license, franchising, leasing, rating, high engineering.

Engineering-type services appeared in developed countries in the 1960s and have been widely developed to date. related to the implementation of projects for various purposes, through the most rational selection and efficient use of resources, as well as methods of organization and management, based on modern scientific and technical advances and taking into account the specific conditions and factors of project implementation.

International engineering - the activity of providing a range of services of production, commercial and scientific and technical nature, carried out by both specialized firms and industrial. construction and other companies.

The whole set of engineering services can be divided into two groups of services:

1. related to the preparation of the production process (pre-project, project, post-project and special);

Engineering related to the preparation of the production process:

- a) pre-project services;
- b) project services:
 - basic engineering - preparation of preliminary engineering studies and projects, master plan, recommendations, preliminary cost estimate of the project, ;
 - detailed engineering - submission of proposals for the final project, detailed study of the project;
- c) post-project services:
 - preparation of contract documentation;
 - project management, supervision and inspection of works;
 - acceptance tests after commissioning;
 - training of engineering and technical staff;
 - preparation of conditions for sales;
- d) special services due to specific problems of creation of this object.

2. to ensure the normal course of the production process and sales. This group includes work related to the optimization of operations, enterprise management and sales of its products.

Engineering related to the process of production and sale of products:

- a) services for the management and organization of the production process;
- b) equipment inspection and testing services;
- c) facility operation services;
- d) assistance in financial matters;
- e) product sales services;
- f) services for the implementation of information support systems, computer technology.

Depending on the scope of engineering services, there are:

- - design and consulting engineering;
- - technological engineering;
- - civil engineering;
- - management engineering.

Thus, engineering acts as an important means of improving the efficiency of capital invested in the object. Its task is to obtain by customers the best (optimal) results from capital investments and other costs at the expense of:

- systematic approach to project implementation;
- variety of technical and economic developments, their financial evaluation and selection of the best option;
- development of the project taking into account the possibility of using advanced construction and production technologies, equipment and materials;
- application of modern methods of organization and management of all stages of project implementation.

As an independent type of international commercial transactions. engineering involves the provision on the basis of an engineering contract by one party (called a consultant) to the other party (named by the customer) of a complex or - certain types of engineering services related to the design, construction and commissioning

of the facility, with the development of new technological processes at the customer's enterprise, with the improvement of existing production processes up to the introduction of the product into production.

The provision of a full range of services and supplies required for the construction of a new facility on the basis of an engineering contract is called integrated engineering. It includes three separate types of engineering services:

1. consultative engineering, which is mainly related to intellectual services provided in the design of facilities, development of construction plans and control over the implementation of works;

2. accrues the provision to the customer of the technologies necessary for the construction of industrial facilities and their operation (agreements on the transfer of production experience and knowledge, development of projects for energy supply, water supply, transport, etc.);

3. construction or general engineering, which consists mainly in the supply of equipment, machinery or installation of equipment, taking into account, if necessary, engineering work.

Each of these types of engineering services can be the subject of a separate contract.

Engineering as a type of foreign trade operations has its own specific features:

- is one of the forms of production services, which is not directly embodied in material form, but in its useful effect. This useful effect may have a material carrier, such as design and technical documentation, graphics, drawings, etc., Or may not have, as training, management, etc .;

- engineering is ultimately associated with the preparation and provision of the process of production and sale of intermediate and final consumption of material goods.

- the production services themselves are part of engineering, as a separate area of production, engineering is commercial in nature, ie becomes the object of sale;

- Engineering differs from licenses, know-how and other forms of technology. Engineering services are reproducible services, the cost of which is determined by the socially necessary time spent on their production and those that have many vendors to implement them. Licenses and "know-how" are associated with the implementation of new currently unreproduced knowledge production, which have a limited number of sellers.

In practice, the provision of engineering services is often combined with the sale of know-how. In this case, the "know-how" is covert and does not stand out in an independent agreement. This leads to a confusion between the concepts of "engineering services" and "technology exchange". In reality, engineering services are a way of transferring new technological and other knowledge, but the services themselves are a commodity that differs from technology. Engineering firms, for example, in the field of management are not engaged in planning, but in developing new methods of planning production based on marketing research of the foreign market, not accounting and reporting, and finding new approaches to accounting and reporting, modernization of management structures, control over product quality, etc.

Recently, a new type of services has appeared on the world market of engineering services - reengineering services provided by foreign engineering firms.

Reengineering is an engineering and consulting services for the restructuring of the organization and management of production, trade and investment processes of the economic object in order to increase its competitiveness and financial stability. Reengineering is divided into two types: crisis and development reengineering.

The first is aimed at solving the crisis problems of the enterprise. It is used when the result of financial and commercial activities of the enterprise is constantly declining, its competitiveness falls sharply, there are tendencies to bankruptcy and a set of measures is needed to overcome the crisis situation. Today, many enterprises of Donetsk region and Ukraine feel the need for crisis reengineering.

The second type of reengineering is used in those cases when the dynamics of development is declining and the current structure of organization and management

of the enterprise has already reached the limit in making a profit. In the process of reorganization of the management system of the economic entity on the basis of reengineering, the transition from the business process to the business - reengineering process is carried out. The business process is the action of management staff in the business process. Business process reengineering is the optimization of the business process management system, taking into account foreign economic activity.

Basic conditions of international agreements on the provision of engineering and technical services

Depending on the nature and scope of engineering services provided, different types of contracts are used in practice. Engineering consulting services are usually formalized by a contract for the provision of engineering consulting services or a contract for the secondment of a specialist to perform a certain type of work.

Engineering and construction services are usually provided on the basis of a contract or a contract for technical assistance in construction. If the construction is carried out at the expense of the buyer, the provision of technical services by the seller is made out in three ways:

1. taking into account the list of these services in the contract of sale of equipment;
2. concluding a special agreement on export deliveries and installation of equipment;
3. concluding an agreement on the provision of technical services in addition to the contract of sale of equipment.

In international trade practice, various variants of standard contracts are widely used in engineering operations, the most interesting of which is the "Guide to drawing up an international agreement on consultative engineering" developed by a group of experts of the UNECE Trade Development Committee, taking into account related aspects. technical assistance. This "Guide" contains a complete list and description of the conditions required for inclusion in the contract between the

consultant and the customer, as well as a list of services provided by the consulting engineer.

Consider in more detail the content of the international agreement on consulting engineering.

First of all, it should be noted that consultancy engineering contracts may cover the whole range of services or specifically defined services, which must be clearly stated in the contract or its annex. Further, Consulting Engineering can cover all stages of a project or one of them. After the successful completion of one stage, contracts can be concluded for the next stages.

An international consultative engineering agreement, like any other agreement, has such sections as the parties to the agreement, the preamble, the subject of the agreement, the obligations of the parties, the methods of accrual of remuneration, etc. However, the content of the contract for consulting engineering has its own specifics.

When determining the parties to the contract, it should be borne in mind that the project may involve many legal entities, including firms, financial institutions, government agencies and others. Several contracts related to the same project may be concluded. Therefore, in each contract it is important to provide who exactly (from a legal point of view) is a party to it. If several legal entities from each party take part, this agreement clearly defines the responsibility of each of them.

