




# “Commercialization of intellectual property objects in industrial enterprises”

<b>AUTHORS</b>	Petro Pererva  Mariya Maslak 
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Petro Pererva, Doctor of Economics, Professor, Head of Business Economics and International Economic Relations Department, NTU "Kharkiv Polytechnic Institute", Ukraine. (Corresponding author)

Mariya Maslak, Ph.D. of Economics, Associate Professor, Business Economics and International Economic Relations Department, NTU "Kharkiv Polytechnic Institute", Ukraine.



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Petro Pererva (Ukraine), Mariya Maslak (Ukraine)

# COMMERCIALIZATION OF INTELLECTUAL PROPERTY OBJECTS IN INDUSTRIAL ENTERPRISES

## Abstract

Introducing the results of innovative activity into economic circulation is one of the essential characteristics of an effective industrial enterprise. Commercializing intellectual property objects involves coordinated production and commercial activity, adopting and implementing scientifically based decisions. This is necessary to successfully pass an intellectual product through all stages of its life cycle.

The purpose of this study is to form market processes for commercializing intellectual property objects at industrial enterprises, finding the most effective option for their introduction into economic circulation.

The theoretical investigation of the problem made it possible to identify and analyze various possible conceptual approaches to commercializing intellectual property in an industrial enterprise. Among them are market push, market pull, engineering, and reengineering commercialization models.

Separate stages of forming the market model for commercializing intellectual property in an industrial enterprise are highlighted. First, the methodological principles of the vertical, horizontal, and vertical-horizontal market processes of intellectual property commercialization have been developed. The peculiarities of an intellectual product's life cycle are determined; based on this, a market model of intellectual property's life cycle (model of successive changes) is proposed. Finally, for each of the proposed market processes, the main advantages and disadvantages of their practical use are determined, as well as the areas of their most effective usage.

## Keywords

intellectual property, market, commercialization, economic effect, models

## JEL Classification

M31, O32, O33

## INTRODUCTION

Intellectual property is an essential component of the intangible assets of an industrial enterprise. Commercialization and effective management of intellectual assets are sufficient conditions for increasing the market competitiveness of intellectual capital. Commercializing intellectual property objects is the basis of the effectiveness of the intellectual and innovative activity and the creative work of any industrial enterprise. Existing practices (Park, 2015; Volpatti & Yetisen, 2014; Pankevych et al., 2019) indicate the commercial use of intellectual property or, in other words, the involvement of intellectual property rights in economic circulation, which can be achieved in two ways. The first is using an intellectual product during the enterprise's economic activity – a strategy of internal capitalizing intellectual assets (Bozeman, 2020; Volpatti & Yetisen, 2014). The second is entering the market of intellectual property – a strategy of external or combined commercialization of intellectual property (Pererva et al., 2012; Soo et al., 2017).

It is challenging to accurately predict the effectiveness of the market prospects of any intellectual product at the stage of its creation. World statistics on the use of innovations indicate that more than 80% of newly created enterprises close their businesses five years after their establishment since their products do not have market prospects (Pererva et al., 2021a). At the same time, 90% of innovative developments of large companies never become commercial products (De Prato et al., 2015).

According to the Australian Bureau of Statistics, after the creation of almost 317 thousand new small businesses, only 49% survived after 4 years (Trinci, 2018). Modern statistics of innovation implementation are such that out of 15 innovative projects – only one has prospects to be successful, 4 will bring only a small income, 6 will cross the boundaries of the break-even point, and another 4 will experience complete failure and will be closed (Chukhray & Mrykhina, 2018). According to the leading experts, only about 45% of innovative enterprises reach the stage of active sales, although in 60% of cases, they have a high-quality business plan (Pererva et al., 2021b).

The results of the market research conducted by the consulting company Nautech indicate that startups often fail due to reasons beyond the control of the developer of the intellectual asset – imperfect legal support, bureaucratic obstacles, the excessive tax burden for a new enterprise, etc. (Mazzucato, 2016). If analyzing the innovation statistics of recent years related to the survival of high-tech startups based on intellectual property objects, then, despite the contradictions of the data obtained by foreign and Ukrainian experts, the prospects for the successful operation of newly created innovative companies are quite low (Lyalyuk, 2017; Novikov, 2019). That is why introducing intellectual property objects into economic circulation is a risky process that requires unique and competent efforts and specially developed and scientifically based market models to commercialize intellectual property.

Similar efforts should be made not only by the direct developers of intellectual property (industrial enterprises), but also by technology parks, incubators, units engaged in marketing, technology transfer, and making decisions about the commercialization of intellectual assets based on the results of marketing, economic, and technological audits. Therefore, an extremely important and urgent task of every developer of intellectual property objects is the formation and implementation of market models for the commercialization of intellectual property objects in the sphere of their production and commercial activity, the presence of which creates real prerequisites for the effective introduction into the economic circulation of the enterprise's intellectual assets.

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## 1. THEORETICAL BACKGROUND

The increasing efficiency of innovative activity in industrial enterprises is closely related to the process of introducing intellectual property objects into economic circulation (Pererva et al., 2012; Maslak et al., 2021; Mazzucato, 2016; Park, 2015; Volpatti & Yetisen, 2014; Pankevych et al., 2019). The intellectual potential of industrial enterprises does not have significant prospects without a market model of commercializing intellectual property and developing and consuming intellectual technologies (Zemlickienė et al., 2018; De Prato et al., 2015). In global practice, industrial enterprises apply various market models of commercialization regarding their own and engaged

intellectual assets. First, these models allow evaluating the commercial opportunities of the enterprise regarding its use of the intellectual product (Mazzucato, 2016). Second, they assess the commercial results of relinquishing intellectual property rights (Dereń & Skonieczny, 2018). Finally, they reconcile the advantages and disadvantages of each market commercialization model at different stages of the life cycle of an intellectual product (Pererva et al., 2012).

