The monitoring mechanism of the intellectual technologies commercial potential

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Abstract. The theoretical and methodological foundations of intellectual technologies monitoring that are based on intellectual property are considered in the article. We prove that the evaluation of intellectual technologies market opportunities by the enterprise, the state of their target market, market changes on it to determine the position of the enterprise relatively goods analogs and substitute goods and identification of possible prospects and areas of intellectual development can be done very effectively using the principles and methods of economic monitoring. Methodical provision of monitoring commercial potential of intellectual property using the function of tangential economic effect is elaborated.

Key words: monitoring, commercial potential, smart technology, economic impact, transfer, commercialization.

INTRODUCTION

The monitoring system of production and business activities of industrial enterprises is an effective means to monitor and ensure the proper functioning of various economic objects and processes. This economic category is long enough and widely used in the field of production and business activities of industrial enterprises. Our studies show that the most frequent monitoring concept finds its use in environmental economics [1], in crisis management [2, 3], financial [4] and innovation activities [5, 6], monitoring market conditions [7,8].

Various aspects of research issues are presented in the works of local and foreign scientists: Pererva P.G. [2, 3, 11], Antonyk L. [9], Pervushyn V. [10], Shpak N. and Knyaz S. [12], Chernobay L. [13], Bazylevych V.D. [14], Kendyukhov O. [15], Glukhiv L.J. [16], Andro-sova O. and Cherep A. [17], Kletkina Y.A. [18], Tiho-nov N. [19], Kozyrev A.N. [20] and other. However, in our view, the theory and practice of monitoring can be very effectively implemented in other areas of the market of industrial activities, particularly to monitor processes of creation, economic evaluation, modification and management of intellectual activity (intellectual property) of innovation oriented industrial enterprises [8-11]. It should also be noted that the set of tasks related to the monitoring inspection scope of industrial market is not fully developed, methodological basis for monitoring the situation of the commodity market is not enough explored, its place and role in the management of market processes is not determined, there is virtually no organizational and methodological support for monitoring conditions, information links with the external environment are not optimized. The theoretical importance of these problems and their practical importance for the efficient operation of businesses, organizations has led to the choice of the article theme and determining range of issues that it investigates.

MATERIALS AND METHODS

The aim of the paper is to study guidelines for formation and implementation of monitoring of the intellectual property commercial potential in industrial enterprises and development of recommendations for its effective use. Theoretical and methodological basis of research are fundamental tenets of modern economic theory, scientific work and teaching of leading scientists in the field of intellectual property. To solve this

problem by forming a mathematical model for monitoring market appeal intelligent technologies used methods of correlation and regression analysis and methods of economic-mathematical modeling.

RESULTS

The process of economic monitoring market opportunities of intellectual technologies (intellectual property) in order to improve the efficiency of its implementation is presented as a series of interrelated stages (*Fig. 1*).

Each of the present process stages (stages) is to some extent independent, but the systematic consideration of other stages (phases) of the monitoring process takes on a very different meaning, which, as it seems, can be called teamwork. This situation, in our opinion, can be explained by presence of the above principles of economic monitoring market prospects of intellectual technologies, in particular, the principles of integration, consistency and efficiency.

Our studies indicate that the accuracy and objectivity of the current state of the intellectual technology commercial potential is largely dependent on the potential economic impact E_{dev} which the technology developer can get at its commercialization and consumer of this technology – when using E_{cons}. Determining values of these effects, in our view, is appropriate during the entire lifecycle of intellectual technology. If there is a need to assess the effect of the annual user and developer, then its value can be calculated taking into account potentially effective lifetime of intellectual technology. It should be noted that these values E_{dev} and E_{cons} and over time change their values since, first, conditions and factors that characterize the developer environment and consumer technology change and, second, the conjunctural characteristics of technological market also change , thirdly, the qualitative

characteristics of the technology and its potential opportunities can greatly vary.