Defining the subject and scope of the contract, it is necessary to clearly define the nature, scope, place and purpose of the project, and then the scope of the contract. The consultant usually cannot transfer his contract to another person without the written consent of the customer, and this must also be specified in the contract.

The development of a section on the responsibilities of a consultant deserves special attention. It gives a clear description of the tasks of the consultant at different stages of the project and defines his powers. The contract must contain provisions on the provision of services by a consultant qualified, with all the foresight, honesty and efficiency of all its tasks in accordance with professional standards. The responsibilities of the consultant under the contract include:

- conducting preliminary feasibility studies and research related to design;
- planning and preparation of funding programs;
- preparation of design documentation, drawings and specifications;
- appointment of tenders;
- evaluation of proposals for the construction of facilities;
- advising the customer in relation to all applications for contracts, bidders, prices and estimates for the implementation of works;
- construction control;
- control over the manufacture of equipment and its connection, recruitment;
- coordination of other project participants;
- technical cooperation and other, up to the transfer of the customer) 'after the completion of the draft report on the work performed.

The responsibilities of the customer include the urgent transfer of instructions, providing the consultant with documentation, special knowledge, premises, participants and equipment; providing information on local legislation in the field of industrial and social relations, providing special services and cooperation with a consultant, etc.

The contract specifies the liability of the parties for violation of its terms, which may have financial and other consequences.

The section on the consultant's remuneration has its own peculiarities. It indicates the methods of his reward.

Payment for the services of a consultant includes the coverage of various expenses and the corresponding net income of the consultant. Expenses may include salaries of technical staff, expenses related to administrative and clerical staff, additional payments, expenses for equipment, office space, taxes and other general expenses. As a rule, the costs associated with engineering are specified in the annex to the contract.

Costs are calculated based on one or a combination of the following methods: time; labor costs multiplied by overhead costs, plus costs; part of the cost of

construction projects as a percentage; cost plus interest remuneration or value plus fixed remuneration; previous fee, etc.

The contract between the customer and the consultant contains a stipulation on the remuneration of the subconsultant. If there are no such provisions in the contract, the services of the subconsultant are paid by the consultant. The consultant's payments are made in the currency agreed by the parties.

When drafting the contract should pay attention to the article on taxes, other levies and duties. It is necessary to consider: what taxes and penalties should be paid and which party should pay them; issues of double taxation and tax exemption. The contract specifies the one who pays the duty.

An important issue of the agreement is the issue of intellectual property and patented information. The parties must determine whether the technical documentation can be used a second time by the other party for other projects. If the provision of advisory services is related to the granting of rights to patents and licenses, industrial property, the parties must decide who bears the costs associated with their use. The parties must agree on the right of one of them to use the developments for which the other party is applying for a patent.

There must be a stipulation of secrecy in the contract. It is forbidden for both the customer and the consultant to disclose confidential information.

The consultant usually provides insurance at his own expense, covering his own work, the equipment he works with, and staff insurance.

Often an important task of the consultant is to provide advice to the customer on the standards and norms that must be used in connection with this project.

Questions for self-control

1. What is the attractiveness of international engineering for Ukrainian companies?
2. In which cases are lump sums more appropriate than royalties?
3. What is technology?

4. Is Ukraine an equal participant in international scientific and technological exchange?
5. Why do developed countries have a dominant position in the technology market?
6. What are the advantages of non-commercial technology transfer?
7. Does leading domestic firms make sense in technology exports?
8. Why has international scientific and technological exchange been developing at an accelerated pace in recent decades?
9. In which cases is international leasing more attractive than hiring?
10. Is the state able to suspend the "brain drain"?

TOPIC 5. COOPERATION IN THE TRAINING OF SCIENTIFIC AND ENGINEERING PERSONNEL

Educational issues:

1. Types of cooperation of scientific and technical worker;
2. Scientific internships;
3. Scientific business trips;
4. Integration of the national research area into the European Research Area;
5. Academic mobility (Erasmus);
6. Attending international conferences, congresses, symposia.

Basic concepts: Adjunct, Graduate student, Production-oriented (branch) scientific institution, Scientist, Grant, European Research Area, Scientific (scientific and technical) products, Scientific (scientific and technical) work, Scientific (scientific and technical) project, Scientific result, Scientific and technical activity.

Types of cooperation of scientific and technical workers:

- Scientific internships;
- Scientific business trips;
- Academic mobility (Erasmus);
- Joint research and development with international teams of specialists;

- Attending international conferences, congresses, symposia;
- Mutual exchange of specialists.

Scientific internships:

Who can use: Researchers (scientific and pedagogical), graduate students and doctoral students;

Why it happens: Referrals for scientific internships can be initiated by a researcher (scientific and pedagogical) or at the initiative of a scientific institution or institution of higher education.

The purpose of scientific internship: is to increase the level of theoretical and practical training, conducting author's research using modern equipment and technologies, mastering the latest unique methods, gaining experience in research, information exchange and expansion of scientific contacts.

The term of scientific internship may not exceed two years.

Basis of internship: An agreement is concluded with persons who are sent for scientific internship to send them for scientific internship to another scientific institution, institution of higher education.

Financing of expenses related to scientific internship may be carried out at the expense of a scientific institution (higher education institution) that sends a person for scientific internship, funds provided in the State Budget of Ukraine under the relevant budget program, grants, funds of the host country, and other sources not prohibited by law. The receiving party is considered to be a scientific institution, another research organization, a higher education institution that has issued an invitation for a scientific internship. The host country may be a non-resident of Ukraine.

Scientific business trips:

Who can use: Researchers (scientific and pedagogical), graduate students and doctoral students;

Why it happens: According to the decision of the management the scientific (scientific and pedagogical) worker can be sent on a scientific business trip.

The term of scientific trips: The duration of a scientific business trip may not exceed 90 days, except in cases where the business trip is connected with a long-term scientific expedition.

Financing of expenses related to a business trip may be carried out at the expense of the general and special fund of a scientific institution (institution of higher education) that sends a person on a business trip, funds provided in the State Budget of Ukraine under the relevant budget program, grants, party funds receiving and other sources not prohibited by law.

Integration of the national research area into the European Research Area through the implementation of its priorities, in particular:

- ✓ increase the efficiency of the national research system;
- ✓ optimization of international cooperation to address global challenges facing humanity;
- ✓ ensuring participation in framework and joint international programs of the European Union;
- ✓ coordination of the strategy of creation of state research infrastructures with the road map of European research infrastructures;
- ✓ creating favorable conditions for the mobility of scientists;
- ✓ ensuring gender equality;
- ✓ full exchange, transfer and access to scientific knowledge.

Academic mobility (Erasmus)

The European Union's ERASMUS + program supports international cooperation projects, strategic partnerships, activities and learning mobility in the fields of education, training, youth and sport.

Between 2014 and 2020, the program provided more than 4 million Europeans with the opportunity to study, train, gain experience or volunteer abroad. In the field of education and training, the Erasmus + initiative is known for the opportunities it provides for students to study abroad, as well as the opportunities it provides for higher education staff. € 14.7 billion (!) Has been allocated for the costs associated with the program.