The modern practice of intellectual property commercialization involves two basic methods: “push marketing” and “pull marketing.” The method of “push marketing” (Bozeman, 2020; Dereń & Skonieczny, 2018) predicts the primacy of the intellectual property object. In this case, a compa-

ny should pay special attention to its intellectual development to create demand for its advantages and only secondarily try to adapt to the existing demand in the target market. The tremendous success of the commercialization of intellectual developments is the creation of new needs in the target market using the latest scientific and technical achievements.

The “pull marketing” method (Park, 2015; Morrison, 2021) prioritizes consumer preferences. In these conditions, the patent owner wants to determine the potential demand in the target market and only then implement intelligent technology. Therefore, it is recommended to base this method on M. Porter’s chain of market value creation (Zemlickienė et al., 2018).

Under certain circumstances, the engineering and reengineering model of intellectual property commercialization can be attractive to patent owners. The engineering approach to the formation of the mechanism of commercialization of intellectual property (Morrison, 2021) by analogy with the “market involvement” model should initially consider consumers’ interests and needs. At the same time, the patent-owning enterprise is presented as a set of business processes without borders between structural divisions and consumers. In practice, engineering services are usually provided in a set with “know-how.” In the commercialization of intellectual property, “know-how” is hidden to a certain extent and is not formalized in a separate agreement. This practice leads to the confusion of the definitions of “engineering services” and “technology exchange” since engineering is a method of transfer (transmission) of new intellectual, technological, innovative, and other knowledge. In this regard, engineering services are already a commodity in themselves. Regardless of whether customers will use them in their production and commercial activities, the results will be applied by the customer in practice (Novikov, 2019), which distinguishes them from technology.

The use of the reengineering model (Pererva et al., 2012; Chukhray & Mrykhina, 2018) for the needs of intellectual property commercialization is carried out with the purpose of a radical redesign of the company’s activities to considerably improve current activities in the following development

cycles. In this case, the object of reengineering services is a set of basic and additional management functions and quality indicators of their use (Pererva et al., 2012). Novikov (2019) recommends using two basic types of reengineering: crisis reengineering (when there is a need for anti-crisis measures) and development reengineering (when the indicators of development dynamics deteriorate when the basic system of production organization is no longer able to provide the necessary level of profit). Mechanisms of technology distribution using direct or indirect state support are well-known worldwide.

For the first time, such an idea of transferring technologies created at state-owned enterprises or with the state’s financial participation was formed in the USA (Smirnova, 2015). Until 1980, all intellectual and innovative developments were under federal ownership, which, of course, did not stimulate the activity of their developers. This provision eventually led to a decline in the competitiveness of the US economy, forcing Congress to reconsider this approach.

In Great Britain, intermediaries in commercializing intellectual property are clubs (consortia) of universities, industrial enterprises, and research laboratories created to implement compatible scientific and competitive stages of the creation of intelligent technologies (Lyalyuk, 2017; Smirnova, 2015). Such clubs do not have direct ownership of intellectual property but act as simple intermediaries between authors and consumers of intellectual technologies, distributing information about them. The most famous intermediary is the British Technology Group, the purpose of which is to study the commercial competitiveness of the available proposals of researchers and their subsequent transfer from developers to consumers.

In the Federal Republic of Germany, mediators of the transfer of intelligent technologies are scientific societies, compatible associations of scientists with industrial enterprises (Lyalyuk, 2017; Smirnova, 2015). The most popular is the Fraunhofer Society for the Promotion of Applied Research, which aims to introduce intellectual property objects into the industry (Pererva et al., 2012). Interestingly, the German government provides subsidies up to 40% of the cost of this com-

pany's services to customer companies. Local and federal government bodies play a crucial role in this country, which can act as customers and intermediaries and as sources of financing for intellectual products.

In France, there is a direct mechanism of state regulation of intellectual technology transfer (Volpatti & Yetisen, 2014; Smirnova, 2015). A special organizational committee for this task was created – the National Center for Scientific Research (Centre National de la Recherche Scientifique – CNRS). None of the developers of intellectual property objects can independently carry out their commercialization. CNRS is the structural unit that monitors new intellectual products, investigates their market and industrial significance, and only after that directly carries out their commercial transfer to industrial production.

The Japanese model of commercializing intellectual property objects is interesting from a practical point of view (Novikov, 2019). However, its essence boils down to creating special units – technology commercialization centers (in Japan, they are called “nintei TLO”) based on higher educational institutions. Their function includes providing inventors with market information regarding the needs of the intellectual property market to commercialize intellectual developments on it. At the same time, the functions of the state are reduced to financing 2/3 of the operating costs of nintei TLO (no more than USD 300,000 per year for five years), but only after the actual creation of nintei TLO (Novikov, 2019).

A feature of technology commercialization centers in China, which are created at universities according to the Japanese scheme, is targeted state funding of their work even before they conduct market research and create a bank of future customers of intellectual developments (Smirnova, 2015).