Values E_{dev} and E_{cons}, or rather their ratio used are suggested to assess changes in the current market appeal (commercial building). To do this, in our opinion, tangential function F_1 should be used . Formation of this function, as evidenced by the experience of its use in crisis management [3,8,11] and market conditions management [7] should be used in two varieties:

Option "A": $F_1 = tg \, [\pi \, (E_{dev} - E_{cons}) \, / \, 4 \, E_{dev}]$
         if $E_{dev} > E_{cons}$.   (1)
Option "B": $F_1 = tg \, [\pi \, (E_{dev} - E_{cons}) \, / \, 4 \, E_{cons}]$
         if $E_{cons} > E_{dev}$.   (2)

Functions (1) and (2) can be considered both for the technological market of a particular company – in this case the overall effectiveness of the developer (firm, company) and the overall efficiency of potential users of the developer intellectual work results and for the company-developer specific intellectual products (technologies) – in this case the level of the market attractiveness of a particular technology is considered .

Certain restrictions for functions (1) and (2) is the fact that their use should be the condition:

$$(E_{dev} + E_{cons}) > 0. \qquad (3)$$

The presence of such restriction (3) is explained by the fact that function F_1, which is offered for use both for the option "A" and option "B" provides analysis only of intellectual technologies which would be attractive for the whole business technology market (the developer and the consumer), or at least for one of them: either the developer (in this case, the technology envisages only its own consumption) or the consumer (in this case the technology provides only licensed version of commercialization, as their own consumption is inefficient). If the technology under study is not effective for either the developer or a potential customer, in this case there is no point for consideration and analysis.
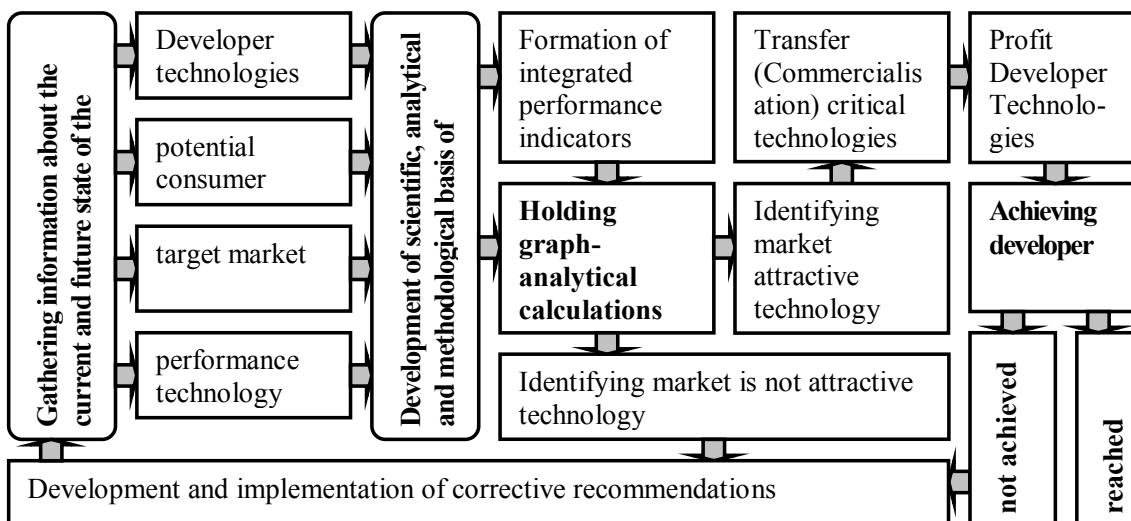

Fig. 1. The sequence of steps of intellectual technologies market appeal (commercial potential) monitoring
Note: developed by the author

Relations (1) and (2) can be presented more clearly using some transformations, then these features become easier for economic interpretation and further use of the form:

Option "A":

$$F_1 = tg\, \frac{\pi}{4}\left(\frac{E_{dev} - E_{cons}}{E_{dev}} \right) \to E_{dev} > E_{cons}, \qquad (4)$$

Function F1 "A" is defined in the interval [0, 1].

Option "B":

$$F_1 = tg\, \frac{\pi}{4}\left(\frac{E_{dev} - E_{cons}}{E_{cons}} \right) \to E_{dev} < E_{cons}. \qquad (5)$$

Function F1 option "B" is defined in the interval [-1 , 0].