Erasmus + intensifies its activities in the fields of education, youth and sports in three different areas:

1. Credit mobility - Learning mobility for people from all areas of general and vocational education

2. Cooperation projects - Strategic partnership with scientific societies Sector Skills Alliances, IT platforms, including eTwinning partnerships between EU higher education institutions and partner countries

3. Supporting reforms - Supporting the agenda for the modernization of higher education in all areas of general and vocational education, development and implementation of recognized EU transparency instruments; Establish a network of experts on higher education reform, as well as support dialogue on education policy.

Currently in the KPI. Igor Sikorsky has credit mobility projects with more than 50 Erasmus + partner universities. According to the results of the 2015 and 2016 projects, 122 students, 24 graduate students and 61 research and teaching and administrative staff, a total of 207 participants, took part. 25 students, 2 graduate students and 10 NNPs are realizing their right to academic mobility within the Erasmus + program in the autumn semester of 2017-2018 academic year.

Among the partner universities under the credit mobility program are such well-known universities as the Wroclaw University of Technology (Poland); University of Granada (Spain); Polytechnic University of Valencia (Spain); Catholic University of Leuven (Belgium); University of Lorraine (France); Milan Polytechnic (Italy); Friedrich Schiller University of Jena (Germany); Middle Eastern Technical University (Turkey) and many others.

Questions for self-control:

1. What does not apply to the types of cooperation of scientific and technical workers?

- a) Scientific business trips;
- b) Attending international conferences, congresses, symposia
- c) Mutual exchange of specialists

d) Creative mobility.

2. The term of scientific internship may not exceed:

a) 3 months (90 days);

b) 6 months;

c) 1 year;

d) 2 years.

3. Learning mobility for people from all fields of general and vocational education is called in the Erasmus program:

a) Credit mobility;

b) Cooperation projects;

c) Supporting reforms;

d) no correct answer.

4. What types of funding for research collaboration costs (business trips, internships, etc.) do not exist?

a) at the expense of the scientific institution that sends the person;

b) at the expense of the State Budget of Ukraine;

c) at the expense of the host party;

d) at the expense of the person's own funds.

TOPIC 6. HOLDING INTERNATIONAL SCIENTIFIC AND TECHNICAL CONFERENCES, SYMPOSIA

Educational issues

1. Scientific conference;

2. Conference organization;

3. Forms of the conference;

4. These (abstracts) for the conference;

5. Classification of these (abstracts), thesis structure;

6. Algorithm for thesis preparation.

Basic concepts: scientific conference, Symposium, thesis, Seminar, Congress.

Types of conferences (Depending on the direction): 1.) Scientific and theoretical conference; 2.) Scientific and Practical Conference; 3.) Scientific and technical conference.

Types of conferences (By composition of participants): 1.) youth, 2.) for mature scientists.

Types of conferences (By frequency): 1.) Annual; 2.) Disposable.

Types of conferences (Depending on the area covered): 1.) international; 2.) republican; 3.) interregional; 4.) regional. In turn, the regional are divided into urban, between universities, specific universities.

Types of conferences (Depending on the subject): 1.) highly specialized; 2.) broad topics.

Conference structure:

- Registration of participants with the distribution of the conference program (indicating the order of speeches);
- Opening and plenary session with a speech by the conference organizers;
- Work in sections or round tables with listening to reports or posters and further discussion;
- Coffee break in the middle of the conference or a buffet or banquet at the end;
- Cultural programs (excursions) for non-resident guests;
- Publication of a collection of scientific papers and a certificate of participation. Often the collection is issued to conference participants upon registration.

Conference organization. In order to properly organize the conference it is necessary to comply with all organizational stages. They are as follows:

Planning and defining the idea of the conference. The form and name of the event are determined.

1st organizational stage. Determining the composition of the conference participants, appointing working groups and the organizing committee, topics, sectors of the conference and more.

Information stage. Notification of the date and time of the information letter.

2nd organizational stage. Receipt of applications, registration fees and abstracts from future conference participants. Information letters are sent to selected participants.

Conference

The last stage involves meeting and settling conference participants, opening the event, hearing reports. Excursions can also be planned during the event. After the conference, the best speakers can be identified and awarded.

Forms of the conference:

- ✓ Full-time, participants come and take part in the conference.
- ✓ Correspondence - the conference is held without the participation of scientists, participants send abstracts and an information article to the mail of the organizing committee.
- ✓ Internet conferences - held on the website of the event, organization, or forum, as a collective discussion.
- ✓ According to its status, the conference is an intermediate link between the seminar and the congress.

There are no clear rules for holding the conference, they are determined by the organizing committee and reported in an information letter. In order to participate in the conference you need to fill out an application in a special form, then you need to send abstracts of prepared work.

After that, it is necessary to wait for the response of the organizing committee, if it is positive, the participant is sent an invitation, if necessary, a current account is sent to which it is necessary to transfer funds for participation in the event.

These (abstracts) for the conference. Abstracts are concisely formulated key aspects, main ideas, ideas and concepts of any scientific work. Abstracts perform the following functions:

1. allow the new author to present himself and his work to the public
2. attract sponsors for projects and startups, help find sources of funding
3. focus on the author and his scientific work
4. reveal the potential and significance of the study.

Classification of these (abstracts):

Authorship. Abstracts can be compiled on the basis of own scientific work or other people's publications. In the second case, the material must be studied in detail, analyzed. There are major and minor points that serve as a concise statement.

Place of submission. To clarify how to write good theses, you need to know exactly where they will be voiced. Conferences can become an international event. Abstracts are voiced in seminars for magazines.

Filing form. Abstracts for the conference can take the form of publication, presentation with a speech, hearing in absentia. For example, abstracts for publication in a scientific collection are written concisely, clearly and informatively. If there is a presentation, in some cases it is allowed to deviate towards a joke, a case from practice.

Complexity. Abstracts can be: simple - reveal the key problem; medium complexity - contain a description of the primary ideas; complex - as widely as possible reveal the essence of the work, include theses of other types.

The order of writing. Most abstracts are written before the dissertation (or other work) is fully prepared. The main difficulty of the author in this order of writing - not fully explored the question. But theses in turn help not to lose the main thing. If the basis of theses is already ready material, the result is formed according to the accurate plan. As practice shows, it is much easier to work.

The main content. Abstracts contain a statement of the problem, a description of new techniques, results, recommendations for research. That is, it is a scientific work in miniature.

Style. If theses are strictly set out and consist of short scientific descriptions, it is a verb system. It is based on the use of verb predicates. If the author succinctly records scientific data and almost does not use verb predicates - this is a nominative system.

Abstracts of conferences are difficult to prepare only one type. This approach is not required. In practice, the most successful are the combined theses. This does not mean that all types should be included in one material. It is enough to be limited to 2-3 points. For example, nominative theses of your own article, written after its completion.

Thesis structure. For abstracts that are devoted to the description of the problem, the following sequence is recommended:

- brief introduction and relevance;
- goals, objectives;
- conducting a literary review of the analysis of the theory and positions of other authors;
- vectors of events and problem solving;
- results, evaluation of results.

Algorithm for thesis preparation.