The considered mechanisms and systems of commercialization of intellectual technologies have the right to be implemented in each case if there are relevant national and information-legal prerequisites. In choosing the most appropriate technology commercialization system, an industrial enterprise should decide on a more specific method of commercializing an intellectual prod-

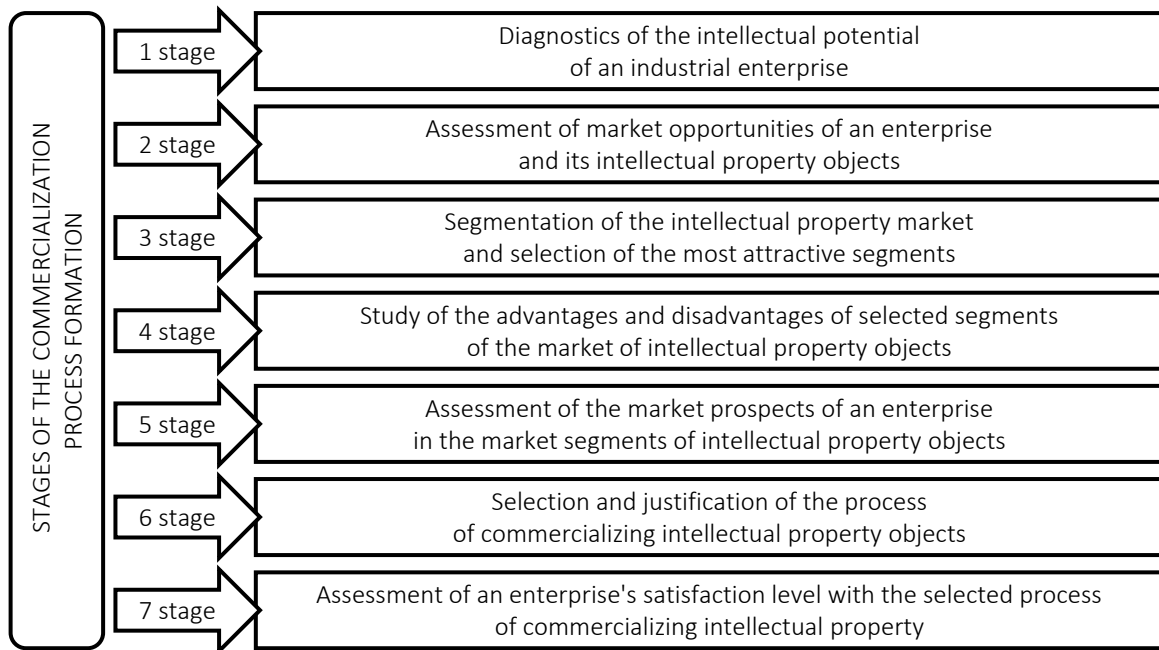
uct (Pererva et al., 2012; Bozeman, 2020). This process can be carried out using different conceptual approaches: own consumption of an intellectual product, transfer of part of the exclusive property rights to an object of intellectual property to another enterprise, or the developer's complete relinquishment of property rights to his intellectual development.

There is often no competition in the intellectual property market, which is explained by the existence of a monopoly right over intellectual property objects, guaranteed to a certain extent by patent or license protection. Characterizing this feature of the market process of commercializing intellectual property, despite the possible market monopoly, the object has a limited nature in its market-commodity form. It does not turn into a commodity in the classical sense immediately, but only when it is purely applied, commercial purpose is revealed after a particular time value. Moreover, the trademark of an object of intellectual property is not revealed until the authors of intellectual developments (small collectives, creative groups, scientists, specialists, inventors) are included in the structure of an operating enterprise. In this case, the results of their intellectual property are intermediate (Pererva et al., 2012).

## 2. RESULTS

The practical formation of the market process of commercializing intellectual property in an industrial enterprise involves the implementation of certain stages (Figure 1).

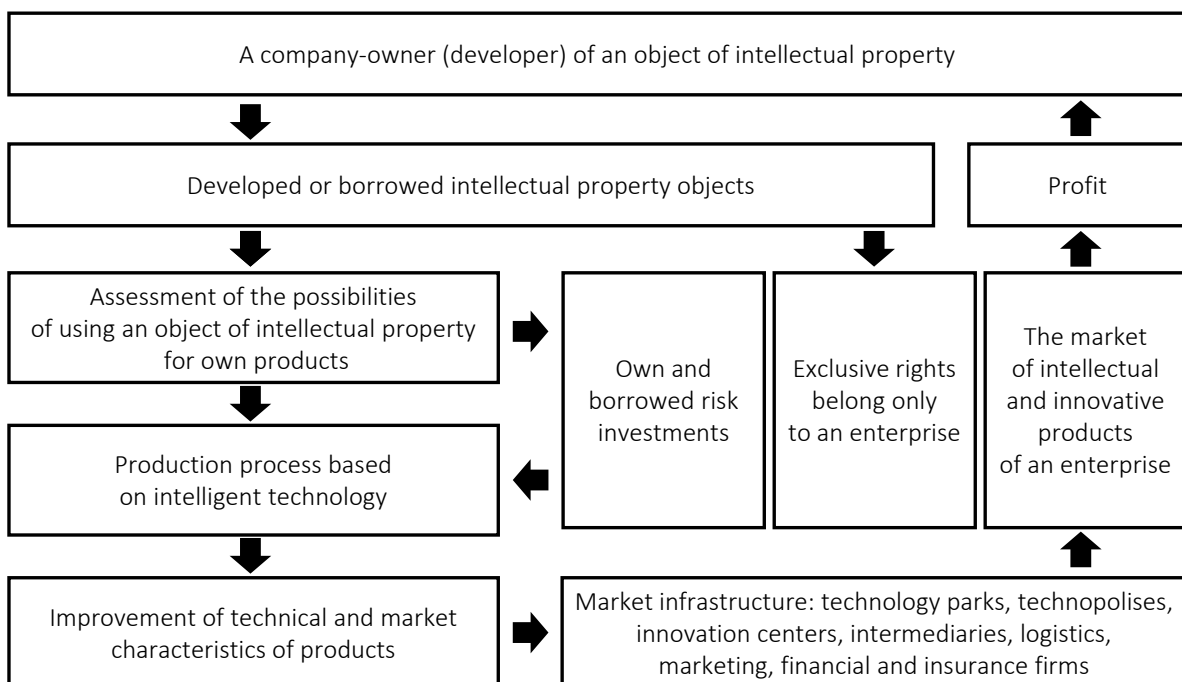
The study of using market processes of commercializing intellectual property objects in industrial enterprises shows that the most widespread is the process of own use (preserving and strengthening competitive advantages). In this case, one considers the vertical commercialization of intellectual property, in which all the profit from the commercial use of intellectual property goes to the right holder. In this commercialization process, the company-patent owner is the only one that receives all the profit; it is the only representative in its target market, and it has all the opportunities to maintain a monopoly market status for a certain time (Figure 2).