The choice of the functional form of the present model F_1 based on trigonometric tangent function requires some explanation and justification. Mathematical theory suggests that the tangential function, which is represented by functions (1) and (2) is defined in the interval [-1, +1]. In our view, the tangential nature of the function F_1 provides the greatest extent possible to restrict (normalize) the field of values in the range [-1, +1] and by the nonlinearity function F_1 it is made possible to track changes in the gradient of economic benefit from the development and use of intellectual technology in general and in the market of the technologies enterprise-developer, in particular.

Determining the economic substance of the tangential function F_1, which characterizes the ratio of economic benefit to the consumer and developer of intellectual technology, and economic characteristics of its most important values of reference points allows the researcher to obtain economically important characteristics for the monitoring performance purposes.

When choosing a functional form of model F_1, we proceeded from the premise that the function F_1 should simulate priority use of intellectual technology that reproduces, first, major environmental changes in the technology market, i.e. an increase in demand for technological product (reduced supply) the developer effect increases and vice versa, and second, the technologies developer and consumer effect largely reflects timeliness of sale or consumption of technological products. In the present form (models 1 and 2, 4 and 5) the function F_1 simulates (characterizes) as a positive trend from the developer ($E_{dev} > E_{cons}$) and consumer ($E_{cons} > E_{dev}$) of intellectual technology and possible difficulties both in the economic environment of the technology developer (decrease of E_{dev}) and in the environment of potential technology consumer (decrease of E_{cons}). Although equality between the effects of the developer and the consumer ($E_{dev} = E_{cons}$) is most desirable for any commodity market usually it is not the case and in the technology market we often see permanent tactical variations in one or another way.

Taking into account the abovementioned, we can draw the following conclusion: some differences between the economic effects that the technologies developer gets at its commercialization and the technology consumer while using it, can be used for rationing characteristic trends and marketing strategies of the company-developer and the consumer company in determining market appeal of intellectual technology and determining its commercial potential.

The analysis suggests that the range of monitoring function values F_1 includes a number of very interesting reference values, each of them having its own economic foundations and describing certain economic conditions both as technology developer and its consumer environment. Our proposals on this matter can be combined in the following terms and generalizations.

1. State of market appeal and commercial potential of intellectual technology in which the monitoring function F_1 = (-1). Monitoring function F_1 may have this value in an economic situation where there is no effect of the technology developer E_{dev}, but there is the economic effect of a potential consumer E_{cons}. A similar situation arises when F_1 function arguments have the following values: [E_{dev} = 0; E_{cons} > 0]. Under the analyzed function F_1 argument values the economic situation in intellectual technology developing enterprises environment reflect the situation when the in-house usage is either impossible or doesn't have appropriate areas of consumption, on the contrary, a potential consumer can use it efficiently. Although market prospects of technology in this situation are not satisfactory, because potential consumers are not commercially attractive for the technology developer (owner), and their price offers do not provide the technology developer (owner) a positive economic impact. The economic situation, which corresponds to the monitoring function F_1 = (-1) can be called the "crisis of usage" In general, we can not determine such a monitoring function condition as positive. It appears that this condition reflects to some extent the negative trends in both the developer and the consumer of the intellectual technology, because it does not contain positive aspects of the current state of commercialization.

According to the results of our study, such a monitoring function condition with respect to the current state of the intellectual technology commercial prospects can be explained by the following reasons:

- a principally new technology that has not had broad areas of its practical use yet. This fact affects the current inability to consume the technology directly by the developer (there are neither processes nor installations, where the technology can be used), and potential existing customers (albeit in a small number), are unable to widely use this technology yet, thus

offering a low price for it, that does not provide economic benefits to the technology developer. Such a technology commercial future seems to be very promising, but in many cases its arrival may have an extremely distant outlook,

– an obsolete technology that has already lost most of its areas of use. In this case, the technology developer (owner) has no way to effectively use it himself/herself (loss-making use), and some potential users still agree to purchase the technology from the developer (owner), but can not offer the developer (owner) a commercially attractive price. The technology is in the final stages of its life cycle and it may have prospects only in case of substituting a technologically advanced segment for a technologically outdated one, where outdated technologies may have commercial prospects,

– the developer (owner) and the potential consumer of intellectual technologies are in technologically opposite segments of the technology market. The developer's high commercial requests are inconsistent with modest financial capabilities of potential consumers. The technology commercial prospects can be increased by enhanced marketing development of more technologically significant technology market segments, consumer search, firstly, with larger financial resources and, secondly, with the possibility of the analyzed intellectual technology more widespread use.