1. Set goals and specify the results you want to achieve. In most cases, these are similar concepts - to impress, to successfully present their work, to declare their own effectiveness. And we will not talk about scenarios when these are needed just to "shoot".

2. Mark the working version of the name. It should correspond to the theme and concept of the conference, as well as the main scientific work.

3. Study the structure of the material, having previously studied the types and features of theses.

4. Carry out an in-depth analysis of the information that is the basis of theses. It may be necessary to supplement, clarify, reduce the material.

5. Check the logic, the correct sequence of material and evidence.

6. Find out the current design requirements.

7. Prepare a meaningful part of the thesis based on the plan.
8. Carry out a thorough check of the text for errors, uniqueness, correctness of design, completeness. It is recommended to read the material several times with an interval between inspections.
9. Send abstracts and application for participation in the scientific event.

Questions for self-control:

1. Discussion of participants prepared reports on the results of scientific, exploratory research:
 - a) Congress;
 - b) Symposium;
 - c) Seminar;
 - d) scientific conference.
2. What types of conferences (depending on the area covered) is divided
 - a) international;
 - b) republican;
 - c) regional;
 - d) interregional.
3. At what stage is it: receiving applications, registration fees and abstracts from future conference participants, sending information letters?
 - a) 1st organizational stage.;
 - b) Information stage;
 - c) 2nd organizational stage;
 - d) The last stage.
4. Abstracts contain a statement of the problem, a description of new techniques, results, recommendations for research:
 - a) Complexity;
 - b) Authorship;
 - c) The main content ;
 - d) Style.

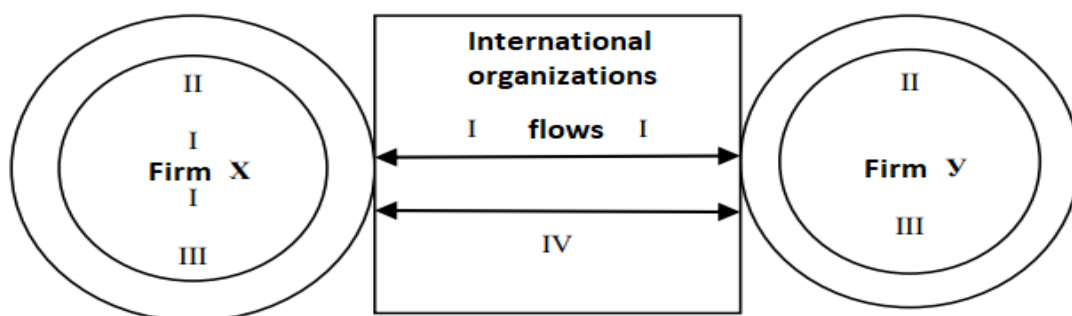
TOPIC 7. ESTABLISHMENT AND FUNCTIONING OF INTERNATIONAL RESEARCH INSTITUTES AND ORGANIZATIONS

Educational issues

1. The place of international organizations in the system of international business;
2. Tasks and functions of modern international organizations;
3. The main stages of emergence and development of international organizations;
4. International Institute;
5. Organizational structures of the term «International Institute»;
6. Criteria for international organizations;
7. Typification of modern international organizations.

Basic concepts: International organization, Symmachia, Amphitheaters, International commissions (committees), International customs, The law of an international organization, The functions of an international organization, The method of decision-making, International employee.

International organizations are also needed for the normal existence and dynamic development of companies in various forms participate in international business and during implementation commercial transactions fall on domestic or international restrictions that vary from country to country and region to region. Obviously that it is the needs of international business that have historically been the root cause creation of international organizations.



I - Flows (goods, services, information, financial and labor resources);

II - Internal restrictions (national environment of the firm);

III - International restrictions (international environment);

IV - International organizations

Tasks and functions of modern international organizations:

- study and development of measures to address the most important MEV problems;
- ensuring the stabilization of currencies; promoting elimination trade barriers;
- allocation of funds to assist technological and economic progress;
- stimulating the improvement of working conditions and labor relations;
- decision-making and recommendations in the field of regulation world economic relations.

The main stages of emergence and development of international organizations. Conditionally separate the five main stages of origin and development international organizations.

Epoch slave-owning states. Creation in the IV-VI centuries. B.C. in ancient Greece unions (coalitions) of states that had common military-political goals (symmachia) and religious-political alliances of tribes and cities with a common sanctuary, treasury, rules of warfare (amphitheater).

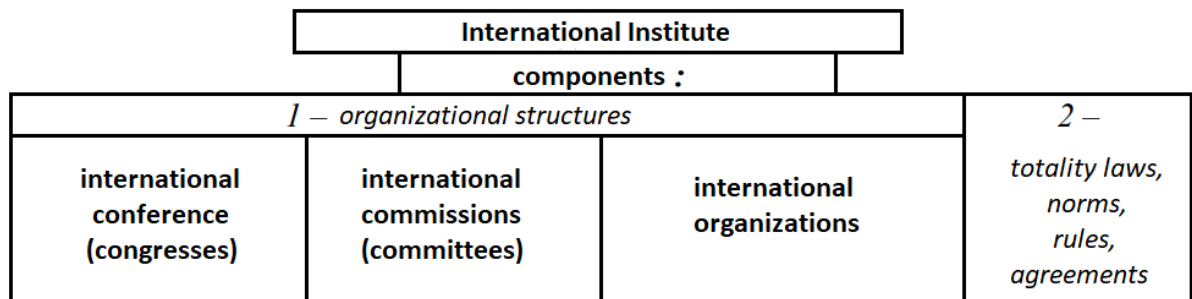
Period feudal fragmentation. Creation of the military (during the threat of side of a stronger common enemy) and trade unions (union of the cities of Lubeck, Stralsund, Rostock, Wismar, Hamburg and others. - Hansa, which existed from the XIV to XVII centuries).

The era of the great geographical discoveries, industrial revolutions and formation world market. Creating a number of sectoral and functional organizations that had the features of modern international institutions: the presence of agreed goals, permanent body, procedure, etc. - this Danube Commission (1856), Universal Postal Union (1874), International Telegraph Union (1875), International Union for the Protection of Industrial Property (1883) and others.

The period between The first and The second world wars. Creation of the world's first international organization universal type with a wide (non-specialized) competence - the League of Nations in 1919, as well as a number functional and sectoral organizations, general the number of which has tripled

The modern stage development international organizations. Begins in 1945, is characterized by expansion competence and complicating the structure of international organizations. The following features are characteristic: increase of influence international organizations for international life, in particular economic; strengthening the role of non-state actors organizations in solving world problems; appearance and successful functioning of a universal organization global type - the UN; formation of others functional organizations of global type; expanding the scope of activities of international organizations

"International institute" includes two components, and international organizations as a kind of such international institute, act both as producers and as users of a set of laws and regulations.



Organizational structures of the term "international institute" study in three senses: international conference (congress); international commission (committee); international organization. All these institutions have a common community, in particular the international sphere of activity, the international nature of competence and the appropriate mechanism for regulating international relations. They differ in their place and legal status in the IEA system, in particular, international conferences and international commissions, as a rule, are not subjects of international law, and international organizations are.

