TRANSFER OF INNOVATIVE TECHNOLOGIES: THEORY, METHODOLOGY, WORLD EXPERIENCE AND PRACTICE OF UKRAINE

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The modern concept of the development of economic systems is formed on the basis of digital transformation. Digital technologies have gradually become a necessary component of any management or production process. Understanding the importance of digital transformation leads to the emergence of development trends and increased competitiveness of companies through the search for new ideas and solutions. One of the directions of such a search is the creation of networks for the transfer of innovative technologies. The transfer of innovative technologies has a broad definition, is individually adapted to different industries, has its own characteristics and different mechanisms for implementation. The relevance of the development of innovative technology transfer systems is due to the importance of building a complex architecture of the company's management system and the simultaneous digital transformation of business.

Important components of research on the transfer of innovative technologies are the system of knowledge in the following areas:

- in the area of innovations and innovative products for business;

- when creating digital transformation models;

- through the involvement of information systems and technologies in management, finance, marketing;

- when modeling innovative development strategies of companies on the basis of separate organizational and economic mechanisms,

- when algorithmizing management processes and management decision-making processes;

- when developing economic-mathematical models and using data analytics when implementing strategies;

- when implementing and implementing newly created innovative projects;

- working out the legal basis and possibilities of attracting technology transfer networks for business in various industries, etc.

Innovation and creation of an innovative product.

Creating an innovative product for the company is the primary task of increasing competitiveness. The realities of the market situation create prerequisites for the identification and continuous involvement of market success factors and key competencies. Very often, the understanding of innovations is not appropriate for the business itself, but the application of this category in business processes is necessary. There are a number of reasons for this, both objective and subjective. First, companies in real operating conditions are not sufficiently focused on the constant creation and attraction of innovative ideas for their development. Peculiarities of conducting business in Ukraine (for small and medium-sized businesses) focus on creating economic results, obtaining maximum profit, reducing possible costs, and at the same time operate according to sustainable strategies. It is not often that business creates conditions for attracting innovation due to the possibility of reporting economic losses. In this way, business processes are directed to the economic mechanism, and not to the innovative mechanism of development. Secondly, the creation of innovative products requires not only the involvement of additional financial resources, but also the involvement of time. Business is fast and in most cases in some industries the operating cycle lasts from 1 day to a week, month, year. Thus, the creation of innovative products will be aimed at attracting the time of many operational cycles, which again will provide possible losses of financial resources. Thirdly, the involvement of innovative technologies raises some doubts about the necessity of their creation and the effectiveness of their use in further work. This is due to the fact that the innovative development of competitors takes place constantly [1-7]. Due to competition, it is very often difficult to create an innovative product before competitors. Under such conditions of competition on the market, business companies cannot waste time or additional financial resources to try to win the fight. In addition, existing practice shows that the number of successful innovative companies is very small. This is one of the subjective factors influencing the development of the innovative component of business, which cannot have clearly defined predicted results. Under such conditions, business companies simplify their activities to improve the operational production process and create the most possible economic conditions for improving their results through the involvement of standardized models and indicators. There are also other conditions of non-use of innovative development for companies in practice.

Many researchers, both from Ukraine and foreign scientists, pay considerable attention to the direction of innovative development for business entities. The theoretical foundations and content make it possible to assert that today there are various understandings and many results of research conducted in the field of innovation [4-11]. Let's consider separate definitions of the category "innovation" and features of understanding.

Creation of a system of innovative technologies for the company is an integral component of their competitive development. Today, innovative development involves a fairly wide range of innovative products that are used for business and its development.

Innovative development is a key factor for successful business in today's world. Innovations allow enterprises to effectively solve problems, ensure stable growth and competitiveness.

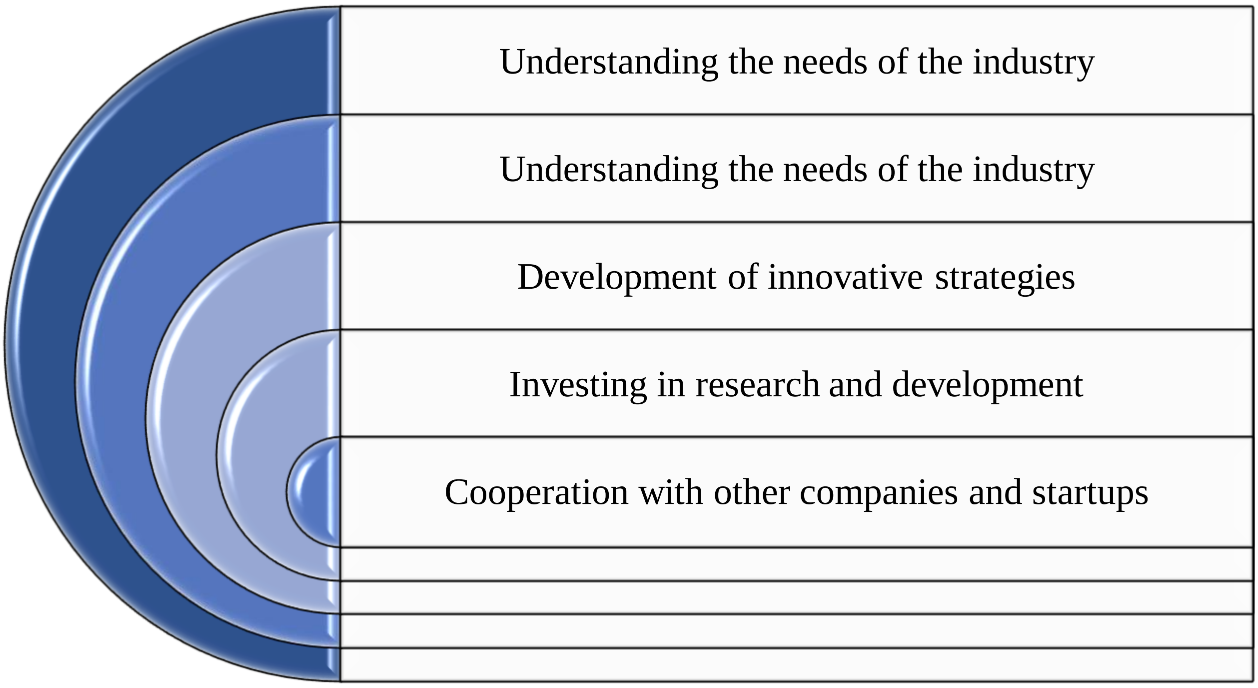

Fig. 1. Directions of communication for the development of innovations in business processes*

**Source: generated by the author*

Basic tips for the development of innovations in business processes. Understanding the needs of the industry. It is necessary to keep abreast of the latest trends and developments in the relevant industry in order to develop effective innovative products and services. Development of innovative strategies – businesses must focus on developing strategies that will facilitate the discovery and implementation of innovations. It is important to understand which innovations can bring the greatest benefit to the company and its customers. Creation of innovative culture - is important to create an environment where employees will be stimulated to innovative thinking. Such an environment should facilitate the creation of new ideas and products, as well as help to implement them. Investing in research and development. Companies must invest in research and development to create new innovations. Investing in research and development can provide a company with a competitive advantage and ensure its success in the market [6-14]. Cooperation with other companies and startups. Cooperation with other companies and startups can help open up new opportunities and find innovative solutions for business development.

Modern technologies of innovative business development.

Modern technologies of innovative business development allow companies to create and implement new innovative products and services, ensure more efficient use of resources and increase profits. The main modern technologies of innovative business development today are considered to be the use of cloud technologies and the Internet of Things. Cloud technologies allow businesses to store and process large amounts of data, reduce infrastructure costs, and expand opportunities to develop new products and services. The Internet of Things allows enterprises to collect and analyze data about products and services, which allows to improve them and implement new solutions, new models of product policy, new company development strategies.

Management strategies of innovative development for business are based on the understanding that innovative development is an important component of the success of any business in the modern world. Management of innovative development strategies is a key element for ensuring sustainable business growth and maintaining competitive advantages in the market [6-18]. The following are the basic strategies that a business can use for innovative development.

1. Development of new products or services. This may include developing new technologies, improving product functionality or design, or creating new services that respond to market needs.

2. Expansion of markets or geography. A business can expand its reach into new markets or new geographic areas where there may be a strong demand for its products or services.

3. Optimization of internal processes. Improving internal processes will help reduce costs, increase productivity and efficiency, allowing businesses to compete more effectively in the marketplace.

4. Involvement of new technologies. A business can use new technologies to improve its products or services, increase production efficiency and reduce costs.

5. Partnership and cooperation. A business can form partnerships and collaborate with other companies to gain access to new technologies, markets or expertise.

6. Concentration on innovative culture. Companies can establish an innovation culture to encourage a creative approach to strategic management design.

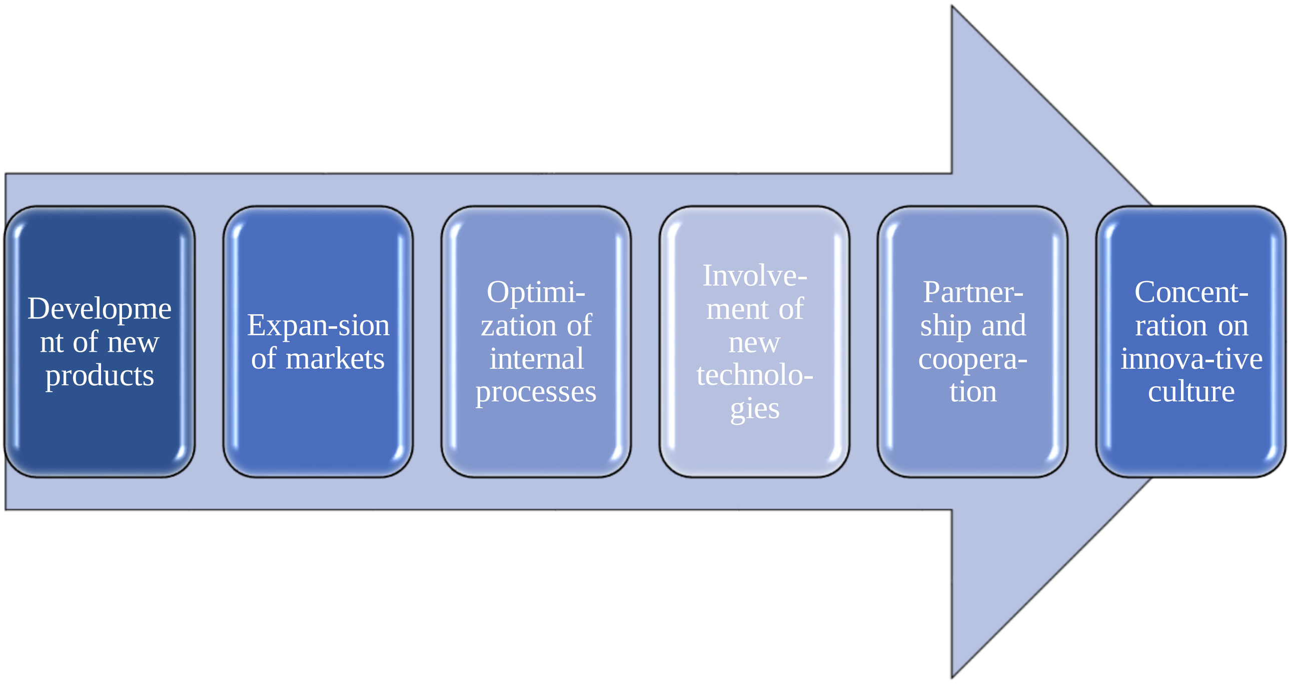

Fig. 2. Basic strategies for innovative development of business processes*
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Basic strategies are also a related platform for forming organizational strategies for innovative business development [19-23]. Innovative business development involves the application of various organizational strategies that can help enterprises become more competitive and successful in the market.