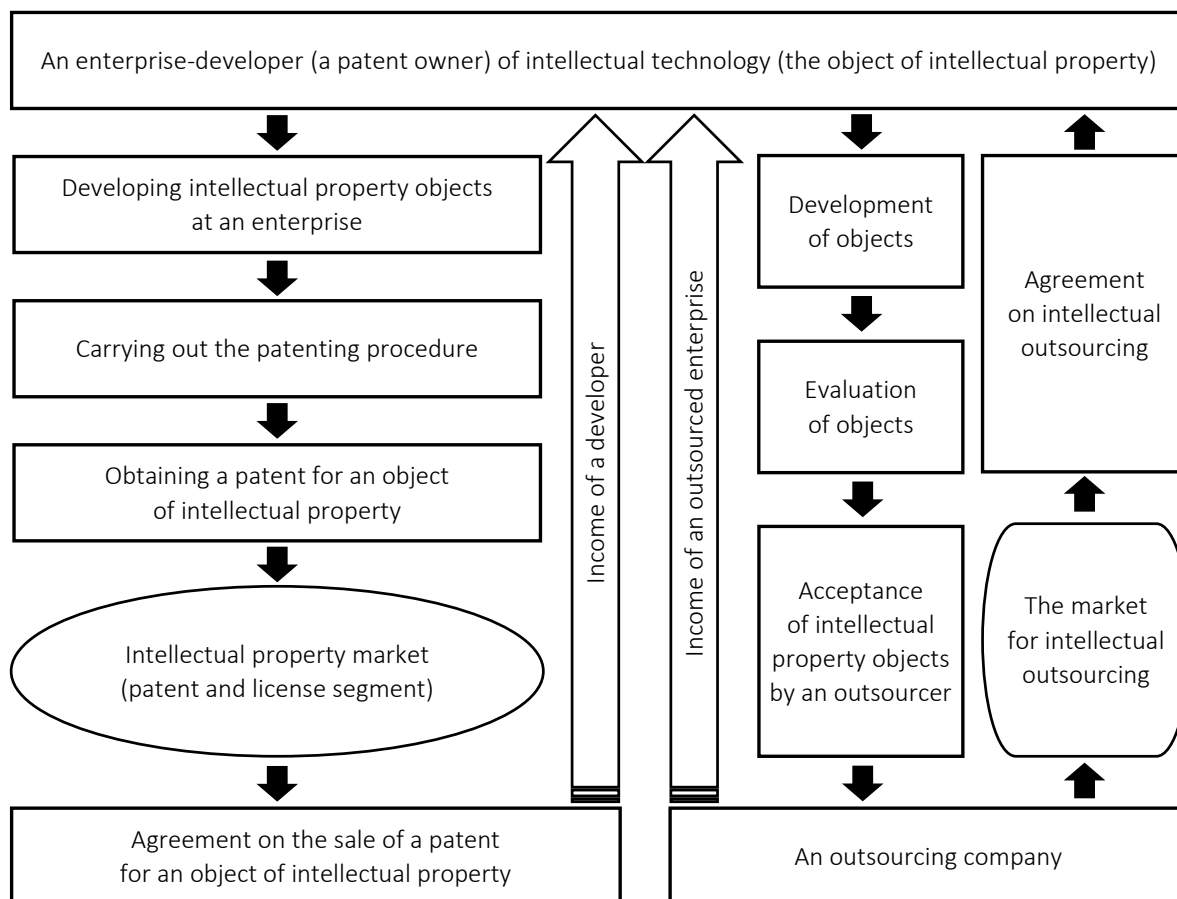
**Figure 1.** Stages of commercialization of intellectual property objects in an industrial enterprise

The main principles of the vertical commercialization of intellectual property objects include the exercise of total control by a patent owner over the innovative production process and the concentration of the entire amount of profit from market sales at one enterprise, which is generally positive for the industrial enterprise when using risk investments in the innovative process.

Along with the vertical market process of commercializing intellectual property objects for broad use, the horizontal market process has the right to exist. It has all the prerequisites for practical use in the innovative activities of enterprises with insignificant innovation capabilities, venture-oriented enterprises, or specialized enterprises that provide specialized professional services for com-