Organizational structures of the term «International Institute».

International conferences (congresses) - temporary international bodies whose activities are not regulated by international law norms due to the lack of international legal personality. The work of conferences is built according to its own rules of procedure and is regulated by temporary organizational structures.

International commissions (committees) - are usually created on based on an international agreement, have a permanent nature of activity and create certain mechanisms to ensure it.

The definition of an international organization has two approaches: narrowed (institutional) and expanded.

- According to the narrow interpretation, the international organization Is a stable institution of two or more international parties relations, which is created by multinational parties (IEA subjects) and has agreed goals, competence, its permanent bodies, as well as other specific political and organizational norms.

- According to the extended approach, the international organization - it is any group or association that in its activities goes beyond one country and has a permanent body structure. However, it is the narrow approach that defines the essence of international organizations as subjects of the IEA.

Criteria for international organizations. Based on international law, belonging to international organizations define the following criteria:

- 1) contractual basis;
- 2) association of multinational parties (states, legal and individuals);
- 3) agreed, common, permanent goals;
- 4) availability of an international constituent document;
- 5) permanent organizational institutions;
- 6) political and organizational norms (statute, procedure, membership, decision-making procedure);
- 7) legal equality of participants;
- 8) independent rights and responsibilities;
- 9) compliance with the objectives of creation.

Typification of modern international organizations. There are at least three international organizations basic criteria: membership of states, geographical coverage, competence. In addition, the description can be supplemented by features of legal status, nature of activity, period of operation and the order of joining the organization:

1 membership of states:

interstate (intergovernmental): UN, EU, OIL, IMF, World bank, WTO;

non-state: European business congress, International organization consumers;

mixed: International organization labor, Interpol.

2 geographical coverage:

global: UN, IMF, World bank, WTO;

regional: EU, NAFTA, Mercosur;

subregional: GUAM.

3 competence:

universal: EU, BSEC, SYSTEM;

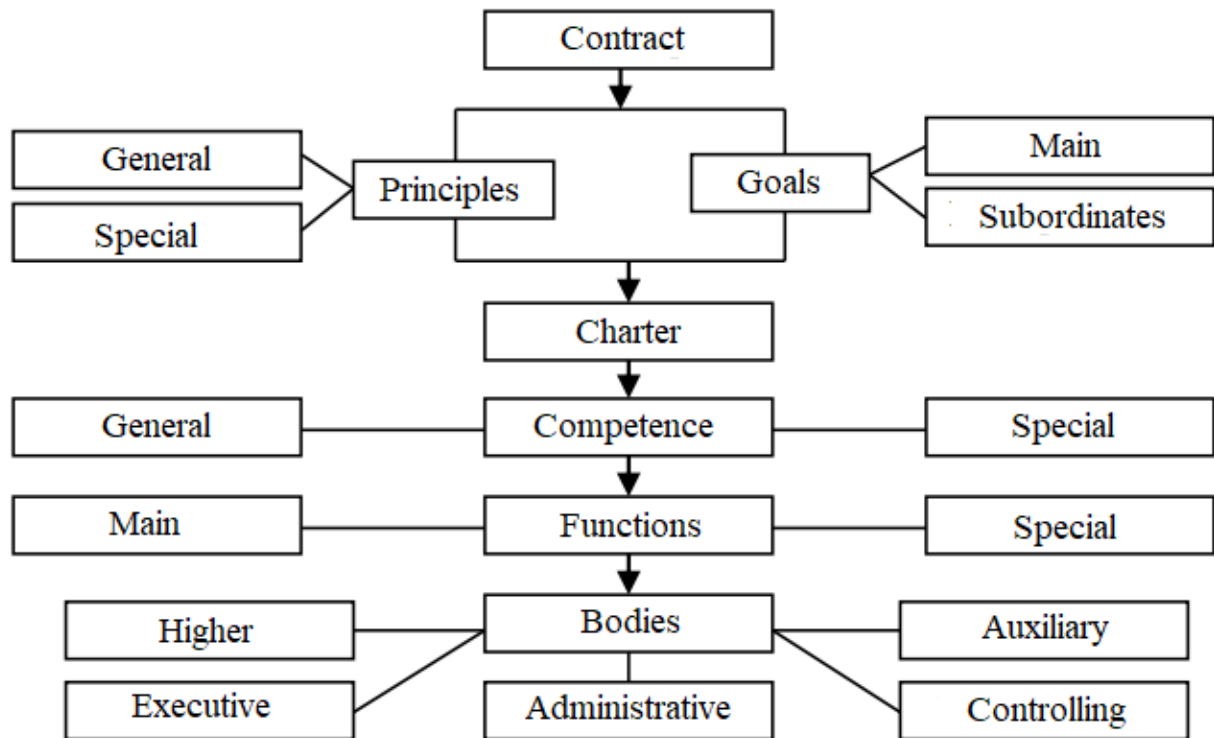
special: WTO, IMF, Worldwide postal union, ILO, OPEC.

Each organization defines its goals, scope of competence, functions, organizational structure, decision-making mechanism and their implementation.

The main purpose (goal). The main purpose (goal) of the organization determines why, in fact, its founders decided to unite. Often the main goal is formulated quite clearly. For example, the International Bank for Reconstruction and Development (IBRD) stated its goal: "Facilitate the reconstruction and development of member states' territories by encouraging investment for production purposes." Here is not only the goal, but also how to achieve it. It happens that the main goal is formulated in general terms, embracing a wide range of international relations. Thus, the main goal of the World Trade Organization (WTO) is to "strengthen the world economy."

Subordinate goals. Subordinate goals specify the main goal, more clearly determining the scope of the organization. For example, the WTO, after proclaiming the main goal, further formulates the goal, which, in fact, reveals its essence:

"focusing on expanding trade, increasing investment, employment and increasing incomes around the world"; that is, it is determined that trade is the main area of activity of the organization.



Goals of international organizations. If the goals are clearly defined, their achievement is real reasonably, such an organization will function effectively (in other circumstances). Usually the goals of international organizations are divided into main and subordinate.

Objectives charter competence. The main and subordinate goals of the organization can not always be distinguished. It happens that in terms of content, the goals proclaimed by the organization are equivalent, have the same rank. For example, the goals of the European Union: the formation of a close union of the peoples of Europe; promoting balanced and common economic and social progress; approval of the European Union in the international arena through the implementation of a common foreign policy. There are three, albeit interconnected, but independent areas of activity: domestic policy (within the EU), socio-economic sphere and foreign policy.

The goals of the international organization, as well as the principles of its activities are enshrined in the Charter, which is a constituent document. All members of the organization must adhere to the basic provisions of the Charter in their actions.

The goals of organizations largely define its scope competence. The competence of the organization is an object, a sphere of subject activity, a range of problems which it will be engaged in. In addition, the concept of competence includes a set of powers that the organization is endowed to perform its functions.

Competence of the organization. Depending on the range of problems that organizations deal with, they are divided into organizations of general competence and organization special competence.

- Organizations of general competence are immediately large the number of spheres of international activity - economic, political, cultural, environmental, social, etc. Such organizations include the United Nations, almost all regional integration organizations, the OECD and some others.