The strategy of internal innovation involves the creation of internal sources of innovation by creating a favorable atmosphere for creativity and innovation among the company's employees. This can be achieved through training, development and support of an innovative culture, the creation of special departments for the development of innovations, the use of technologies that enable joint work and collaboration of employees, and so on.

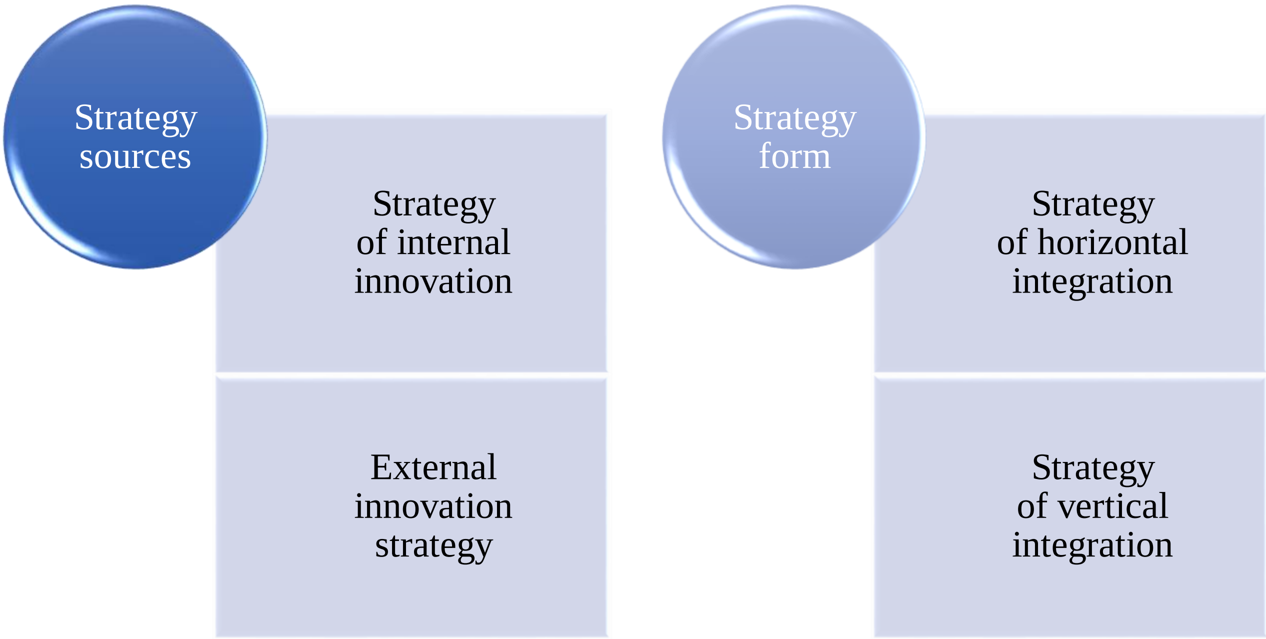

Fig.3.Forms and sources of formation of innovative development strategies*

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The external innovation strategy involves partnering with other enterprises, universities, research centers, etc. for the purpose of joint development and implementation of new ideas and technologies. This can be achieved through the creation of joint research centers, participation in conferences and exhibitions, involvement of innovation consultants, etc [21-15].

The strategy of horizontal integration involves acquiring competitors that have strong innovation capabilities in order to improve their innovation capabilities and competitiveness.

The strategy of vertical integration of innovations involves the inclusion of appropriate stages of creation and introduction of new products or services within the limits of one's own organization. This means that the company independently carries out the entire cycle of product creation and development, including research and development, production, marketing and sales.

Internal innovation strategy.

Internal innovation strategy is an approach to the development of new ideas and approaches used within the company. The basic idea is that company employees can make a significant contribution to the innovation process if they are given the opportunity to collaborate and contribute their ideas.

The main stages of the internal innovation strategy:

1. Creation of an internal innovation team – the company creates a special team that is responsible for the development and implementation of new ideas.

2. Involvement of the company's employees in the innovation process – employees are given the opportunity to contribute their ideas and participate in the development of new products.

3. Implementation of innovation management tools – the company implements special tools for managing the innovation process, which allow collecting ideas, analyzing them and implementing them.

4. Financing the innovation process – the company allocates enough resources to finance innovative projects and research.

5. Monitoring of the innovation process – the company monitors the implementation of innovation projects and analyzes their effectiveness [21-32].

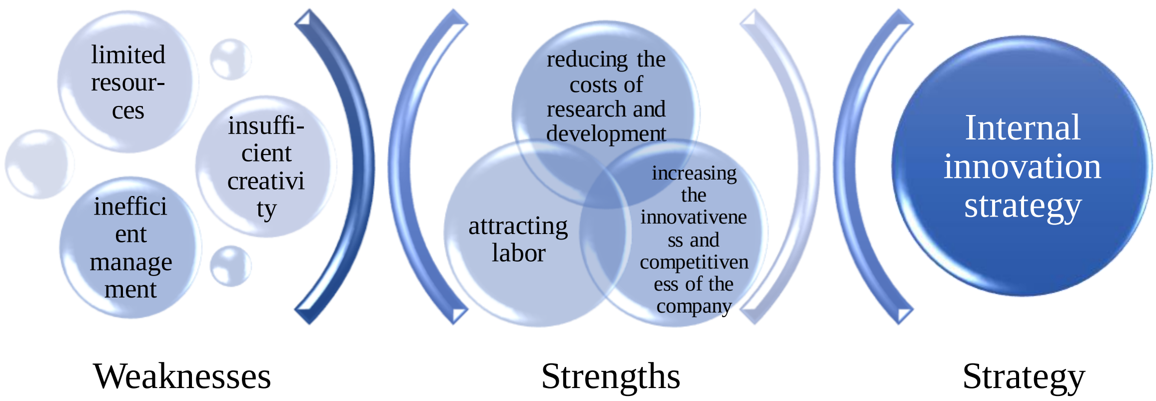

Fig. 4. Impact on internal innovation strategies*

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The strategy of internal innovation can have many advantages, in particular: reducing the costs of research and development, increasing the innovativeness and competitiveness of the company, attracting labor. The strategy of internal innovation has its advantages, but it can also have disadvantages, in particular, limited resources, insufficient creativity, inefficient management [26-32].

Often, the internal innovation process requires significant resources, such as human resources, time and money. If the company does not have enough resources to implement the innovation process, it can become an obstacle to its successful implementation. The internal innovation process may be limited by the experience and knowledge of the company's employees. This can lead to insufficient creativity and innovativeness of projects. Not all managers can be successful in managing innovative projects. If management does not know how to effectively manage the innovation process, it can lead to failure.

Strategy of external innovation.

The strategy of external innovation is an approach to creating innovations, which is based on the involvement of other companies or organizations in cooperation for the purpose of joint development of new products, technologies or services. This strategy allows the company to attract the knowledge, expertise and resources of external partners, which can significantly increase the efficiency and speed of innovation.

The main advantages of the strategy of external innovation:

1. Increasing the speed of innovation. Involvement of external partners allows the company to accelerate the process of developing new products or technologies by attracting new ideas, knowledge and experience.

2. Expanding access to resources. Companies can gain access to resources that they lack by bringing in external partners. This may include technical expertise, high-tech equipment, financing, etc.

3. Increasing cost efficiency. Cooperation with external partners allows the company to increase the efficiency of research and development costs, reduce investment risks and reduce the time required to launch a product on the market.

4. Expansion of the network of connections. Cooperation with external partners can help the company expand its network of connections, in particular, with representatives of other industries, markets and technologies.

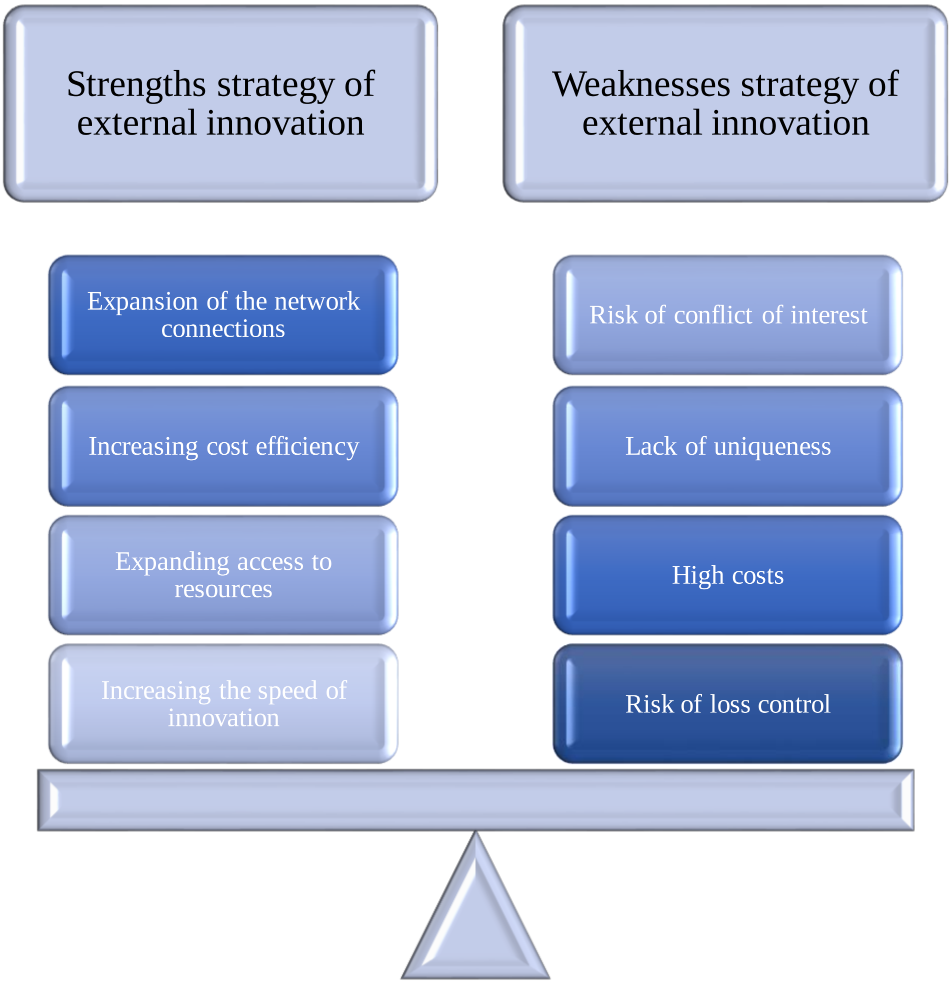

Fig. 5. Impact on strategy of external innovation*

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However, there are some disadvantages when applying the strategy of external innovation. The strategy of external innovation may have some disadvantages, in particular:

1. Risk of loss of control, companies receive innovation from external sources, they may lose control over the innovation process. This can lead to a loss of competitive advantage and project management costs that companies cannot control.