Marketability (commercial potential) of the technology with the monitoring function , which corresponds to the monitoring function value $F_1 = (-1)$ – "Crisis of usage", is characterized by high ambiguity. Its current status is low, the prospects of changing it are highly dependent on the reasons that lead to the presence of such a condition. Promising commercial potential may have either a significant value (in case if this technology is principally new) or extremely low (an obsolete technology). It is possible also to change the attractiveness of the market in the nearest future if the technology developer (owner) can find potential customers in less technologically significant segments of the technology market. The transfer prospects of the technology at this stage of monitoring function are low and urgently need to be strengthened and developed, but the options available for this are usually quite small.

2. State of market appeal and commercial potential of intellectual technology in which the monitoring function F1 is in the range [-1 < F_1 < 0]. It is more favorable for the company – the developer (owner) Technology Transfer situation in which both the developer and the consumer process of commercializing technology brings economic benefits. However, the redistribution of this effect is made in favor of the consumer ($E_{cons} > E_{dev}$), due to a number of economic, social, political or environmental circumstances.

The economic situation, which corresponds to the function F_1 in the range from "-1" to "0" we call

"dictatorship of the consumer" (options "passive consumer", "passive transfer"). This situation is generally consistent with the laws of development and function of the traditional market situation that economic theory is called "buyer's market" and is made at a time when the supply of certain goods exceeds demand. For technological product such a situation do not occur very often, because of the technological features of commodity market in most cases do not involve mass supply of goods due to its individuality and exclusive offers. To a certain extent we do not exclude the presence of the technology market two or more offers almost similar technology products developed by different teams (firms). Often there are technology – substitutes, which can also affect the tactical value to the technology market.

The situation in the transfer market , which corresponds to the function F_1 in the range from "-1" to "0", requires special attention top management of enterprise engineering and operational response to the changes that take place here. The fact that the company that sells technology there is no strong motivation to sell the technology as a deterrent acts in some way "unfair" redistribution of the commercial potential of the object transfer in favor of the consumer. Having this condition may be due to the following conditions of production and business activities in enterprises producer and consumer:

- main activity of the company is a venture-seller activity is the development and sale of intellectual products. Own use of results of intellectual labor firm has no plans, as wide production of high-tech products is not carried out , except for pilot production. In this case, the proportion in the division of economic benefit for the developer are not critical, more important is simply the sale of technology and provide the necessary scientific return on the size of the company, as some economic benefit the company still receives,

- financial and economic condition of the company, the seller is unstable and requires constant support. The company reserves no time to search for more commercially attractive customers for their technology and agree to deals with the distribution of existing economic effect that plays at this stage monitoring function F_1,

- consumer technology analyzed, with a sufficient number of alternative proposals (technology-analogues or substitutes) that can basically decide their industrial and entrepreneurial issues. Based on the standard laws of the market (supply exceeds demand), retailer of technology (software development firm or company owner) agrees with the distribution of the proportion effect technology for the consumer (buyer's technology).

The marketing activities of the company that owns the technology in the range of values monitoring

function F_1, which is analyzed, primarily related to the implementation of the practical ability to find its technology consumer. Technology is a specific product that does not have physical deterioration, obsolescence but can occur very quickly . If in a given period of time technology market has been active from the developer of technology products and certain passivity on the part of consumers, retailers are left with no choice but to agree to the distribution of commercial effect of technology in favor of the consumer, which is the standard for the functioning of the traditional (non-technological) product. Moreover, in our opinion, in favor of the consumer is the conclusion of transfer agreements. If the user can over a period of time to get a better technology, losing some income from non During this period of time the technology, the developer can lose almost everything, because after a certain period of time technology can go a full line of obsolescence and converted into a scientific theory methodological development, practical value and commercial potential which will be close to zero.

3. State of market appeal and commercial potential of intellectual technology in which the monitoring function $F_1 = 0$.