- Special competence organizations have a narrower range and more specific areas of activity. For example, the WTO is all its own carries out activities in the field of international trade. Competence The World Bank is limited to providing long-term loans and financing for development programs in predominantly poor countries; the competence of the IMF is to regulate the international monetary system and provide short-term loans.

Functions of international organizations. Based on the goals and competencies of the organization, its functions are determined. The functions of an international organization are considered to be the external manifestation of its activities to perform its tasks. The organization may perform its functions within the defined competence.

Functions are divided into main, regulatory, coordinating, controlling and operative.

The main function is to determine the relevance of interests members of the organization for its purposes. It is closely related to the content competencies of the organization.

Regulatory functions are to develop standards behavior of members of the organization, methods and forms of achieving goals, as well as in regulating relations with other subjects of international law.

Operational functions are to perform specific work organization in accordance with its goals and competence.

The controlling functions are to monitor the implementation of the organization's decisions, as well as the development of the situation in the field of its activities (monitoring).

The essence of the **coordinating function** is to reconcile the interests and actions of members of the organization. This is especially important for a universal organization, with broad areas of activity, a large number of members and a variety of goals (for example, the UN, which has a special body - the Economic and Social Council (ECOSOC) to coordinate economic and social activities of both UN and other bodies of its organizations).

Classification of bodies of an international organization. The functional structure of the organization is closely related to its organizational structure. Individual organs are formed for certain functions. Each structural unit of the organization has a clearly defined competence of its activities. The organizational structure differs in hierarchy and subordination, higher, executive, auxiliary bodies are determined.

The bodies of an international organization can be classified by different criteria.

The functional principle is most often used, according to which bodies are divided into higher, executive, auxiliary, controlling and administrative.

Higher (main) bodies are in charge of the most important activities of the organization, make decisions on important issues, and these decisions are final. The supreme body determines the general organization policy, its principles; considers budgetary and financial questions; has the right to revise and amend the charter; makes decisions regarding the admission of new members to the organization or expulsion from its membership. However, higher authorities do not

perform operational functions. Most often, the highest bodies include representatives of all states, and then such the body is called a plenary.

Executive bodies implement decisions and resolutions, adopted by higher and some other bodies. They perform operational functions and (with some exceptions) do not engaged in legislative activities. Executive bodies are different organizations have specific names and composition. Most often in such bodies represent the most powerful and influential countries; near the thus, part of the representatives is elected (or appointed) by the principle of "geographical justice": to adhere to balance between individual continents, regions, socio-political groups of countries. The executive body is not required consists of a limited number of members, sometimes including representatives of all Member States. However, for example, the executive council The IMF consists of only 24 executive directors, that is, we have dealing with bodies with limited staff.

The role of executive bodies in the activities of international organizations quite significant. Despite the fact that in the hierarchical pyramid they are subordinate to a higher authority, their authority is sometimes at least not lower. The fact is that the plenary bodies of course make decisions that are made and recommended by the executive authorities. Yes, in the International Monetary Fund Board of Directors may stop using the funds of a fund for a country, and The Board of Governors (supreme body) only confirms this decision on its own session.

Administrative bodies also deal with enforcement current functions. But their rank is inferior to the rank of executive bodies. Administrative bodies are engaged in daily organizational work, which is aimed primarily at the internal affairs of the organization. Most often, these functions are performed by the secretariat. Its scope includes the preparation of documentation for conferences and meetings; organization and conduct of negotiations between the organization and other subjects of international law; organization of technical assistance to Member States; logistical support of the organization. In general, the functions of the secretariat are somewhat broader than purely administrative. It is often a body with a very broad area of competence. The secretariat is a branched body with many staff members.

They are hired on a contractual basis and are responsible in their actions only to the organization. These are usually highly qualified, competent, honest and honest people.

Although the secretariat occupies a subordinate place in the organizational structure, it is often headed by a person at the top of the hierarchical pyramid and is its main representative in international relations. At the UN, this role is played by the Secretary-General. But despite his undeniable authority, the Secretary-General is accountable to the UN General Assembly. The post of Secretary General is also available in some other organizations, such as the World Tourism Organization, the OECD, OPEC and others.

International courts are a specific supervisory body. They not only resolve disputes between members of organizations, but also monitor compliance with the norms and principles of conduct enshrined in the statute.

Such a body is, in particular, the UN International Court of Justice, which provides legal advice and draws conclusions on important legal issues. There are also courts in many regional organizations: the OSCE (Arbitration and Magistrates' Court), the EU (European Court of Justice), and others. Unlike most other bodies, where decisions are mostly of a recommendatory nature, rulings of international courts are binding to execution.

The rest of the bodies of international organizations are called auxiliary. Each such body carries out some one, clearly defined function. The name "auxiliary" is quite conditional, because often the function performed by the body is important. But these bodies are not engaged in law-making activities, in their actions they are subordinated to higher and / or executive bodies. For example, ECOSOC includes functional and regional commissions, programs, specialized agencies, most of which are organizations in system of the United Nations (IMF, UNESCO, etc.), although they are called bodies.

In organizations with a narrower scope of activity (compared to the UN), subsidiary bodies are more clearly distinguished. Here are the subsidiary bodies of the World Trade Organization (WTO): Council for Trade in Goods; Council for

Trade in Services; Intellectual Property Trade Council; Committee on Trade and Environment; Committee on Budgetary, Financial and Administrative Affairs.

Classification of bodies of international organizations (by nature of membership). In addition to the functional, there are other criteria for classifying bodies international organizations. By nature of membership:

Intergovernmental. The most common type of organ according to this classification is intergovernmental bodies. They shall be composed of persons appointed by the governments of the Member States. These can be heads of state, heads of government, ministers, diplomats. Intergovernmental bodies are formed in almost all intergovernmental organizations, including economic (MDEO).

Interparliamentary bodies. Interparliamentary bodies consist of deputies who either elected by the people of the member states in the process of direct elections (European Parliament), or appointed by national parliaments. Interparliamentary bodies are usually inherent in regional organizations. Yes, the European Union has The European Parliament, the Council of Europe - the Parliamentary Assembly, the OSCE - the Parliamentary Assembly, etc. Interparliamentary bodies usually take decisions of a recommendatory nature; to some extent, they perform the functions of control over the activities of executive bodies. The European Parliament has somewhat broader powers: he has the right to adopt resolutions and directives. Feature interparliamentary bodies is that the deputies in them are not grouped by country, but by party affiliation

Bodies that consist of persons in a personal capacity

Bodies of persons in a special capacity are characteristic mostly of non-governmental international organizations. Such bodies consist of highly qualified specialists, scientists, lawyers, economists, cultural workers, etc. For example, the organs of the Club of Rome consist of the world's leading scientists. But even in intergovernmental organizations there are bodies in which mostly not official representatives of the states work, but persons hired under a contract or invited as highly qualified specialists.

The UN Secretariat employs tens of thousands of non-governmental professionals. At UNEP (United Nations Environment Program), most bodies are made up of experts in the field of environmental protection.

Bodies consisting of national committees and groups.