2. High costs, attracting external sources may be more expensive than developing one's own innovation within the company. In addition, companies may be required to pay additional costs for the collection and analysis of information from external sources.

3. Lack of uniqueness, that is, external sources of innovation may be available to all players in the market, which means that they may not have a competitive advantage compared to other companies that also use these sources.

4. Risk of conflict of interest, if the company receives innovations from external sources, it may face a conflict of interest with the supplier or partner that provides these innovations.

5. The need to establish control mechanisms, companies must have control mechanisms that allow them to monitor the innovation process and ensure that innovation is consistent with their business strategies [23-35].

Strategy of horizontal integration of innovations.

Horizontal innovation integration is a strategy that involves cooperation between companies at different stages of production or in different industries to create new innovative products or services.

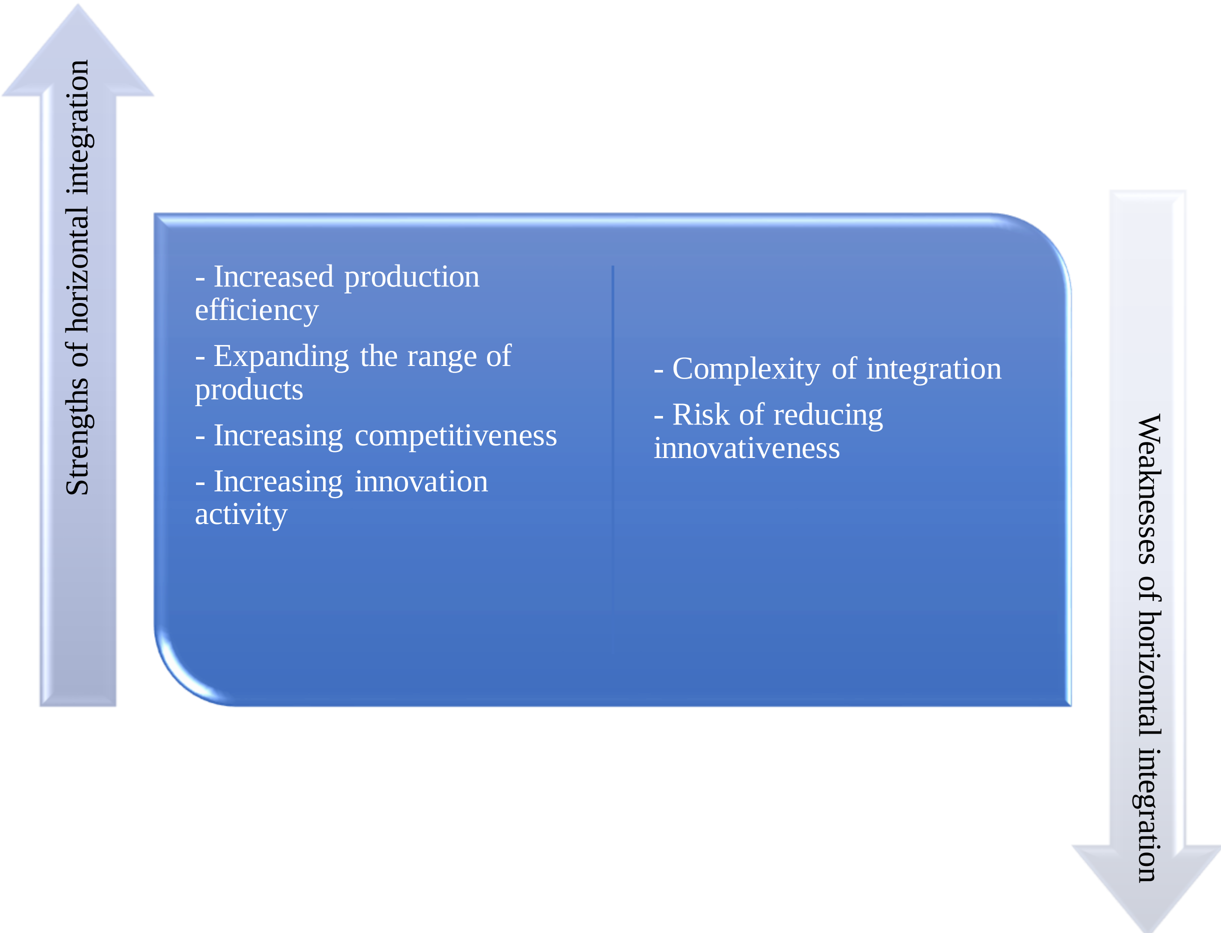

Fig. 6. Impact on strategy of horizontal integration *

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The main goal of such integration is to ensure more effective interaction between companies, which allows them to quickly develop and implement new innovative solutions on the market.

The main advantages of horizontal integration are: increased production efficiency (companies can share resources and knowledge, which ensures more efficient production and lower costs); expanding the range of products (companies can expand their range of products by jointly developing new products and services); increasing competitiveness (strengthening partnerships between companies can help them increase their competitiveness in the market); increasing innovation activity (cooperation between companies can contribute to more active creation and implementation of new innovative products and technologies). For the successful implementation of horizontal integration of innovations, it is necessary to conduct a detailed analysis of partners and their ability to cooperate, develop a clear action plan, define the roles and responsibilities of each company, and also prepare an appropriate investment portfolio [32-38].

Disadvantages of the strategy of horizontal integration of innovations. Horizontal integration of innovation is a strategy that consists in combining several companies into one in order to improve the efficiency of the production process and the development of new products. This strategy has drawbacks that can affect its success. Firstly, complexity of integration. Horizontal integration requires combining several companies with different cultures, processes and management systems, which can be very difficult. This may require significant costs to reorganize and integrate business processes, which may delay the innovation process. Secondly, the risk of reducing innovativeness: Horizontal integration can lead to a decrease in competition due to the influence of factors not of a market, but of a managerial nature, and due to the lack of use of innovative tools and innovative development of business processes, in general.

Strategy of vertical integration of innovations.

Vertical integration is the process of uniting enterprises belonging to different stages of the production process into a relatively single business organization.

Innovation plays an important role in such processes and can be carried out with the help of different strategies of vertical integration. The strategy of vertical integration of innovations involves the inclusion of appropriate stages of creation and introduction of new products or services within the limits of one's own organization. This means that the company independently carries out the entire cycle of product creation and development, including research and development, production, marketing and sales.

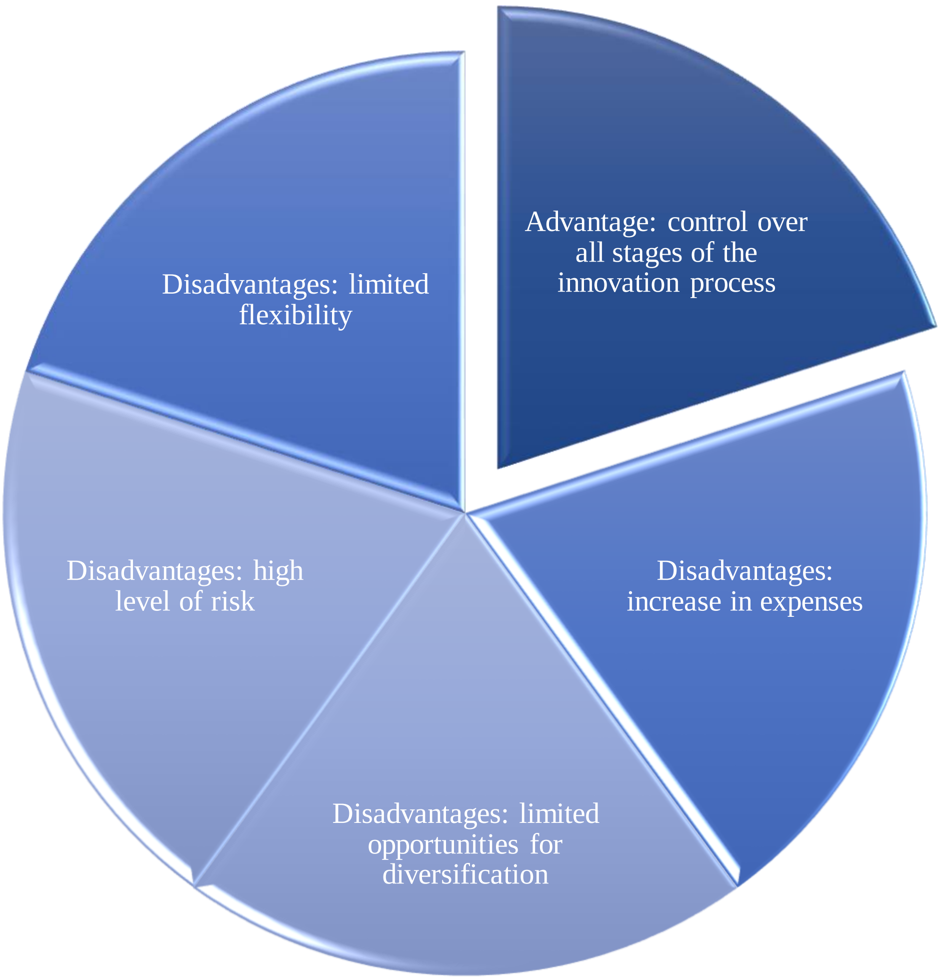

Fig. 7. Impact on strategy of vertical integration of innovations*

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The main advantage of this strategy is that it allows the company to maintain control over all stages of the innovation process, which can reduce the cost of external services and ensure greater efficiency and speed of product development. In addition, vertical integration of innovation allows the company to ensure product quality. However, there are some disadvantages associated with using such strategies:

1. Increase in expenses. In most cases, vertical integration requires higher costs for the purchase of new enterprises and their integration into a single structure. This can cause a decrease in profits.

2. Limited opportunities for diversification. If a firm is vertically integrated, it may limit its diversification opportunities because it will be focused on a certain industry.

3. High level of risk. Vertical integration can require significant costs and time to successfully integrate different businesses. If the integration is not successful, it can lead to serious losses.

4. Limited flexibility. Vertical integration can limit the flexibility of the production process because it requires a single control over all stages of production. This can reduce the efficiency of production and innovative development.