**Figure 2.** Vertical commercialization of intellectual property objects



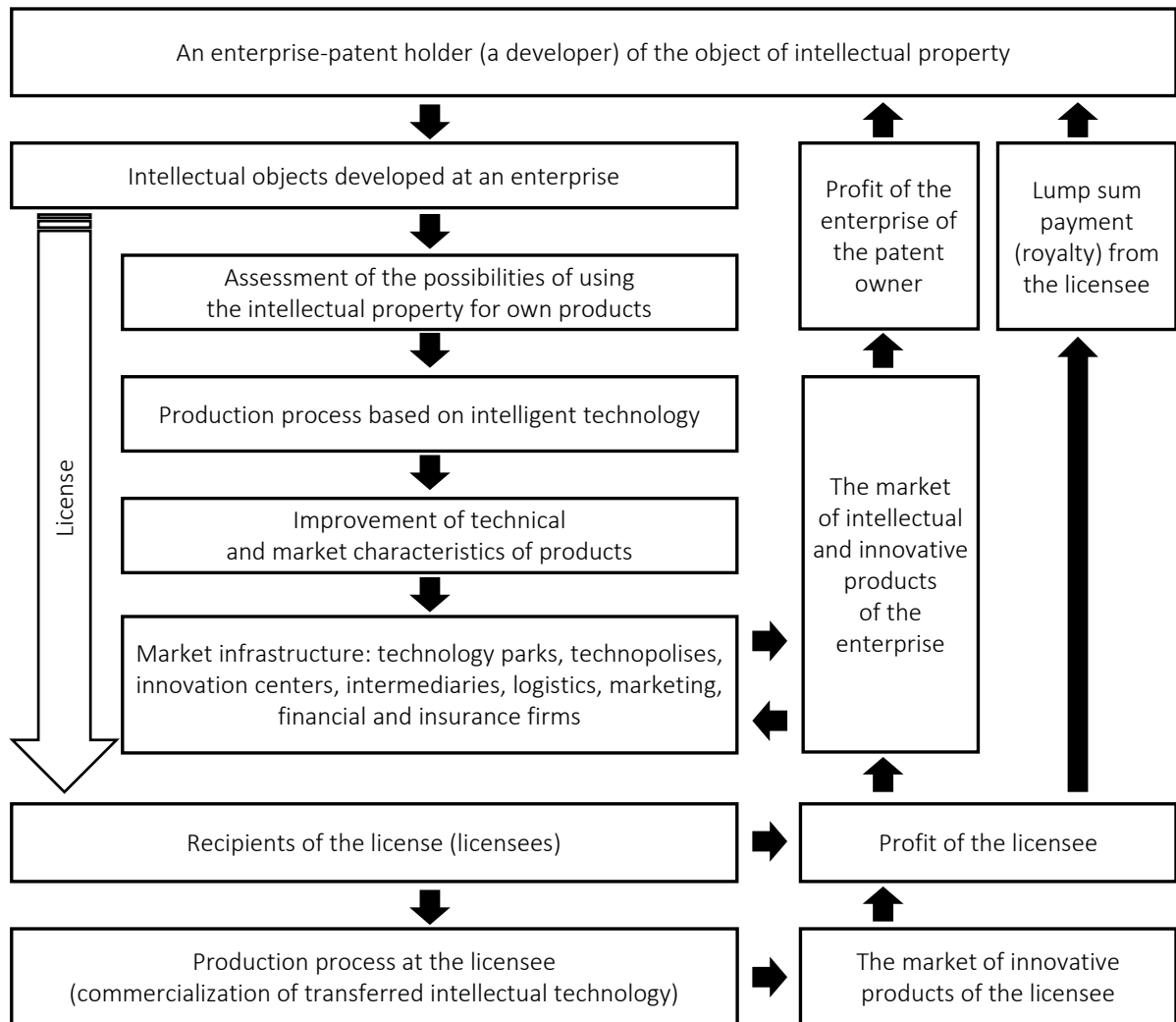
**Figure 3.** Horizontal commercialization of intellectual property objects

mercializing intellectual assets. In the practice of innovative activity of industrial enterprises, the gagging of this process is found under other names: the venture market model of intellectual property commercialization, the model of outsourcing initiative, the model of exclusive licenses, etc. (Bozeman, 2020; Volpatti & Yetisen, 2014; Morrison, 2021).

The basis of the horizontal market process of intellectual property commercialization is the complete alienation of a developer enterprise from the rights to the intellectual product developed by it. Such enterprises conduct their research and development according to the algorithm of venture capital organizations. First, they create intelligent technologies either to obtain income (due to the sale of ownership rights to them) or implement innovative and intellectual processes in the order of other enterprises that have a purely commercial interest. The last option corresponds to the main provisions of intellectual outsourcing. Here, a customer of intelligent technology (an outsourcer)

gives another enterprise (an outsourcer) a scientific and technical task to perform an applied research work for him, the results of which will be used in the future in the production and commercial activities of an outsourcer (Figure 3).

The sale of all property rights to an intellectual product, provided for by the basic principles of the horizontal market process of commercializing intellectual property objects, is one of the easiest forms to organize the commercialization of intellectual property objects. At the same time, property market rights to intellectual property objects are inherent in all the basic features of the product (usefulness – they can satisfy the market needs of consumers; rarity – allows turning an intellectual property object into a marketable product; universality – provides grounds for exchanging this object to other goods). In addition, they represent the results of scientific work and have a certain market price. In comparison with material goods, the sale of intellectual products is carried out only when there are all possibilities of complete alienation of