The situation, in which the developer and potential customers are with this value of monitoring function, in our opinion, is rather attractive, as in this case there are no trends toward changing. The practice of technology transfer points that this situation although being favorable (like market equilibrium in the market of traditional products), as a rule, is short-termed.

It reflects the situation when the economic benefits of the developer and consumer technology intellectual match ($E_{dev} = E_{cons}$), i.e. the market situation of this technology is in state of *fair transfer*. Such a condition is usually aspired by all actors (developers and consumers) of technology market, because in this situation the developer of technology of products has no obvious short-term problems and consumer of technology is definitely satisfied with fair distribution of commercial potential. However, a detailed analysis of this situation in the transfer market of certain technology points that in some cases this tranquility there may hide some negative trends. We are going to consider some of them that are, in our view, the most appropriate to of modern technological market.

Firstly, the situation of market equilibrium in the distribution of economic impact of technological development and consumer product ($E_{dev} = E_{cons}$) often corresponds to the central stages of the life cycle of intellectual technology (the period of commercial success of technology in the transfer market when the product technology is in the zenith of its fame) which will inevitably be followed by the declining interest among potential customers to this technology. It is

extremely important for the developer (owner, seller) of technology not to miss the moment of transfer and be ready for it. If the transfer agreement isn't signed at that moment, the following situations can lead to a redistribution of economic benefits in favor of the consumer of technology (a situation in which the monitoring function F_1 is within the limits of [$-1 < F_1 < 0$]), or the developer would get no profit from this technology (a situation in which the monitoring function $F_1 = 0$) or even lead to financial losses (the cost of financing the development of intellectual technology will not be reimbursed).

Secondly, in case of transfer failure, the developer is recommended to prepare an updated version of the technology that would be more responsive to the demands and needs of potential consumers whose attitude to the existing technology has definitely changed. Studies in this area show that it is quite difficult scientific, engineering, technological, production and market work and shortcomings in this area can significantly affect the future success of innovative companies.

Thirdly, we should clearly understand whether the present state of technological product matches the situation described by the monitoring function, whether unused marketing and unrealized market opportunities are not hidden behind this seemingly prosperous state ($E_{dev} = E_{cons}$). As matching of the state argument $E_{dev} = E_{cons}$ can occur, for example, because of bad-quality conducting of a marketing campaign, the results of which do not completely reflect the real situation, i.e. ratios of trends in the economic conditions of the company-developer and company-user that have developed lately are not clearly reflected.

Depending on the type of the actual situation (options which we have considered above), the developer (owner, seller) of technological product can make appropriate decisions. If the current state of the economic environment of developer and potential customers is valued correctly, marketing program is developed and conducted at an acceptable level, without errors and ungrounded decisions, the transfer situation could be considered as quite acceptable and can be completely implemented.

4. State of market appeal and commercial potential of intellectual technology in which the monitoring function F1 is within the limits of [1 < F_1 < 0].

This value of monitoring function F_1 concerning technological product, the analysis of which is held, can take reallocate total economic impact of the development and use of technology for the benefit of its developer ($E_{dev} > E_{cons}$). This transfer situation in the technology market can occur quite frequently under different (not necessarily economic) conditions. The considered transfer situation with intellectual technology

we propose to call "*active transfer*" and it can include both positive and negative in some way points which are worth analyzing in detail and considering when transfer operations take place.

The transfer situation, considering a particular technology product, inherently meets the laws of development and functioning of traditional market conditions that are called "seller's market" in economic theory when the supply of certain goods exceeds demand. As we have noted above, situations for this type of technology product do not appear very often, because market features of technology goods in most cases do not involve mass demand for technology goods in connection with its individuality and exclusive offers. If the availability in the technology market of two or more offers of almost similar technology products developed by different teams (firms) is quite rare, the presence of two or more firms wishing to acquire the same technology is a phenomenon quite common even on a specific technology market.