The involvement of strategic management in the innovative development of companies aims to create a single effective mechanism of interaction between individual segments and components of the company. Use of the presented strategies is possible both individually and in an integrated system. In addition, each individual product line of the company can have its own innovative development strategy. Innovative development strategies for business create prerequisites for the formation of an effective architecture and architecture of business processes [21-29].

Architecture of innovation process for business.

The innovation process is the process of developing and implementing new ideas, products, services or processes that allows a company to expand its business and remain competitive in the market. The architecture of the innovation process for business can be considered from the following aspects.

Organizational culture. The culture of the company should be aimed at creating and supporting innovation. Company management must establish values that support innovation, as well as establish a system of incentives for those who work on innovative projects.

Research and development. Companies should have a department dedicated to research and development of new products and services. This department must have the ability to quickly adapt to changes, implement innovative solutions and work on the development of products and services that will meet the needs of customers.

Open innovation. Open innovation is a process in which companies work with external organizations, including competitors, customers and partners, to develop new products and services. This approach can help a company quickly discover new technologies and innovative ideas [22-28].

Project management. For the successful implementation of innovative projects, it is necessary to have an effective project management system. This will allow you to control costs and create an effective portfolio of innovative strategic development for business.

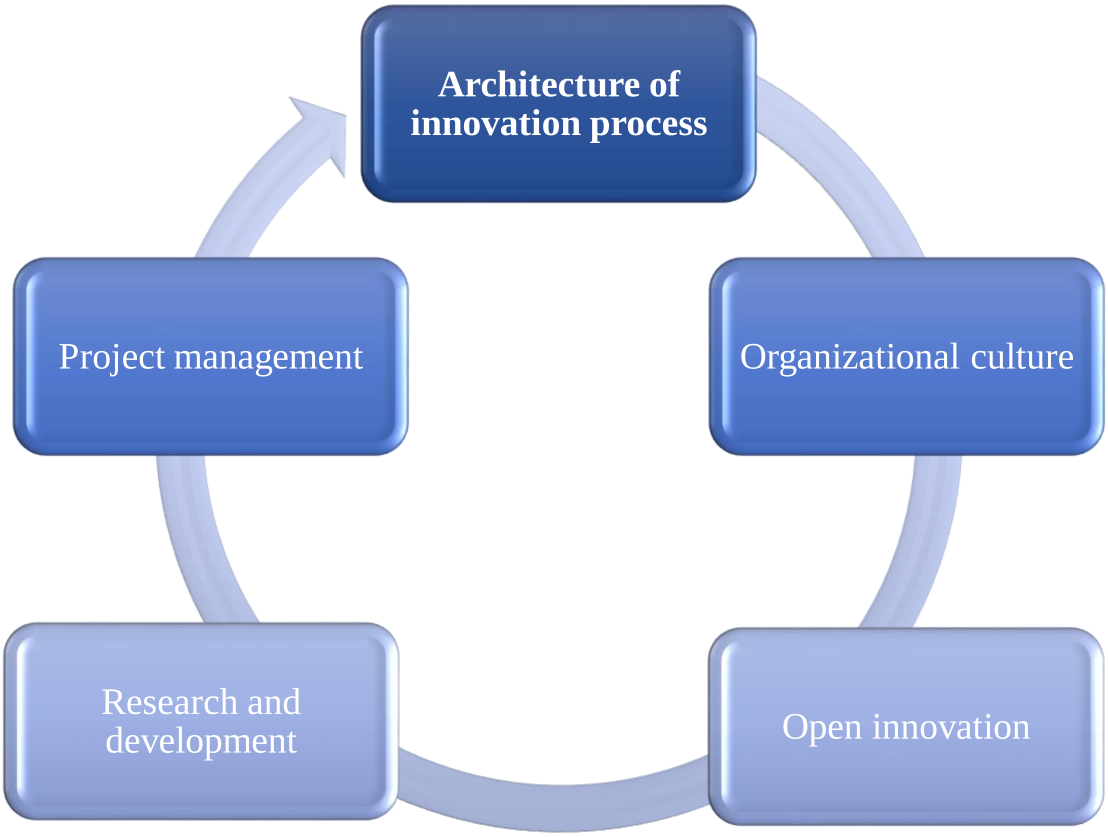

Fig. 8. Architecture of innovation process for business*

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Open innovation is a strategy that allows a company to gain access to external knowledge, ideas and technologies in order to develop and maintain a competitive advantage. The basic idea is to interact with external parties such as customers, suppliers, academic researchers and other partners to develop new products, services and business models. Ideas how companies can apply open innovation can be as follows: involving external experts to solve complex problems and solve challenges; organization of internal and external competitions to stimulate ideas and develop new products and services; partnering with universities and research centers to gain access to the latest research and technology; involving customers in the process of developing products and services in order to receive a full range of feedback and recommendations; cooperation with other companies to share knowledge and experience, solve challenges and develop new innovations, etc. Open innovation can be a real asset to a business, especially in a complex and changing environment. For its successful implementation, it is necessary to have an open mind, be ready to cooperate and use new technologies [26-29].

Management of innovative projects for business is a process aimed at developing and implementing new innovative products, services or technologies. Such projects can be a key factor in business success, as innovation allows a company to be more competitive, more efficient and responsive to changing consumer needs. The construction of an effective model of innovative development through the prism of project management is formed according to basic algorithms.

Algorithmization of procedures for modeling the stages of management of innovative projects includes:

- defining the idea of the project, that is, establishing the purpose and potential benefits of the project, determining potential risks and benefits.

- project development, i.e. creating a detailed project plan, including attracting the necessary resources, assigning tasks and setting deadlines.

- implementation of the project, i.e. launch of the project and its implementation.

- monitoring and control, i.e. constant tracking of the project, evaluation of results and control over costs.

- evaluation of results, i.e. evaluation of project results and analysis of achieved indicators, tracking of goal achievement.

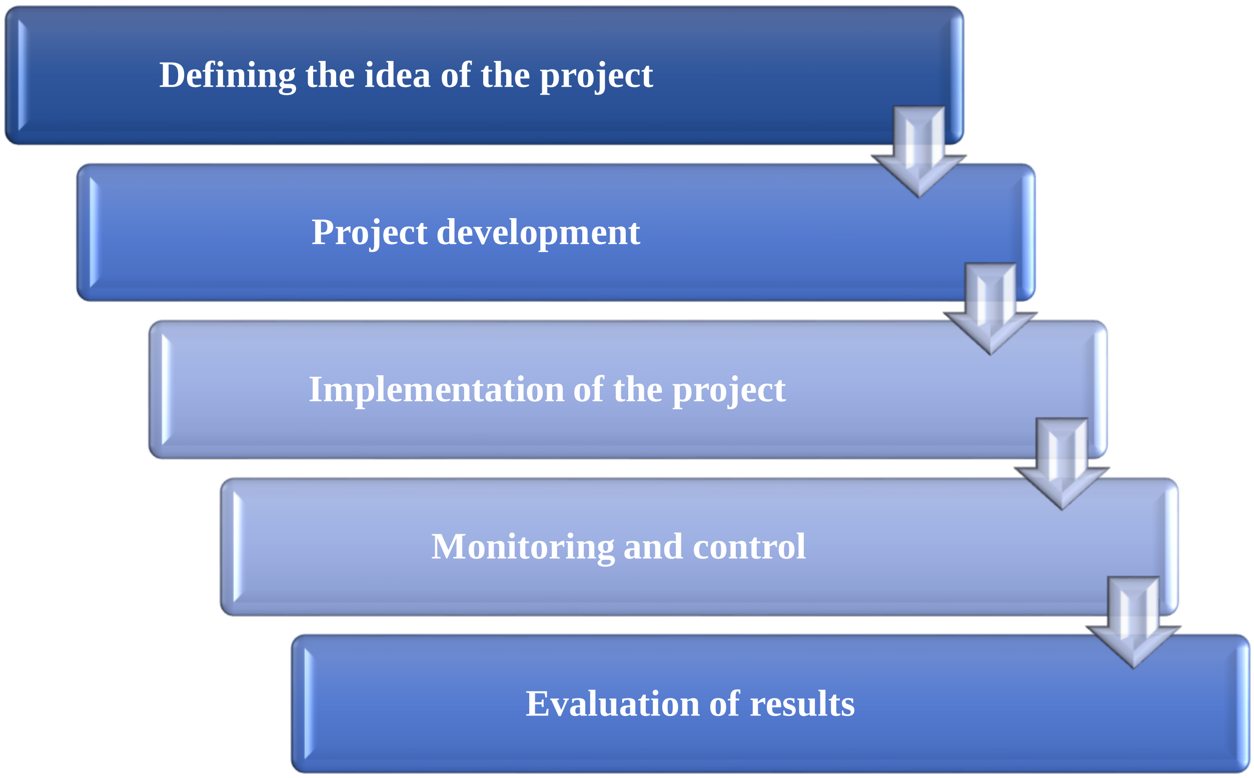

Fig. 9. Algorithmization procedures for modeling innovative projects management*

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Financial project management, which is the process of planning, organization, control and coordination of financial resources spent on the implementation of a certain project, is of great importance in the project management system.

Financial projects can be diverse, they can be investment projects, projects for the development of a new product or service, construction, introduction of new technologies, business reorganization, etc. The main goal of financial project management is to ensure the successful completion of the project within the established budget and on time, with maximum efficiency and profitability. To do this, it is necessary to use various management tools and techniques, including budget planning, cost control, risk assessment and management, prioritization and decision-making, interaction with stakeholders, and others. Financial project management is an important component of effective business management and is a key element in the successful implementation of the company's strategy [19-33].

Financial project management mechanisms can be different, depending on the specific project and its features. However, the main mechanisms used in the management of financial projects may include: budget planning, cost control, risk management, etc. Budget planning consists in drawing up a detailed plan of costs for the project and determining the resources necessary for its implementation. It is important to consider all possible costs and ensure sufficient resources to cover them. Cost control provides monitoring of project costs and identification of deviations from the plan. It is necessary to respond in a timely manner to changes and adjustments to the spending plan. Risk management is a mechanism for identifying and assessing project-related risks and developing a strategy for their management. It is necessary to identify possible risks in time and develop plans to reduce or eliminate them.

Financial project management involves setting priorities that will help ensure the successful completion of the project. The main priorities in managing financial projects are budget, term, quality, risks, and communication.