**Figure 4.** Vertical-horizontal commercialization of intellectual property objects

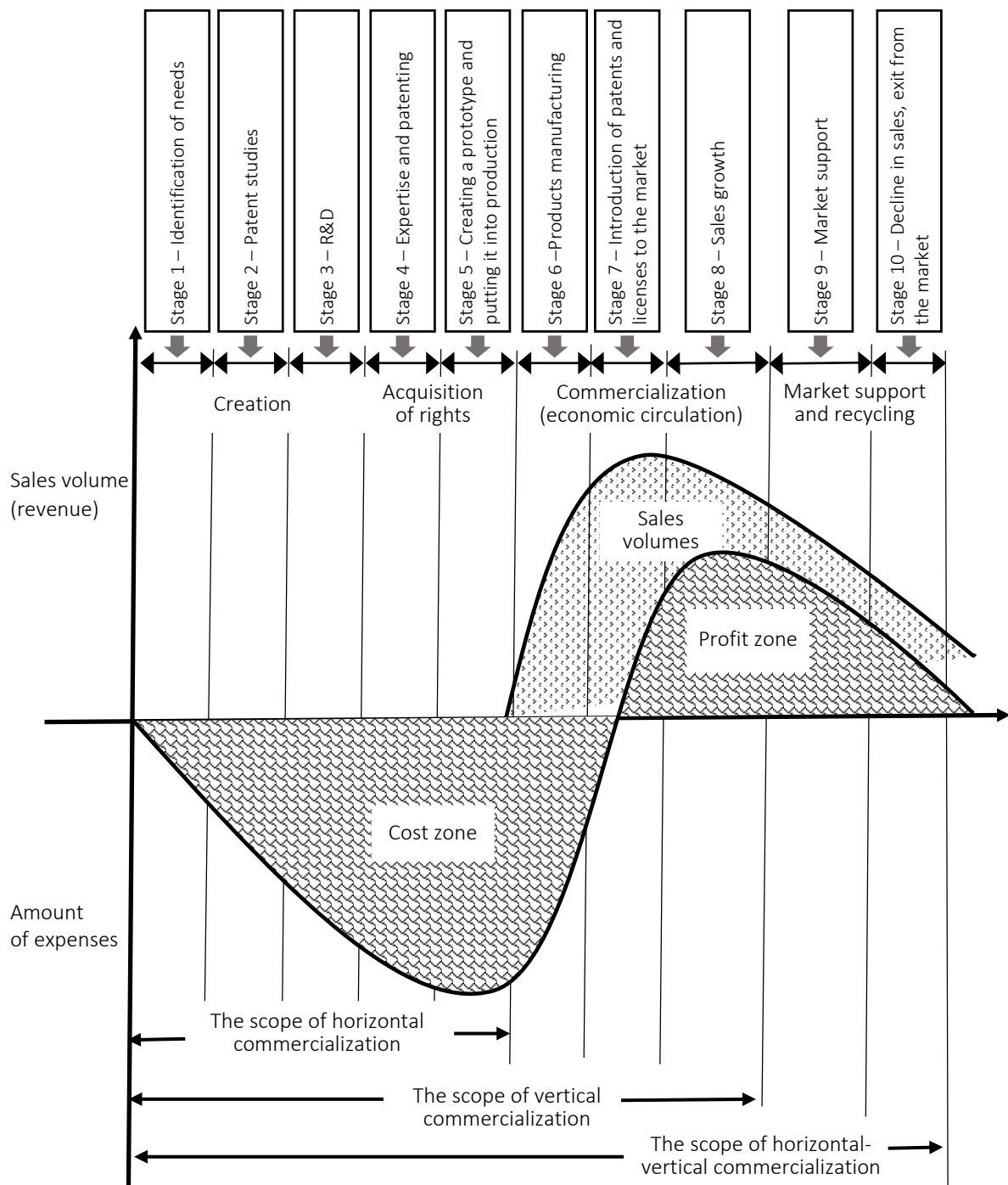
intellectual property rights from a given person (a developer, an inventor) and a developing company. Only in the presence of the specified features, exclusive rights to intellectual and innovative technologies acquire the features of a market product in the traditional sense.

The essence of the vertical-horizontal commercialization of intellectual property objects (the model of single and non-exclusive licenses or the model of common use) involves the patent owner granting permission to another enterprise to use the ownership rights of this object of intellectual property with certain restrictions determined by the form and content of the license agreement. Licensing provides the company-patent owner with the use of the object of intellectual property in its production and additional profit from the sale of the license (Figure 4).

Granting a license by a patent owner to another user allows him to solve existing problems when the demand for products exceeds the volume of his production, when additional means are needed for the development of production, or in case of a sudden deterioration of the market situation.

Special attention should be paid to the market model of intellectual property's life cycle (the process of successive changes). The process involves forming and using a long-term market strategy of an industrial enterprise in the field of intellectual property. This comprehensive model is based on a consistent (according to the life cycle stages of an intellectual property object) determination of the possibilities and effectiveness of using partial market processes, which ensures the rationality of relations on the intellectual property market for an enterprise in the long term.





**Figure 5.** Market model of the life cycle of intellectual property (the market process of successive changes)

The scheme of the life cycle of an object of intellectual property in comparison with a classic product has significant features. The proposed scheme of the market model of the life cycle (the process of successive changes) of intellectual property is presented in Figure 5.

Figure 5 states that an industrial enterprise that conducts active intellectual and innovative activities, depending on the stage of its scientific developments, uses various market processes of commercializing intellectual property objects. These processes are a horizontal market process, i.e.,

the simple sale of a patent (at the same time, the life cycle of own intellectual and innovative development for a given enterprise ends at the stage of acquisition of rights to an intellectual property object). Moreover, they can implement a horizontal-vertical market process of intellectual property with extensive use of modern forms and methods of licensing trade (leasing, franchising, creation of a joint venture, strategic alliance, etc.) and own production of innovative products created using intellectual property objects.

### 3. DISCUSSION

Each of the considered processes for commercializing innovative activity clearly cannot be recommended for practical use. However, introducing intellectual property objects into the economic circulation of industrial enterprises shows that each commercialization process has certain advantages and disadvantages, which are pointed out by Cho and Lee (2013). Furthermore, Park (2015) defined and justified particular prerequisites that must take place in an industrial enterprise to ensure the effective commercialization of intellectual property objects.

Investigating the practice of only own use of intellectual assets, Volpatti and Yetisen (2014) indicate that the maximum result can be achieved only if an enterprise has powerful material and financial capabilities. Without this prerequisite, an enterprise risks losing time for successful market use of its intellectual development. This the-

sis is strengthened by Chukhray and Mrykhina (2018), who recommended determining the time segments of the market efficiency of an innovative product.

Indeed, despite its most widespread practical use, the vertical commercialization of intellectual property objects ("own use") is not ideal. Along with the apparent advantages, there are also certain disadvantages (Table 1).

When using the vertical commercialization of intellectual property objects, an industrial enterprise with sufficient experience in this field can, with a high probability, obtain a more significant profit compared to other intellectual property commercialization processes. At the same time, this approach is associated with high commercial risks. They are caused by possible difficulties of financing the enterprise development, preservation of employees-carriers of the key competencies, the natural life cycle (after a certain success, there may be decline or stagnation), and changes in the goals and plans of the main investors, and methods of promoting products to the market. At the same time, it should be understood that the developers of intellectual property objects cannot always achieve commercial success from the point of view of entrepreneurship theories and models of further development.

