



**Рисунок 1 – Ринок інформаційних технологій України**

Для України на сьогоднішній день цифрова економіка є скоріше загрозою ніж драйвером розвитку, внаслідок слабкого розвитку підприємницького кластеру, що здатний створювати значну додаткову вартість у цифровому сегменті. Крім того, обмежують здатність України в найближчі роки домогтися фундаментальних технологічних проривів структурні недоліки в системі цифрової трансформації, недостатній рівень цифрових навичок, обмежений доступ до ринків капіталу та відсутність відкритої інноваційної культури.

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## **INTERNATIONAL TECHNOLOGICAL EXCHANGE AS A FORM OF INTERNATIONAL ECONOMIC RELATIONS**

In the last century, our world faced a scientific, technological and information revolution, which greatly influenced the economic development of various parts of the planet and the structure of the international division of labor. Moreover, this revolution has led to the emergence of a new form of

international economic relations such as international technological exchange.

International exchange of technologies is a special form of international economic relations, that implies the relations between foreign counterparties regarding the use of the results of scientific and technical activities that have practical value. It helps to exchange information on ways to overcome difficulties of an economic, production, managerial or financial nature that arise between economic entities of countries in the process of reproduction [1].

International technological exchange has been known since the beginning of the twentieth century, but the formation of the world technology market dates back to the 50-60s. At this time the volume of international trade in technology exceeded the scale of national exchange.

Today, the global technology market takes an increasingly important place in international economic relations, which is facilitated by the rapid growth of the knowledge intensity of the goods and services themselves, the pace of production and investment activities, which create additional demand for new technologies [2].

Globalization plays a very important role in the economy. It not only accelerates the international exchange of technologies, but also contributes to competition in the world market by gradually moving it from the sphere of material goods and services into the world of knowledge, ideas and information. In order to be competitive in the world market and occupy a leading position, developing countries are forced to develop their technical base in the same direction as developed countries.

The purchase of advanced foreign technology is one of the most important means of overcoming technical backwardness, creating its own industry that is able to meet the needs of the domestic market and reduce dependence on imports. For developed countries, the acquisition of technology contributes to the modernization of the production apparatus in various industries. The increase in the specialization of firms in narrow fields of science and technology is taking place through the deepening of the international scientific and technical division.

The exchange of scientific and technical knowledge allows individual countries, that don't have sufficient financial resources for research and development, to achieve high rates of economic development through the use of advanced technologies from other countries.

The main advantages of exporting technologies are the ability to compensate for part of the costs of technological development through an additional source of income; the ability to cope with the problems of exporting the relevant product; profit from innovative products that have passed the peak of the life cycle in the country of origin; the possibility of

improving the object of the license with the participation of the buyer, etc. The main advantages of importing technologies are access to high technical level innovations; increasing the competitiveness of products produced by the purchased technology; opportunity to renew and expand production, as technological transfer is often accompanied by an increase in foreign investment; saving R&D expenditures [3, 4].

International technology exchange can be carried out free of charge or for a fee. Most of them are free. This happens because of a number of reasons. One of these reasons is distribution that occurs through non-commercial channels (at exhibitions, conferences) or illegally, and sometimes objects of intellectual labor are not subject to registration of property rights. Today, the legislative framework for the protection of intellectual property has not been sufficiently formed. Another issue is technology compliance. It lies in the fact that there is often a violation of technological requirements in the production process, which can lead to environmental pollution, exacerbation of the raw material problem, etc.

The main channels of technological transfer are internal (foreign branches of TNCs), inter-firm (under licensing, cooperation, management and other long-term agreements with foreign firms) and foreign trade (together with export deliveries of cars, the equipment and other industrial production).

Moreover, there are two ways of transferring technology in the international market such as commercial and non-commercial routes. Non-commercial forms of technological exchange provide for the transfer of general information of an advertising and technical nature, familiarization with technology, production and technical and economic data in such a volume that is not enough for practical use. They usually do not include such mandatory elements in the transfer of technology as the right to use the technology, detailed technical documentation, technical assistance, and production experience. Non-commercial forms of technology exchange include international exhibitions, conferences; publications in scientific journals; various forms of education; exchange of delegations; internships; conducting joint research; creation of data banks.

While commercial forms of technological exchange provide for the transfer of scientific and technical knowledge and experience, which are used in the development of production and the use of various goods. The most common are the purchase of new equipment samples, the sale and purchase of licenses, the import of new equipment, engineering services, the construction of turnkey factories, franchising, leasing, industrial cooperation, joint ventures.

Taking all these facts into consideration, it is possible to sum up that such form of international economic relations as international technological

exchange is very important for our world. Over the years, technological progress has been a key factor in comparative advantage and international competitiveness. Despite the growing influence of technological progress on economic development, the level of implementation of technological progress in the world varies significantly. For developing countries, technological exchange is an opportunity to overcome technical weakness and reduce dependence on imports, while for developed countries it is an opportunity to modernize production facilities in various industries. Objectively, there is a need for international technological exchange and its transformation into an independent form of international economic activity.

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### ПОБУДОВА ДИНАМІЧНОЇ МОДЕЛІ СТАЛОГО РОЗВИТКУ ПІДПРИЄМСТВА ТОРГІВЛІ

Побудова динамічної моделі сталого розвитку базується на моделюванні режиму функціонування і розвитку даної господарської системи як такого способу оцінки (вимірювання), який дозволяє з'єднати різноманітність і умови прийнятих рішень, характеристики невизначеності діяльності господарської системи з різноманітністю кінцевих результатів, з характеристиками і властивістю невизначеності результатів функціонування даної господарської системи. Ідея побудови динамічних моделей для формування ефективного режиму реалізації функцій системи вперше була висловлена у роботах професора І.М. Сироежіна [1] і отримала розвиток у роботах по теорії організаційно-економічних вимірів [2]; [3]. Суть методу полягає у наступному.