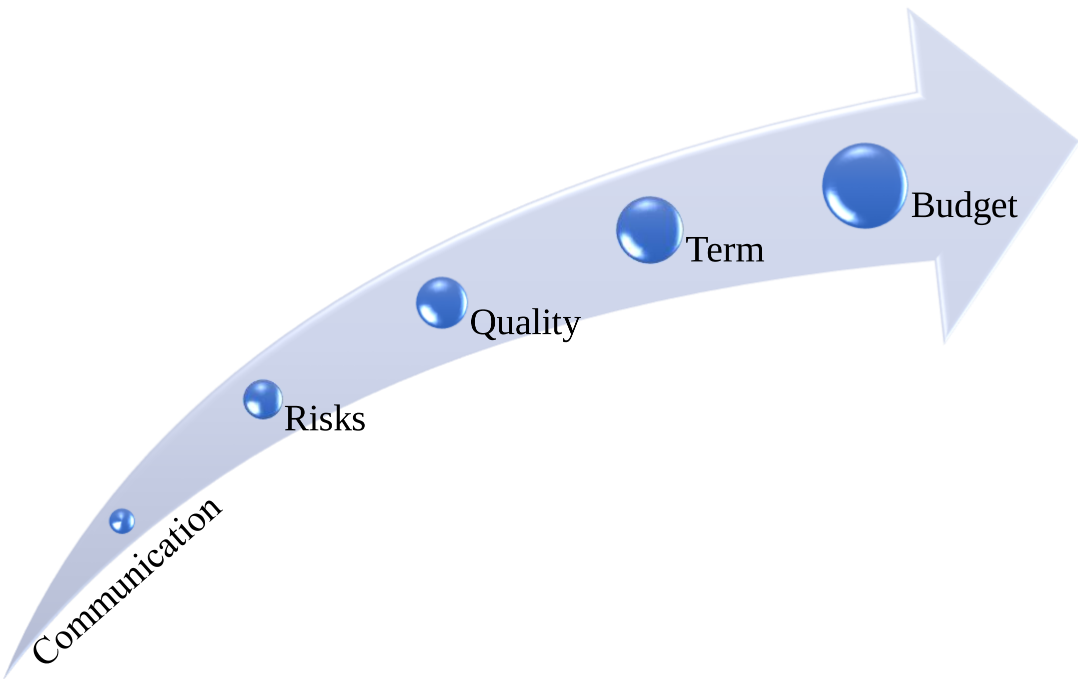

Fig. 10. The priorities in managing financial projects*

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Budget. One of the most important aspects of financial project management is ensuring the financial stability of the project. Budget management includes careful cost planning and cost control throughout the project. Project priorities are determined based on budget constraints and opportunities.

Term. Project timeline management is a critical success factor. Projects must be completed on time to avoid delays and additional costs. Prioritizing project timeline management includes identifying critical tasks and peak productivity to ensure project completion on time.

Quality. Quality management is another important aspect of financial project management. Determining the priorities of quality management consists in ensuring the compliance of the project with requirements and standards, as well as ensuring the quality of project execution.

Risks. Risk management consists in the identification, assessment and management of risks that may arise during the implementation of the project. Determining the priorities of risk management consists in ensuring the prevention of the most important risks and readiness to solve cases of unforeseen circumstances.

Communication. Communication management consists in establishing interaction and mutual understanding between partners and with potential counterparties in order to create close cooperation in various areas of business processes and areas of activity [29-32].

Project management for attracting innovative technologies for business involves the use of methods and strategies that allow effective introduction of new technologies into the company's business processes. Some of the key project management steps to leverage innovative technologies for business include the following vectors.

1. Analysis of business needs. Before starting the project, it is necessary to determine exactly what technologies are needed for the company's business, what problems they have to solve, and what requirements are placed on them. This will make it possible to choose the optimal technology option and build a rational project plan.

2. Selection of partners. For the successful implementation of innovative technologies, it is necessary to choose partners with the necessary competencies and experience. The choice of partners should be based on a thorough analysis of their reputation, experience and other criteria.

3. Development of a business plan. For effective implementation of innovative technologies, it is necessary to develop a detailed business plan that includes project goals, budget, schedule, risks and other parameters. The business plan must be transparent and understandable for all project participants.

4. Risk management. When introducing new technologies, unforeseen circumstances may arise, which may become a threat to the successful implementation of the project. Risk management should be built into the project to ensure controllability of business processes and leveling of possible or potential risks, especially for business processes in conditions of uncertainty [24-39].

The creation of modern projects and the involvement of technologies to ensure the innovative development of business requires the search for solutions in the area of the transfer of innovative technologies.

Transfer of innovative technologies.

Technology transfer should be understood through the prism of the processes of transferring technologies and knowledge from one organization to another with the aim of using them to improve business processes and innovative development. Innovative business development involves the use of new technologies and ideas to improve the efficiency and competitiveness of the enterprise. The process of technology transfer can be carried out by both internal and external technology transfer. Internal technology transfer occurs within an organization when knowledge and technology are transferred between divisions or employees [19-26]. External technology transfer occurs through cooperation with partners, competitors or other organizations. The main steps for successful technology transfer and innovative business development form a basic procedural algorithm.

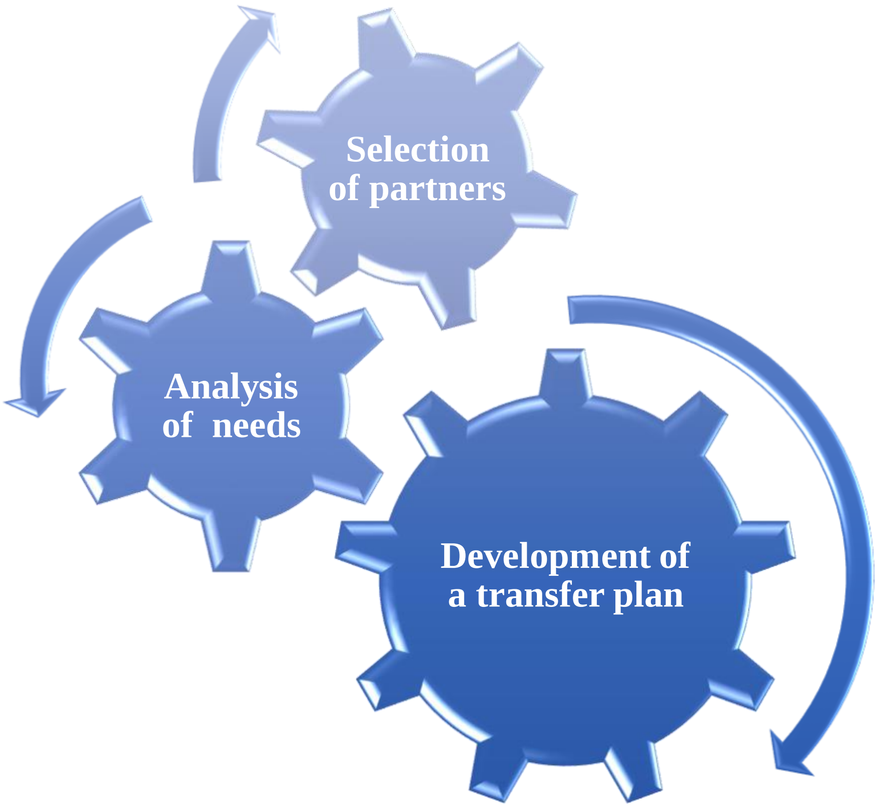

Fig. 11. Procedural algorithm of technology transfer and innovative business development*

**Source: generated by the author*

Let's consider in more detail the integrated components of the interaction between the transfer system components. Analysis of needs. It is necessary to determine exactly what technologies are needed for the company's business, what problems they have to solve, and what requirements apply to them. Selection of partners. For a successful technology transfer, it is necessary to choose partners with the necessary competences and experience. The choice of partners should be based on a thorough analysis of their reputation, experience and other criteria. Development of a transfer plan. The transfer plan should include a strategy for the use of technologies, a description of procedures and mechanisms, a toolkit and a composition of project management components [19-26].

Some types of transfer innovative technologies for business include: technology licensing, franchising, cooperation between companies, acquisition of technology, internal transfer of technology, creation of joint ventures.

Technology licensing

- Technology licensing is the transfer of rights to use technologies of one company to another company that is able to commercialize them

Franchising

- Franchising - the transfer of knowledge and production methods from the franchisor to the franchisee, which enables the latter to use the franchisor's successful business model

Cooperation

- Cooperation between companies - when two or more companies work together on a joint project, are able to interact and share knowledge and technologies to achieve common goals

Technology acquisition

- Technology acquisition - when a company acquires technology from another company or acquires the right to use this technology for its production

Internal transfer

- Internal transfer of technologies - transfer of knowledge and technologies between departments within the company to improve production processes and increase production efficiency

Creation of joint ventures

- Creation of joint ventures - when two or more companies create a joint venture for the purpose of developing and commercializing new technologies

Fig. 12. Types of transfer innovative technologies for business*

**Source: generated by the author*

Licensing of innovative technologies is the process of transferring the right to use technology from the owner to another company or person []. One of the main benefits of licensing innovative technologies is revenue growth, licensing can help technology owners increase their profits as they receive revenue from transferring the rights to use the technology to other companies. Also increasing the popularity of technology, when technologies are licensed, they can become more popular and widespread. This can help technology owners attract more customers. De-risking licensing can help with technology development issues. When other companies take responsibility for using the technology, technology owners can reduce their costs of developing and managing the technology. Disadvantages of licensing innovative technologies include loss of control (when technology is licensed, technology owners may lose control over how their technology is used and developed) and a dynamic competitive environment (technology licensing may create competition for technology owners as other companies may start using the technology and compete with the owners of the technology in the market).

Franchising innovative technologies, one of the varieties of technology transfer, also can be profitable for business, but has its own opportunities and disadvantages. Access to new markets, marketing support, a ready business plan and technical support should be defined as the main opportunities of franchising innovative technologies. Franchising allows entrepreneurs to quickly expand their business due to access to new markets without large investments. With marketing support, the franchisor provides its franchisees with marketing support that helps increase sales and promote the brand. Franchisors usually provide a ready-made business plan, which allows the franchisee to quickly launch the business. The franchisor can provide technical support to the franchisee, which reduces the risk of errors and lowers staff training costs. Disadvantages include high start-up costs, franchisees usually have to pay a large amount to join the franchise and to use the franchisor's brand and other materials. Also obstacles are limited opportunities, franchisees must follow the rules and standards established by the franchisor, which limits their opportunities in conducting business. Dependence on the franchisor is a more negative side as well. Franchisees are completely dependent on the franchisor, who controls the brand, standards and regulations [16-29]. The lack of innovation through the prism of shortcomings should be considered when franchisors focus on standards and to a lesser extent prefer to attract innovation as a not always successful investment.

Integration of companies in order to attract and use innovative technologies also has its own possibilities. The main opportunities for the integration of companies to attract and use innovative technologies:

- access to new technologies (integration of companies allows access to new technologies and innovations that can increase business efficiency and provide a competitive advantage);
- resource support (integration of companies can help provide resource support for business development).

Internal transfer of innovative technologies is the process of transferring new knowledge, technologies and ideas within one company [16-26]. The increase in efficiency from internal transfer is provided on the condition that. when a company innovates within its own business. A company can reduce research and development costs because it already has access to internal resources and expertise. As the speed of adoption increases, innovations are transferred within the company, which can simplify the implementation process as there is no need to enter into new contracts or interact with new suppliers. Internal transfer of innovation can facilitate interaction between different departments of the company and increase the level of communication between them through increased cooperation and communication. Increased control and protection of intellectual property is applied on the condition that innovations are transferred within the company. This reduces the risk of losing control over the project and protecting intellectual property, as the company remains the owner of the intellectual property. Staff motivation when implementing the internal transfer of innovations can contribute to the development of new projects and increase the motivation of staff involved in this process. Therefore, the internal transfer of innovative technologies can be beneficial for companies that want to reduce risks in different areas of the company's activities.