Bodies from committees and groups. Bodies from committees and groups are also typical of non-governmental organizations. They consist of national committees of countries (for example, national centers of the Red Cross), groups, corporations, companies, firms, national business organizations, and so on. A striking example of this type is the organizational structure International Chamber of Commerce (ICC). Its supreme body (the Council) consists of representatives appointed by national committees and groups, chambers of commerce and industry. The main requirement is that the goals of local organizations are not political. Another ICC body, the World Industrial Council, is made up of top executives from 90 large corporations.

Questions for self-control:

1. What kind of flows in the scheme of international business is not used in the second firm?
 - a) I - Flows (goods, services, information, financial and labor resources);
 - b) II - Internal restrictions (national environment of the firm);
 - c) III - International restrictions (international environment);
 - d) IV - International organizations.
2. In what period were the so-called symmachia?
 - a) Period feudal fragmentation ;
 - b) Period feudal fragmentation;
 - c) Epoch slave-owning states;
 - d) The era of the great geographical discoveries.
3. What is the second component of an international institute?
 - a) international conference (congress);
 - b) international commission (committee);
 - c) international organization;

- d) Totality laws, norms, rules, agreements,
- 4. There are at least three international organizations basic criteria:
 - a) membership of states, geographical coverage, competence;
 - b) nature of activity, period of operation and the order of joining the organization;
 - c) features of legal status, nature of activity, period of operation;
 - d) geographical coverage, competence, nature of activity.

TOPIC 8. DEVELOPMENT OF SCIENTIFIC AND TECHNICAL FORECASTS

Educational issues

1. The essence of extrapolation methods
1. Construction of an envelope curve based on a family of curves
2. Expert assessment methods
3. Modeling of processes of technology development

Basic concepts: Extrapolation of dependent variables, Modeling of technology development processes.

The variety of types of scientific and technical forecasts and the tasks solved with their help in the control system requires the use of different systems and methods of forecasting. Each forecast arises as a result of a multi-stage process of obtaining the necessary information, its processing by means of special receptions and an estimation of reliability of the received results. The combination of these three elements characterizes a specific method of developing scientific and technical forecast. The choice of information carriers, a way of its reception, a procedure of performance of special calculations for the purpose of an objective estimation of prospects of development of researched object depend on what concrete data are necessary for development of the forecast.

Modern domestic and foreign practice has more than 130 different methods of forecasting. All the variety of methodological techniques of scientific and technical forecasting can be reduced to three most important groups.

- 1.) extrapolation methods;
- 2.) expert forecasting methods;
- 3.) modeling methods.

The essence of extrapolation methods is that, analyzing the change in certain parameters of development products in the past and examining the factors that cause these changes, we can draw conclusions about the patterns of development and ways to improve technology in the future. In scientific and technical forecasting it is accepted to allocate two types of the problems solved by methods of extrapolation: problems of dynamic and static analysis. In a dynamic task, the main and only factor of development is the time factor. In this case, the forecast of the development of a scientific direction or type of technology is based on a careful analysis of time series that reflect the change of a predicted parameter over time. For example, the change in time of such parameters as power, speed, reliability, weight and dimensional characteristics, etc. is analyzed. The dynamic task of forecasting assumes the presence of evolutionary processes in the development of predicted processes with a unidirectional change of basic parameters. In this case, the forecast of changes in the parameters of the object in the future is based on analogy with the retrospective practice of its development.

Most often, functions of the form are used to predict technical parameters:

$$\hat{y}_t = b_0 + b_1 t$$

Where y is the predicted parameter; t - year in the forecast period; b_0 and b_1 are the calculated coefficients of the approximating function.

The functions most often used in forecasting are: linear, exponential, power, logarithmic, polynomial, etc.

In the analytical expression of the development of the predicted object (parameter), the time factor is considered as an independent variable, and the values

of the parameters act as functions of this variable. However, the state of the art and the corresponding change in the predicted parameters depend on what factors, in what direction and with what intensity influenced their development.

The change in the parameter over time is the result of many factors. Therefore, it is very important in the process of forecasting to investigate the dependences of the main forecast parameters on the factors influencing their development. Statistical prediction of parameters by factors influencing their development is called extrapolation of dependent variables. It is carried out on the basis of methods of correlation and regression analysis. A typical example of extrapolation of parameters of the designed equipment by methods of correlation and regression analysis is forecasting of values of complexity of development of machines and units on set of constructive, technological and operational factors.

Extrapolation of trends implies similarity of conditions, functions and principles of operation of predicted objects in the past and future. Rapid change, change in the principles of operation of the created technology greatly affect the quality of forecasts. To predict rapidly evolving processes and objects, the method of extrapolation of variables by envelope curves is used. The content of this method is to construct an envelope curve, which roughly reflects the general trend of change in the predicted parameter according to the data characteristic of different generations of objects of the same functional purpose. The prediction of the envelope curve is reduced to the extrapolation of point or interval values of the parameter for a given period.

Expert assessment methods are widely used to predict qualitative characteristics, as well as objects, the development of which is not amenable to formalization and statistical modeling. The essence of expert methods of scientific and technical forecasting is that on the basis of a priori assessments of qualified specialists a conclusion is made about the ways of development of technology, promising areas of research and development.

Depending on the form of work with experts, there are individual and collective methods of examination. Individual methods of examination involve

personal work with each expert and obtaining a private, not previously agreed with other opinions, expert opinion. The form of obtaining expert assessments may be different. Often the survey in the individual examination is conducted by interview in direct interaction with the expert. Thus the expert is guided generally only by a priori representations about the forecasted object. Most often, experts are interviewed in absentia by forwarding questionnaires prepared for them in advance (analytical expert assessments). In this case, individual expert assessments are analytical in nature, because the expert has the opportunity to obtain and analyze all necessary information about the experience of development and the relationship of the projected object.

However, even here the expert's assessment acts in most cases as a product of his intuitive thinking. Among the methods of individual expert assessment, the method of morphological analysis deserves special attention. It provides a rigorous procedure for analyzing and evaluating possible solutions to complex, multifaceted technical problems. The essence of this procedure is to divide the problem into individual components, to determine their possible states in the future and to consistently consider all sorts of combinations of expected states from all components of the problem. Individual expert assessments are rarely used as an independent method of forecasting. In order to increase the validity of predictive statements, individual assessments of several experts are often compared and combined to form a collective expert assessment.

Methods that involve such a combination and comparison of private assessments are called collective or group expertise. As a rule, its application is accompanied by an increase in the accuracy and depth of development forecasts. At the same time, group opinion often reflects the collective one-sidedness of judgments, due to the commonality of culture, traditions, the influence of the main direction in the development of technology, etc. Therefore, the collective opinion of experts can be compromised to the detriment of obtaining a valuable original solution.

These shortcomings of collective expertise are most characteristic of the method called "method of commissions". The content of various methods of collective peer review is mainly to use all the advantages of group expertise, minimizing its shortcomings. This is done primarily by creating conditions conducive to the formation of objective assessments. One of the most interesting attempts to create such conditions is the method of brainstorming.