Horizontal transfer, to a certain extent, contributes to the acceleration of scientific progress (Volpatti & Yetisen, 2014), as it provides the fastest option for the practical use of intellectual devel-

**Table 1.** Economic prerequisites for using vertical commercialization of intellectual property objects

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• no need to spend time and money on searching for a consumer of an intellectual property object;</li> </ul>	<ul style="list-style-type: none"> <li>• a long payback period of investments in own production;</li> </ul>
<ul style="list-style-type: none"> <li>• a monopoly status of an enterprise in its target market;</li> </ul>	<ul style="list-style-type: none"> <li>• a large number of undivided lines of responsibility for commercial success;</li> </ul>
<ul style="list-style-type: none"> <li>• individual control of all stages of market commercialization of the object of intellectual property;</li> </ul>	<ul style="list-style-type: none"> <li>• a high probability of inefficient use of available resources;</li> </ul>
<ul style="list-style-type: none"> <li>• an absence of risk of illegal use of the object of intellectual property;</li> </ul>	<ul style="list-style-type: none"> <li>• significant commercial, financial, and market risks;</li> </ul>
<ul style="list-style-type: none"> <li>• opportunities to obtain additional income through leasing or engineering;</li> </ul>	<ul style="list-style-type: none"> <li>• a significant increase in the need for various types of material resources;</li> </ul>
<ul style="list-style-type: none"> <li>• complete control of intellectual property rights.</li> </ul>	<ul style="list-style-type: none"> <li>• market success and payback are possible in the medium or long term.</li> </ul>
Prerequisites for effective use	
<ul style="list-style-type: none"> <li>• a company has powerful material and financial capabilities;</li> </ul>	
<ul style="list-style-type: none"> <li>• the popularity of the company's products on the market and the availability of prospects for its development;</li> </ul>	
<ul style="list-style-type: none"> <li>• compliance of intellectual technology with the main business of the enterprise.</li> </ul>	

**Table 2.** Economic prerequisites of horizontal commercialization of intellectual property objects

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• a consumer has all rights to patent holding, including commercial purposes;</li> </ul>	<ul style="list-style-type: none"> <li>• a seller is deprived of any form of ownership of the patent after its sale;</li> </ul>
<ul style="list-style-type: none"> <li>• a seller does not bear any additional costs when transferring all exclusive rights, as all exclusive rights are transferred to the buyer;</li> </ul>	<ul style="list-style-type: none"> <li>• significant difficulties with finding a consumer due to a significant increase in the amount of the sale compared to the license agreement;</li> </ul>
<ul style="list-style-type: none"> <li>• the payment of the agreement is made once without installments, which reduces financial risk and is convenient for both the buyer and the seller;</li> </ul>	<ul style="list-style-type: none"> <li>• the seller does not have a share in the subsequent revenues from the patent - this is the least profitable form of commercialization of the intellectual property object for a developer;</li> </ul>
<ul style="list-style-type: none"> <li>• the easiness of entering into agreements with a low level of commercial risk, as it is a normal purchase and sale agreement.</li> </ul>	<ul style="list-style-type: none"> <li>• the possibility of not using the object of intellectual property: the buyer can ignore the technology (purchase to block competition).</li> </ul>
Prerequisites for effective use	
<ul style="list-style-type: none"> <li>• for an enterprise, science is one of the independent directions of production activity;</li> </ul>	
<ul style="list-style-type: none"> <li>• an enterprise does not have the need and resources for independent use of its scientific developments in the field of intellectual property;</li> </ul>	
<ul style="list-style-type: none"> <li>• a need for prompt improvement of the company's material and financial condition;</li> </ul>	
<ul style="list-style-type: none"> <li>• intellectual outsourcing provides an enterprise with satisfactory incomes;</li> </ul>	
<ul style="list-style-type: none"> <li>• powerful scientific and technological divisions created at an enterprise need constant financial support, which the enterprise cannot provide from its income.</li> </ul>	

opment. However, this commercialization process has quite significant restrictions, which is emphasized by Pankevych et al. (2019). First, this is the least profitable form of commercialization for the developer, as he completely loses the opportunity to receive certain dividends in subsequent revenues from the patent of his invention. Second, competitors may have a real opportunity to block the distribution and use of this invention by purchasing but not using invention patents that could harm their business.

Table 2 shows the advantages and disadvantages of the horizontal market process of commercializing intellectual property objects, as well as certain prerequisites for its effective use in industrial enterprises.

It is necessary to pay attention to some features of the practical use of the horizontal market process of commercializing intellectual property objects. One cannot simply take and sell a patent for an invention or some other object of intellectual property. It is necessary to clearly explain to a potential consumer (a buyer) what the patent is about and how it will work under its conditions. Particular attention should be paid to the possible benefits of owning this patent, and possible additional profits for a consumer's enterprise.

Vertical-horizontal transfer can be very promising in some cases (Morrison, 2021; Smirnova, 2015).

When using it, the concrete result of the enterprise's intellectual activity (intellectual property object), having fallen into the practice of using several individual entrepreneurs, commercially unrelated to each other, can provide a sufficiently powerful impulse to the intellectual development of a specific innovative idea and provide the patent-holding company with a multiplier effect.

However, Pererva et al. (2012) indicated that the joint use of intellectual assets could often lead to commercial conflicts, as well as to significant difficulties in the distribution and determination of validity periods of exclusive rights. Lyalyuk (2017) emphasizes the possibility of abuses in the licensing sphere by the partners of an enterprise for using the market advantages of the intellectual product, which negatively affects the developer. Bozeman (2020) also warns that the licensee has many opportunities to significantly reduce the amount of revenue under the license, which affects the desire of the developer to use the vertical-horizontal commercialization.