The internal transfer of innovative technologies has its weaknesses, which can affect the efficiency of the innovation process. Such limitations are the number of innovations, internal conflict, insufficient coordination. The internal transfer of innovative technologies is usually limited to the company's field of activity, which may limit the amount of innovation that can be introduced. Moving innovation between company divisions can lead to conflicts between employees who have different interests and views on innovation (internal conflict). Insufficient coordination of the internal transfer of innovative technologies can be a complex and sometimes inconvenient process that may require a lot of coordination and coordination between different departments.

Management business solutions for the transfer of innovative technologies.

Management of the transfer of innovative technologies is a complex process that requires organizational management to make a number of strategic decisions []. The step-by-step algorithm can be presented as follows (Fig. 13).

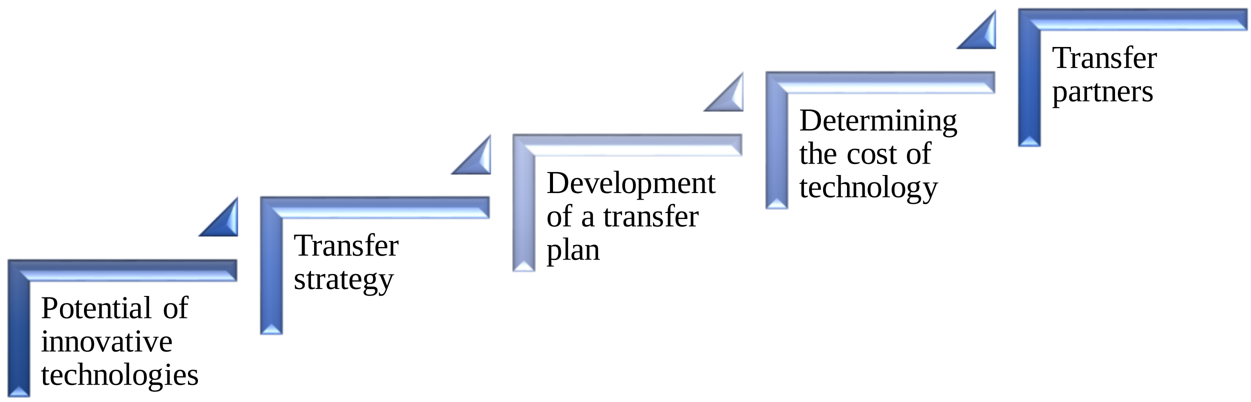

Fig. 13. Algorithms for making business decisions for the transfer of innovative technologies*

**Source: generated by the author*

The modern basis of important management business decisions for the effective transfer of innovative technologies are the following.

1. Evaluation of the potential of innovative technologies. Before deciding on the transfer of an innovative technology, it is necessary to assess its potential, which will

help the organization make an informed decision about whether it should invest in the transfer of this technology.

2. Choosing a transfer strategy. After assessing the potential of the technology, it is necessary to choose the optimal strategy for its transfer, which can be through licensing, franchising, joint development or other.

3. Development of a transfer plan. After choosing a transfer strategy, it is necessary to develop an action plan, which should include a clear formulation of goals, determination of resources, a marketing plan for technology, responsible for the implementation of the plan.

4. Determining the cost of technology. A company must determine the cost of the technology it wishes to transfer, and must also consider the costs of developing the technology, the potential profitability of using it, the competitive environment, and other factors.

5. Selection of a transfer partner. The company should choose a partner for technology transfer, special attention should be paid to the situation regarding competitive positions in the market and image.

Financial ideas and solutions for effective technology transfer.

Effective technology transfer can be a big investment for a company, but requires appropriate financial tools and solutions. Such ideas and solutions that can help ensure effective technology transfer can be defined as: financing of technology development, financing of technology transfer, creation of a special fund and use of crowdfunding.

Financing technology development is a key factor affecting its potential. Companies can invest in their own research and development, or establish partnerships with academic and research institutions to jointly finance research and development. When financing technology transfer, companies can use various instruments to finance technology transfer, such as loans, investments, grants, license fees, etc. It is important to choose the optimal financing option depending on the technology transfer strategy and the cost of the technology itself. The creation of a special fund for technology transfer can be an effective solution for attracting financing. Such a fund can be created at the expense of investments from organizations, private investors or government sources. The use of crowdfunding can be an effective tool for attracting financing for the development and transfer of technology.

The transfer of financial technologies means the transfer of knowledge, skills and technologies in the field of finance from one country or region to another in order to improve the financial sector and increase the efficiency of its work [30-38]. This process can be carried out through direct investment, technology licensing, partnership, cooperation and exchange of experience between financial institutions. Such a transfer can lead to a reduction in the cost of services, an increase in competitiveness, an improvement in the quality of customer service and a wider access to financial services for the population. Also, an important aspect of the transfer of financial technologies is the improvement of financial literacy of the population and the development of infrastructure, which makes it possible to increase the availability of financial services for a wide range of people [30-38]. However, it is important to ensure that this process is open, transparent and conducted on mutually beneficial terms for all parties to ensure the sustainable development of the financial sector as a whole. During technology transfer, companies may be forced to share confidential information with their partners, which may lead to its leakage. This can lead to great losses for the company, including loss of competitive advantage. A negative consequence should be understood as a high cost. Technology transfer can be a very expensive process, especially if it involves research and development of new technologies, which can be an unnecessary expense if companies cannot get enough benefits from using the technology. There are opportunities to obtain risks of technology failure. Sometimes technologies that have been used successfully in one company may not be suitable for another company, resulting in unexpected problems with the use of the technology and loss of investment. Negative features also include potential problems with patent law. Patent law issues may arise during technology transfer. If the companies cannot agree on the rights to use the technology, it can lead to lawsuits and legal fees. Weaknesses arise in the absence of control over technology. After the transfer of technology, the company may lose control over it [30-36]. This may result in companies not being able to determine how the technology is being used or not being able to make changes to the technology in the future.

The advantages of the transfer of financial technologies can be the reduction of development costs, improvement of product quality, reduction of risks, expansion of markets, development of innovations, increase of business efficiency. When companies share their technologies, they can avoid unnecessary development costs, thereby ensuring faster commercialization of new products and services. If companies combine their technologies, they can improve the quality of their products and services. This can help increase customer satisfaction and increase customer loyalty. If companies use technologies that have been successfully implemented in other companies, then they can reduce the risks associated with the introduction of new technologies, which will help reduce production costs and increase the probability of success of new products and services. The transfer of financial technologies can help companies expand their business by opening access to new markets, which also includes additional opportunities for business growth and development. Through the prism of innovation development, the transfer of financial technologies will help companies increase their innovativeness. When companies gain access to new technologies, they can improve their market position.

Financial technology can help reduce the time it takes to process financial transactions and make processes easier for customers. This can help increase business efficiency.

However, at the same time, there will be a risk of losing confidential information. During technology transfer, companies may be forced to share confidential information with their partners, which may lead to its leakage. This can lead to great losses for the company, including loss of competitive advantage. A negative consequence should be understood as a high cost. Technology transfer can be a very expensive process, especially if it involves research and development of new technologies, which can be an unnecessary expense if companies cannot get enough benefits from using the technology. There are opportunities to obtain risks of technology failure. Sometimes technologies that have been used successfully in one company may not be suitable for another company, resulting in unexpected problems with the use of the technology and loss of investment. Negative features also include potential problems with patent law. Patent law issues may arise during technology transfer. If the companies cannot agree on the rights to use the technology, it can lead to lawsuits and legal fees. Weaknesses arise in the absence of control over technology. After the transfer of technology, the company may lose control over it [30-36]. This may result in companies not being able to determine how the technology is being used or not being able to make changes to the technology in the future.

Some of the financial technologies that can be used for transfers include:

1. Blockchain (technology that allows creating safe, reliable and fast financial transactions, and also provides protection against fraud and data loss);

2. Cloud technologies (a solution that ensures data storage in the cloud, which enables companies to access data at any time and from any place);

3. Application Programming Interface (an interface that allows companies to interact with each other using open standards and protocols);

4. Machine Learning and Artificial Intelligence (technologies allow companies to create programs that can analyze and predict certain trends in the financial sector);

5. Mobile Payments (technologies allow using mobile phones for contactless payments and money transfers);

6. Robo-advising (technologies are used to provide investment advice using algorithms and machine learning);

7. Big Data (technologies of collecting and analyzing large volumes of data that allow companies to make decisions based on accurate and up-to-date data).

Digital transformation through the prism of cloud financial technologies for business transfers.

Cloud financial technologies (cloud financial technologies) is a solution that ensures the preservation of financial data and information in the cloud, which is located on the servers of external providers [30-38]. These technologies enable businesses to store, process and transmit financial information over the Internet, instead of traditional local storage on computers or servers. The main advantage of cloud financial transfer technologies for business is the reduction of data storage and processing costs, as there is no need to invest in cloud data.

Cloud financial technologies, also known as FinTech, have become popular among businesses for transferring funds over the Internet. FinTech is a field that combines technology and financial services. Financial technology can help businesses improve their financial operations and provide more efficient financial management [30-38]. The main characteristics are presented.