The essence of this procedure is that the work of the group of experts is divided into two stages: the first - generates ideas, new technical solutions, the second - a practical assessment of the information obtained and the selection of rational solutions. The effectiveness of a brainstorming session carried out according to certain rules is evaluated by the number of new ideas identified during the discussion of the problem. In contrast to the methods of commissions and brainstorming, the Delphi method involves the complete isolation of experts and the anonymity of their opinions. The survey is conducted in the form of questionnaires to determine the relative importance and timing of expected events in the projected area.

The group decision is made not according to the majority, but on the basis of statistical processing of individual assessments taking into account the degree of agreement of experts' opinions, which is characterized by the relative magnitude of the scope of individual assessments. A number of methods reflect the normative approach to the development of scientific and technical forecasts. In this approach, the prospects for the development of science and technology are determined on the basis of a predetermined goal. In this case, the task of the forecast is to form a structure of interdependent elements that ensure the unconditional and most rational achievement of the goal.

The structure of interdependent elements forms a hierarchical system, the graphic image of which is called the "goal tree". At each of its levels there are elements that reveal the content or means of solving problems of a higher level. An example of a normative approach to the development of a forecast for the development of science and technology at the industry level is the method of

weighted estimates. Its content is to build a tree of goals, consisting of five levels: general development goals, the main objectives of research and development, the main scientific and technical problems and the most important topics of research and development. The elements of each level are evaluated through a system of weighted evaluations.

One of the most promising approaches to the development of forecasts is the modeling of processes of technology development, ie determining the prospects for change of technology on the basis of adequate models of its development. By the nature of the models used, logical, informational and mathematical forecasting models differ. Logical modeling includes a careful study of the internal logic of the projected object and the development on this basis of appropriate historical models (samples).

Historical analogies are then used in solving specific situations and problems of development of the projected object. Of practical interest are the methods of constructing various information models. Thus, statistical analysis of the number of scientific publications, scientific journals, the frequency of use of printed works, etc. gives the opportunity to judge the pace and nature of development of scientific disciplines, certain types of technology.

To date, methods of scientific and technical forecasting have been developed and used, based on the analysis of information arrays contained in applications for inventions and issued patent documents. Some approaches provide a comprehensive assessment of the technical significance and economic feasibility of using the analyzed patents and determining the prospects of various technical solutions. Mathematical forecasting models are the most universal and quite rigorous methods of analyzing trends in technology. They allow to give a quantitative description of the dynamics of development of real forecasting objects, to study the nature and directions of influence of various factors on their change. Methods of statistical analysis, research of production functions, dynamic programming are especially often used for modeling of processes of scientific and technical development.

Note that none of the actual forecasts is developed on the basis of only one method. Creating a forecast for the development of a particular type of technology is a complex study, in the process of which uses various methods and approaches that form a comprehensive forecasting system. In foreign forecasting practice, such systems as PATTERN, CPPO (France), FORCAST and QUEST, Delphi, etc. are known.

The system of forecasting the development of science and technology includes the creation of forecasts on the priority areas of scientific and technological development of the country, regional and sectoral forecasts, as well as forecasts of the development of certain types of equipment. However, the main role in scientific and technical forecasting belongs to scientific organizations and enterprises that use forecasts in marketing research and in the formation of product plans for innovation.

Control questions:

1. To the sources of formation of the normative basis of activity international organizations do not include:

- a) international agreements (treaties);
- b) international conferences (symposia);
- c) international customs;
- d) international codes of conduct

2. How many countries have signed the general principles of international relations set out in the Final Act of the Conference on Security and Cooperation in Europe:

- a) 10
- b) 25
- c) 35
- d) 50

3. Administrative law is:

a) law, which covers issues related to its sources (statutes and treaties on which international organizations are based), the quality of members of the organization and its bodies;

b) law, which covers issues concerning its sources (statutes and treaties on which international organizations are based), the quality of members of the organization and its bodies;

c) the law governing the formation and expenditure of the organization's funds (own budget, special funds, membership fees of Member States, fees for services, etc.).

d) there is no correct answer.

4. The main aspect of foreign trade operations for trade in patents and licenses are:

a) purchase or sale of patents (other security documents);

b) granting abroad licenses for the use of inventions, technical knowledge and experience, as well as trademarks;

c) exchange of licenses in modern conditions;

d) protection of inventions by means of patent legislation.

5. The main form of scientific and technical exchange between countries:

a) foreign trade agreements for the sale of patents;

b) International exchange of licenses;

c) international trade in licenses;

d) mandatory patenting.

6. What is the average period of validity of the patent:

a) 6-9 years;

b) 10-12 years;

c) 15-20 years;

d) up to 50 years.

7. With an exclusive license:

- a) the licensor has the right to use the invention himself and allows the licensee to use the invention only;
- b) the licensor allows, under certain conditions, to use the invention of the licensee, while retaining the right to both independently use and issue similar licenses to other interested parties;
- c) the licensor fully transfers the rights to the licensee;
- d) permission issued by the licensor to the licensee for industrial and / or commercial use of the invention.

8. Depending on the content, "know-how" can be design:

- a) echnological, production, management, commercial, financial.
- b) financia, production, management;
- c) commercial, financial, echnological, production, management, planning;
- d) Technical, general, commercial.

9. What kind of International Research and Production Associations does the IAEA belong to?

- a) international research organizations;
- b) international research institutes;
- c) international scientific and technical laboratories;
- d) international scientific and technical centers.

10. What is the difference between know-how and engineering:

- a) know-how is knowledge, engineering is experience;
- b) they have the same meaning;
- c) know-how is experience, engineering is knowledge;
- d) both include staff training and retraining.

11. The license agreement is executed by:

- a) sale of patents; sale of licenses for all types of patented property;
- b) sale of "know-how", engineering;
- c) foreign investment, if they are accompanied by an inflow of investment goods, as well as leasing;
- d) the entire volume of technology transfer in commercial form.

12. What is the main goal of the priority areas of INTS development?

- a) Greening;
- b) Automation of production;
- c) Introduction of Industry 4.0;
- d) Space travel.

13. The main types of license agreements are as follows:

- a) exclusive, general, individual;
- b) simple, exclusive, complete;
- c) limited, open;
- d) short, medium, long.

14. What is not the subject (object) of intellectual property:

- a) the latest technologies and production and other experience;
- b) scientific discoveries, know-how, and inventions;
- c) means of production and legal documents;
- d) prototype or industrial samples of equipment, apparatus, tools, production lines.

15. The prepayment includes:

- a) reimbursement of the licensor's expenses before the implementation of the license agreement;
- b) fixation in the agreement of the sums which are paid once (or in installments);
- c) exchange of licenses or patents, which are presumed to be equivalent;
- d) transfer of securities and granting the right to participate in profits.

16. Depending on the scope of engineering services, there are:

- a) design and consulting engineering;
- b) technological engineering;
- c) leasing engineering;
- d) managerial engineering.

17. Engineering related to ensuring the process of production and sale of products does not include:

- a) services for the management and organization of the production process;
- b) equipment inspection and testing services;
- c) services for the preparation of contract documentation;
- d) assistance in financial matters.

18. The subjects of the world technology market are:

- a) engineering;
- b) consulting;
- c) technology;
- d) firms.

19. The main aspect of foreign trade operations for trade in patents and licenses are:

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