Table 3 shows the advantages and disadvantages of the vertical-horizontal process of commercializing intellectual property objects, as well as the essential prerequisites for its effective use in industrial enterprises.

With the practical use of the vertical-horizontal market process of commercializing intellectual

**Table 3.** Economic characteristics of vertical-horizontal commercialization of intellectual property objects

<b>Advantages</b>	<b>Disadvantages</b>
<ul style="list-style-type: none"> <li>• real possibilities of the licensor to participate in the future income of the licensee;</li> </ul>	<ul style="list-style-type: none"> <li>• a risk of falsification by the licensee of the volume of income under the license;</li> </ul>
<ul style="list-style-type: none"> <li>• the possibility of further development and development of the object of intellectual property is not excluded;</li> </ul>	<ul style="list-style-type: none"> <li>• revenues from licensing are relatively lower than with other market processes;</li> </ul>
<ul style="list-style-type: none"> <li>• availability of demand, as royalties are significantly less than the amount of the total sale of the intellectual property object;</li> </ul>	<ul style="list-style-type: none"> <li>• significant expenses of the licensor for legal support of the license;</li> </ul>
<ul style="list-style-type: none"> <li>• long-term partnerships are formed in the field of the licensor's business;</li> </ul>	<ul style="list-style-type: none"> <li>• possible difficulties in relations with competitors (denial of license);</li> </ul>
<ul style="list-style-type: none"> <li>• a low level of commercial and financial risks;</li> </ul>	<ul style="list-style-type: none"> <li>• a licensee may not use the subject of the license for specific reasons;</li> </ul>
<ul style="list-style-type: none"> <li>• regularity of additional income (royalties);</li> </ul>	<ul style="list-style-type: none"> <li>• much more challenging to detect fakes of the subject of the license in this market;</li> </ul>
<ul style="list-style-type: none"> <li>• no need to interrupt scientific activity in this field;</li> </ul>	<ul style="list-style-type: none"> <li>• a licensee may understate the amount of his income on the subject of the license;</li> </ul>
<ul style="list-style-type: none"> <li>• a flexible system of financial relations with the licensee.</li> </ul>	<ul style="list-style-type: none"> <li>• a need to check the licensee's compliance with the terms of the license agreement.</li> </ul>
<b>Prerequisites for effective use</b>	
<ul style="list-style-type: none"> <li>• an enterprise is unable to satisfy all potential demands on its own;</li> </ul>	
<ul style="list-style-type: none"> <li>• a company is unable to enter some potentially important market segments;</li> </ul>	
<ul style="list-style-type: none"> <li>• a patent owner feels an urgent need for additional funds for the development and successful commercialization of this intellectual technology;</li> </ul>	
<ul style="list-style-type: none"> <li>• the deterioration of the market conditions in the field of use of the company's products, which are manufactured using this object of intellectual property, is predicted;</li> </ul>	
<ul style="list-style-type: none"> <li>• a stage of the life cycle of this intellectual property object no longer fully corresponds to the commercial preferences of the patent owner;</li> </ul>	
<ul style="list-style-type: none"> <li>• an enterprise has scientific developments regarding the complete refusal to use this intellectual product in the future.</li> </ul>	

property objects, the patent owner agrees that the assignment of part of the rights to use intellectual technology will allow an enterprise to return the funds spent on its development and legal protection in the short term. At the same time, part of the enterprise's target market-patent owner will be lost. However, in many cases, industrial enterprises agree to such a situation. When using hori-

zontal commercialization of intellectual property objects, they bear minimal commercial risks and insignificant costs, receive a return of funds invested in intellectual development quite quickly, enter the market at the expense of other intellectual property developments, and in a certain way compensate for the partial market losses associated with this intellectual development.

## CONCLUSION

The purpose of this study is the formation of market processes for commercializing intellectual property objects in industrial enterprises, finding the most effective option for their introduction into economic circulation. The obtained results indicate that, depending on the primary prerequisites of an organizational, material, technical, and market nature, an enterprise can preferably use one of the possible commercialization processes, which corresponds to the greatest extent to the current state of its production and commercial activity.

Several possible market processes for introducing innovative activity results into economic circulation are proposed for practical use and theoretically substantiated. They are independent use of intellectual assets (vertical transfer of technologies), complete alienation of an intellectual asset in favor of other potential consumers (horizontal transfer of technologies), and vertical-horizontal market process of distribution of the results of innovative activity, which forms the methodological basis for the common use of objects of intellectual property. Methodical recommendations for the commercial use of the enterprise's

intellectual assets by stages of their life cycle have been formed. They are transformed into a market process of successive changes in the methodical and practical approaches of an industrial enterprise to the use of one or another commercialization process.

The proposed market processes of introducing the results of innovative activity of industrial enterprises into the economic circulation make it possible to use the achievements of innovative units more reasonably and with greater efficiency. The implementation of these proposals helps to increase the efficiency of industrial enterprises and stimulates them to expand the scope of innovative searches both to improve the quality characteristics of their products and to improve the material and technical support of the production and commercial process.

## AUTHOR CONTRIBUTIONS

Conceptualization: Mariya Maslak.

Data curation: Mariya Maslak.

Formal analysis: Petro Pererva.

Funding acquisition: Petro Pererva.

Investigation: Mariya Maslak.

Methodology: Mariya Maslak.

Project administration: Petro Pererva.

Resources: Petro Pererva.

Software: Mariya Maslak.

Supervision: Petro Pererva.

Validation: Petro Pererva.

Visualization: Petro Pererva.

Writing – original draft: Mariya Maslak.

Writing – review & editing: Petro Pererva.

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