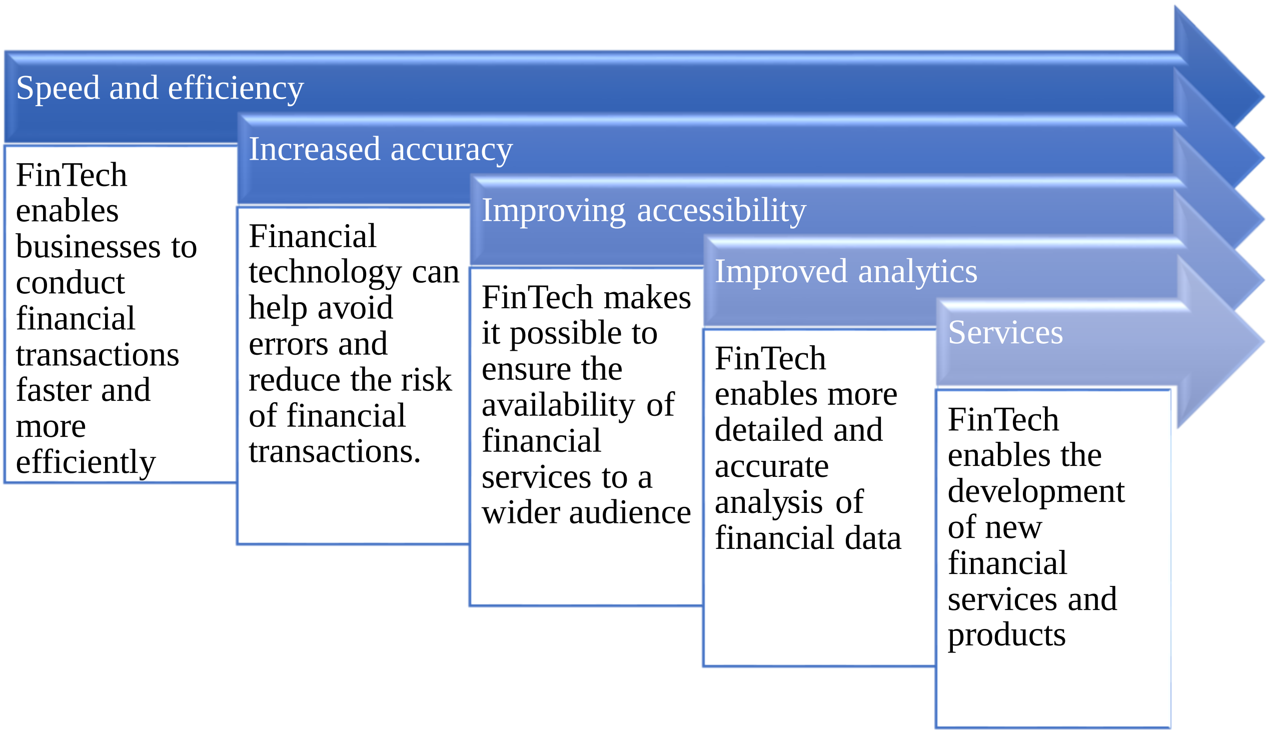

Fig. 14. Characteristics of FinTech for improving business performance*

**Source: generated by the author*

Features of FinTech for business include the following. FinTech enables businesses to conduct financial transactions faster and more efficiently – the use of electronic payment systems allows for non-cash transactions in real time. Financial technology can help avoid errors and reduce the risk of financial transactions. For example, the use of automated accounting systems allows to reduce the risk of errors in accounting. FinTech makes it possible to ensure the availability of financial services to a wider audience, including small and medium-sized enterprises, like online lending can make financing available to small businesses. FinTech enables more detailed and accurate analysis of financial data – the use of analytical programs allows you to analyze data on sales and financial results of a business. Development of new services. FinTech enables the development of new financial services and products. For example, the use of blockchain technologies can help to use cryptocurrencies to carry out operations in the external environment of companies, as well as to develop internal potential.

The use of FinTech for business can have significant results, especially if the business uses financial technology skillfully. The main advantage of FinTech for business is cost reduction. Financial technologies allow businesses to reduce the costs of operations and processing of financial information. For example, the use of electronic payment systems can reduce the costs of processing cash transactions. Financial technologies thereby allow businesses to increase the efficiency of operations and ensure a more successful outcome.

FinTech, i.e. financial services technologies, can provide many other benefits for businesses.

Improvement of efficiency. Fintech platforms can help businesses reduce costs and improve process efficiency. For example, automated payment processing systems can significantly reduce the amount of time employees spend on manual data entry and information gathering.

Reduction of risks. Fintech tools can help reduce the risk of fraud and other criminal activity related to financial transactions. With tools such as biometric authentication, multi-factor authentication, blockchain and encryption technologies, fintech platforms can provide greater security for financial transactions.

Improving accessibility. Fintech platforms can help make financial services more accessible to people who live in remote locations or do not have access to traditional banking services. For example, mobile payment systems can provide the ability to pay for goods and services directly from a mobile phone.

Convenience. Fintech tools can provide a more convenient way for businesses to receive financial services, including the ability to make payments online and virtually. This can be especially convenient for businesses that operate in an online environment that requires a lot of electronic billing transactions.

Despite the many strengths that FinTech services can provide, there are also some weaknesses that can compromise their use for business. Threat to cyber security – Fintech tools can be completely dependent on technology and the Internet. This can cause the risk of cyber-attacks and data leaks, which can lead to the theft of financial information about customers, violation of their privacy, etc. Dependence on technology will cause a situation where a business using FinTech platforms may become dependent on technology, which may reduce its ability to function if technical problems arise. Not all clients may be interested in using FinTech services. For example, older people who are not sufficiently computer literate may be less interested in using these services. This is a market constraint. An insufficient regulatory framework for the Fintech industry is not always sufficiently regulated. This can lead to a lack of quality control over the activities of FinTech companies and increased risks for businesses that use their services [36-42].

FinTech strategies for businesses can vary depending on the type of business and its needs. Here are some general strategies that businesses can use to take advantage of FinTech innovations:

1. Use of digital platforms. A business can use FinTech innovations to create its own digital platform where customers can access products and services, which can help increase the convenience and accessibility of services for customers and reduce service costs.

2. Expansion of the financial portfolio. A business can expand its financial portfolio by using FinTech tools, such as investment platforms or online lending, which will help increase profitability and diversify the business portfolio.

3. Use of automation. Fintech tools can help businesses automate processes and reduce reliance on manual work.

FinTech is a technological sector that combines finance and technology and provides financial services and solutions using innovative technologies. Managing a FinTech business can be a challenging task as it depends on many factors such as technology, laws and regulations, competition, etc. [30-42]. However, the following mechanisms can help manage a FinTech business more effectively:

1. The best way to attract customers and compete in the market is to develop unique fintech products that can provide significant advantages over traditional financial products. For example, it can be electronic money storage, free international transfers, startup funding, etc. (Product development)

2. Fintech companies must comply with regulatory requirements and regulations set by the government, this may include licensing and registration under the law (Regulatory Compliance).

3. Competitiveness can be ensured by offering competitive prices and unique features that differentiate you from other players in the market (Competitiveness).

4. Fintech business depends on speed and innovation in the field of technology (Technological development) (Fig. 15).

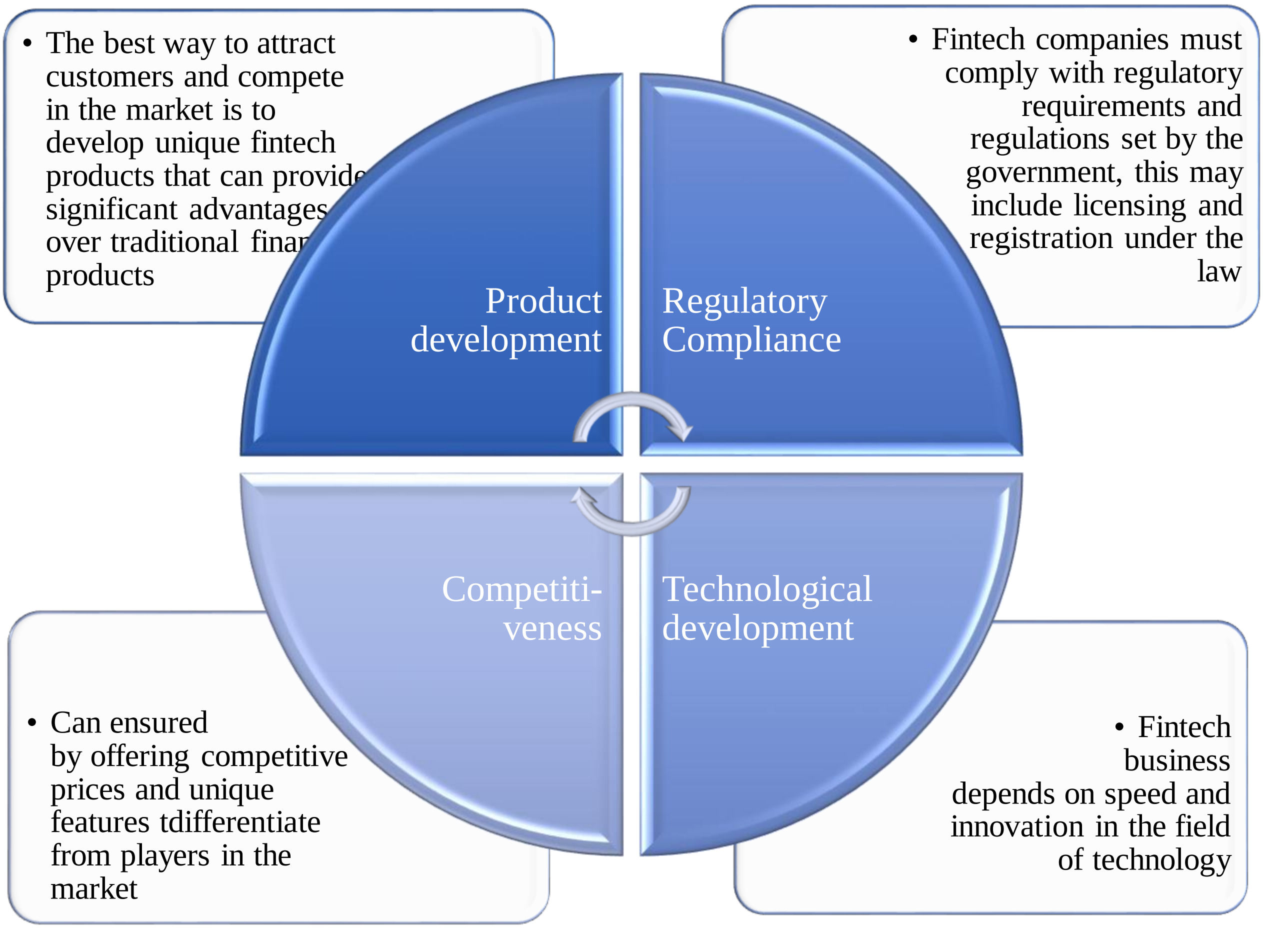

Fig. 15. Mechanisms Fintech management for business development*

**Source: generated by the author*

World experience proves that the use of the transfer of innovative technologies, regardless of a number of weaknesses, has a strong prerequisite for use in business management. One of the important strategic decisions is the creation of conditions for the involvement of the sphere of innovative technologies for the post-war recovery of Ukrainian business. Today, in various industries, individual components of innovative development are already being developed and widely implemented, but there are areas of business that almost do not use such opportunities.

The conducted research also allows us to draw conclusions that there is no homogeneity in the involvement of them or other components of innovative development. Some areas increasingly use the transfer of innovative information technologies to ensure the reengineering of business processes in the direction of digital adaptation and transformation. Other business entities actively involve electronic financial technologies to transfer business online, taking into account the territorial conditions of operation. Some companies use the possibilities of the transfer of innovative technologies to expand production areas and directions due to technological features. The use of innovative development is also a successful solution for companies that had to use business relocation tools.

Modern financial technologies, unfortunately, are only at the beginning of their market attraction in Ukraine. Such a situation is influenced not only by legal support and state regulation, but also by the possibility of wide use of tools in the conditions of the Ukrainian economic and financial system. It should be noted that the current stage of the development of the financial system of Ukraine is quite developed and has all the necessary prerequisites for the involvement of innovative technologies in order to accelerate the integration processes into the world financial system using the latest technologies.

References:

1. Sokolova, A. P., & Sukhareva, O. A. (2020). Directions and efficiency of innovative development of agricultural enterprises. *Complex Systems: Innovation and Sustainability in the Digital Age:*1, 401-407 [in English].

2. Zavidna, L., Makarenko, P. M., Chepurda, G., Lyzunova, O., & Shmygol, N. (2019). Strategy of innovative development as an element to activate innovative activities of companies. *Academy of Strategic Management Journal*, 18(4), 1-6 [in English]..

3. Afanasieva, O., Volska, O., Khasanov, B., Yemtsev, V., & Matveeva, V. (2020). Strategic management mechanism of innovative development of industrial companies. *Academy of Strategic Management Journal*, 19(4), 1-7 [in English].

4. Stanisławski, R. (2021). Determinants of innovative development and their importance for small and medium-sized enterprises in Poland. *International Journal of Innovation and Learning*, 29(1), 67-88. [in English].

5. Shvaika, O., & Kupriyanova, M. (2020). Forecasting Innovative Development of a Company in the Process of Transformation. In *SHS Web of Conferences* (Vol. 89, p. 06001). EDP Sciences [in English].

6. Fadyeyeva, V. (2019). Corporate social responsibility as the basis of innovative development of modern companies: literature review and empirical study from Ukraine [in English].

7. Shtal T.V., Svitlichna V.Yu., Kravtsova S.V., Kraynyuk L.N., Pokolodna M.M. (2021) Digitalization as a Tool for Ensuring Innovative Development of Restaurant Business. *Estudios de economía aplicada*.. 39, Nº Extra 5, (Issue dedicated to: Special Issue Innovation in the Economy and Society of the Digital Age). URL: http://ojs.ual.es/ojs/index.php/eea/article/view/4898. DOI: http://dx.doi.org/10.25115/eea.v39i5.4898 [in English].

8. Upravlinnya finansovoyu bezpekoyu pidpryyemstv torhivli v umovakh nevyznachenosti : kolektyvna monohrafiya / Za zah. red. A. S. Krutovoyi. – KH. : Vydavetsʹ Ivanchenko I. S., 2017. 264 p. [in Ukrainian].

9. Levkovetsʹ O.M. (2019). Investytsiynyy biznes-konsaltynh: zmist, tekhnolohiyi, potentsial. *Ekonomichna teoriya ta pravo*. 4(39), 65-82 [in Ukrainian].

10. Krutova A.S. (2014). Stsenarnyy pidkhid do prohnozuvannya i planuvannya prybutku pidpryyemstv. *Ekonomichna stratehiya i perspektyvy rozvytku sfery torhivli ta posluh* : Zb. nauk. pr. Kharkiv : KHDUKH, 2 (20), 25-36 [in Ukrainian].

11. Zhylyakova O.V. (2016). Sutnistʹ definitsiyi «antykryzova stratehiya» ta yiyi rolʹ v protsesi antykryzovoho upravlinnya pidpryyemstvom. *Scientific Journal «ScienceRise»*, 12/1 (29), 14-17 [in Ukrainian].

12. Nesterenko O. (2021). Transparency of financial reporting in the conditions of modern information technology. *Research and Innovation: Conference proceedings.* Yunona Publishing, New York, USA, 112 – 127. [in English].

13. Davydova O. (2020). Sustainable Development Of Enterprises With Digitalization Of The Economic Management. *International Journal of Advanced Science and Technology,* 29(8s), 2370–2378. Retrieved from: http://sersc.org/journals/index.php /IJAST/article/view/14712 [in English].

14. Sytnyk Yo. (2022). The Main Negative Factors of Military Influence on the Economic Environment of the Region and its Financial and Economic Security. *International Journal of Computer Science and Network Security*, 22(6), 241 – 245. http://paper.ijcsns.org/07_book/202206/20220633.pdf. https://doi.org/10.22937/IJCSNS.2022.22.6.33 [in English].

15. Zhyliakova O. (2018). Financial diagnostics as an instrument for promoting sustainable development of the enterprise in a crisis conditions. *Professional competency of modern specialist: means of formation, development and improvement: monograph.* Warsaw: BMT Eridia Sp .z o.o., 383-397 [in English].

16. Secundo, G., Toma, A., Schiuma, G., & Passiante, G. (2019). Knowledge transfer in open innovation: A classification framework for healthcare ecosystems. *Business Process Management Journal*, 25(1), 144-163 [in English]..

17. Hayter, C. S., Rasmussen, E., & Rooksby, J. H. (2020). Beyond formal university technology transfer: Innovative pathways for knowledge exchange. *The Journal of Technology Transfer,* 45, 1-8 [in English].

18. Shi, G., Ma, Z., Feng, J., Zhu, F., Bai, X., & Gui, B. (2020). The impact of knowledge transfer performance on the artificial intelligence industry innovation network: *An empirical study of Chinese firms*. PloS one, 15(5), e0232658 [in English].

19. Da Silva, V. L., Kovaleski, J. L., & Pagani, R. N. (2019). Technology transfer in the supply chain oriented to industry 4.0: a literature review. *Technology Analysis & Strategic Management*, 31(5), 546-562 [in English].

20. Belitski, M., Aginskaja, A., & Marozau, R. (2019). Commercializing university research in transition economies: Technology transfer offices or direct industrial funding?. *Research policy*, 48(3), 601-615 [in English].

21. Gong, X., Zhang, K. Z., Chen, C., Cheung, C. M., & Lee, M. K. (2020). What drives trust transfer from web to mobile payment services? The dual effects of perceived entitativity. *Information & Management*, 57(7), 103250 [in English].

22. Skare, M., & Soriano, D. R. (2021). How globalization is changing digital technology adoption: An international perspective. *Journal of Innovation & Knowledge,* 6(4), 222-233 [in English].

23. Röling, N. (2019). The agricultural research-technology transfer interface: a knowledge systems perspective. *In Making the link* (pp. 1-42). CRC Press [in English].

24. Harnaha, O. M. (2021). Suchasni tendentsiyi mizhnarodnoho transferu innovatsiynykh tekhnolohiy. *Bulletin National University of Water and Environmental Engineering*, 1(93), 26-34 [in Ukrainian].

25. Kichuk, O. S. (2019). Transfer innovatsiynykh tekhnolohiy: perspektyvy ta mozhlyvosti natsionalʹnykh pidpryyemstv. *Molodyy vchenyy*, (4 (2)), 489-493 [in Ukrainian].

26. Kraus, K. M., Kraus, N. M., & Manzhura, O. V. (2019). Diahnostyka vplyvu doslidzhenʹ ta innovatsiynykh rozrobok na transfer tekhnolohiy v Ukrayini. *Efektyvna ekonomika,* (2) [in Ukrainian].

27. Nifatova, O. M., & Svyatetsʹkyy, V. V. (2021). Analiz mizhnarodnoho dosvidu peredachi innovatsiynykh tekhnolohiy vid universytetiv do pidpryyemnytsʹkoho seredovyshcha. *Visnyk Kyyivs'koho natsional'noho universytetu tekhnolohiy ta dyzaynu. Seriya Ekonomichni nauky*. [in Ukrainian]/

28. Vasylʹtsiv, T. H., Mulʹska, O. P., & Zaychenko, V. V. (2022). Rozvytok transferu innovatsiy i rynku intelektualʹnoyi vlasnosti: problemy ta perspektyvy dlya pidpryyemnytstva v ukrayini. *Pidpryyemnytstvo i torhivlya*, (34), 11-19 [in Ukrainian].

29. Zhitar', M. O., & Lenkevich, Ye. V. (2019). Franchayzing kak forma vedeniya biznesa v Ukraine. Biznes Inform, (9 (500)), 293-298 [in Ukrainian].

30. Sodoma, R. I. (2021). Mizhnarodnyy franchayzynh yak forma osvoyennya svitovykh rynkiv. *Zbirnyk tez*, 193 [in Ukrainian].

31. Konopat·s′ka, I. V. (2019). Mizhnarodnyy franchayzynh yak instrument rozvytku diyal′nosti pidpryyemstva. *In Osvitn'o-innovatsiyna interaktyvna platforma «Pidpryyemnyts'ki initsiatyvy».* Kyyivs′kyy natsional′nyy universytet tekhnolohiy ta dyzaynu [in Ukrainian].

32. Yarmolyuk, A. (2020). Vprovadzhennya modeli vidkrytykh innovatsiy v umovakh rozvytku tsyfrovoyi ekonomiky. *Teoriya i praktyka intelektual'noyi vlasnosti*, (3) [in Ukrainian].

33. Datskova, D. (2022). Osoblyvosti upravlinnya rozrobkoyu novoho tovaru v umovakh vidkrytykh innovatsiy. *Formuvannya rynkovoyi ekonomiky v Ukrayini*, (43) [in Ukrainian].

34. Pasmor, YU. V. (2019). Zavdannya shchodo zabezpechennya vidkrytoho innovatsiynoho prostoru v Ukrayini [in Ukrainian].

35. Voytovych, N. V., & Polyak, YU. YA. (2020). Transfer tekhnolohiy yak skladova innovatsiynoho rozvytku marketynhovoyi diyal′nosti pidpryyemstv APK. *Ekonomika ta derzhava*, (12), 62-66 [in Ukrainian].

36. Hrychkoyedova, M. V., & Demchuk, O. (2019). Transfer tekhnolohiy yak chynnyk innovatsiynoho rozvytku ekonomiky Ukrayiny. *Stratehiya rozvytku Ukrayiny*, (1), 172-176 [in Ukrainian].

37. Fonar′ova, T. A., Ustinov, A. A., Bushuyev, K. M., & Petrenko, V. O. (2021). Transfer tekhnolohiy, yak instrument upravlinnya konkurentospromozhnistyu v intelektual′nomu pidpryyemnytstvi.«. *Upravlinnya proektamy u rozvytku suspil'stva.* Tema:«Upravlinnya proektamy v umovakh pandemiï COVID-19, 296-301 [in Ukrainian].

38. Prokhorova, V., Bozhanova, O., & Hrytsyna, O. (2019). Transfer tekhnolohiy yak skladova innovatsiyno oriyentovanoho rozvytku pidpryyemstva. *Ahrarna ekonomika*, 12(3-4), 71-76 [in Ukrainian].

39. Sviridenko, V., & Gryshko, V. (2022). Formuvannya innovatsiynoyi biznes-modeli v umovakh suchasnykh realiy. *Naukovyy zhurnal «Ekonomika i rehion»,* (3 (86)), 40-45 [in Ukrainian].

40. Bazetsʹka, H. I., Yesina, V. O., & Pushkar, T. A. (2020). Formuvannya modeli vidkrytykh innovatsiy v umovakh tsyfrovoyi transformatsiyi suspilʹstva. *Komunal'ne hospodarstvo mist*, (160), 18-25 [in Ukrainian].

41. Shevchenko, O. M., & Rudych, L. V. (2020). Rozvytok finansovykh tekhnolohiy v umovakh tsyfrovizatsiyi ekonomiky Ukrayiny [in Ukrainian].

42. Bozhenko, V. V., & Pihulʹ, YE. I. (2021). Vplyv tsyfrovizatsiyi na rozvytok finansovykh tekhnolohiy [in Ukrainian].