Therefore, in our opinion, the monitoring function F_1, which is within the limits of $[1 < F_1 < 0]$, reflects one or more of the following conditions of the economic environment of developer and potential consumer of technology products:

- situation that takes place in the distribution of economic benefit in favor of the developer of technological product ($E_{dev} > E_{cons}$), often corresponding to the initial stages of the life cycle of intellectual technology, the risk of successful completion is quite high. About considerable commercial advantages of using this technology potential consumers know not enough yet, and marketing service of the developer can, to some extent, overrate certain production effects related to practical use of intellectual technology;

- potential consumers are sufficiently aware of the potentially important advantages of this production technology, recognize and accept them, and expressed willingness to transfer transaction on terms attractive enough for the developer of technological product. This situation, in our opinion, is the most attractive to the developer and it is recommended immediately to use fully, i.e. to complete the transfer operation;

- dynamics of short-term relationships in the technology market is in enhancing stage (demand for technology exceeds the relevant proposals raised by the market equilibrium, some technological demand remains unsatisfied by developers), unsatisfactory for consumers technology product price situation is formed in the market, which market has been investigated, manufacturers (distributors, resellers) sell their products at higher prices, i.e. the situation is in favor of the developer (owner, seller) of technology products.

Along with above-mentioned positive trends that characterize the transfer situation in the technology market, which we propose to call "active transfer", there may take place a situation when this technology is at the final stages of its life cycle, the majority of potential users of this technology product (especially with large volumes of production using intellectual technologies) have left this market and switched to more advanced and more modern technology in terms of science and technology. However, the consumer needs to have this technology, and the proposals for the implementation of transfer transactions are taking place. The volume of these requests currently has significant value which exceeds the capabilities of developers. On these assumptions, even at the final stages of the product lifecycle process we could have up-conjuncture situation that is in favor of the seller (developer, owner, licensor) of Intellectual technology.

The value of the commercial potential of Intellectual technology in the analyzed condition of monitoring function F_1 allows the company-developer to pursue active transfer policy, to achieve pre-set business objectives of the activities associated with this technology product. In this limit of values of monitoring function the developer is recommended to perform the following marketing activities:

– conduct an active market search of potential users of the technology product,

– assess the maximum possible values of economic effect E_{dev} for each possible consumer, while the consumer would agree to transfer Intellectual technology,

– perform a transfer operation that will ensure that criteria conditions of technology transfer for the developer (owner , seller, licensor) of technology:

$$(E_{dev} - E_{cons}) \rightarrow max$$
or
$$E_{dev} \rightarrow max.$$

In our opinion, criteria condition $E_{dev} \rightarrow max$ is more acceptable in comparison with the condition $(E_{dev} - E_{cons}) \rightarrow max$. We have come to this conclusion because the two criteria conditions are equival if the overall effect E_{com} (commercial technological potential) is constant, i.e. $E_{com} (E_{dev} + E_{cons})$ = const. But there may also be other conditions:

a) the value of the commercial technological potential E_{com} tends to increase. In this case market situation may change in favor of the developer, if a potential customer will be satisfied with the absolute value of its economic effect E_{cons}, and in favour of consumers – if the developer agrees to continue to implement technology transfer on terms of the initial value E_{dev}. This market situation in general is positive and the implementation of transfer operations is quite probable,

b) the value of the commercial technological potential E_{com} tends to decrease. This is a less favorable situation, as in this case the developer or potential

consumer (or both of them at the same time) for the transfer operation must agree with some decrease in the value of economic effect, which was planned before. This is not a straightforward market situation, which carries a significant market and economic risks and requires further detailed analysis and studies, the probability of realization of transfer transactions of this technological product under these conditions tends to downsize and the developer should become more active to achieve the desired result.

It is also very important that with this approach, commercial interests of the developer are on the first place in the transfer process and the commercial interests of the consumer are on the last place. Therefore, developers should take into account the fragility of the state of the consumer, when it is possible to make transfer in favorable for developer way, and make this technology transfer operation as soon as possible. This conclusion is proved by the fact that the conjunctural situation of the technological market, which corresponds to the limit of value of monitoring function F_1 [$1 < F_1 < 0$], can change dramatically, because there are a lot of reasons that are market attractive for developers of new technology products, increased competition, changes in short-term expectations and, consequently, the changing relationship between economic effects of developer E_{dev} and consumer E_{cons} of this technological product in favor of potential customers.

5. State of market appeal and commercial potential of intellectual technology in which the monitoring function $F_1 = (+1)$. To achieve this state of monitoring field the arguments of tangential monitoring function F_1 should be in the following states: economic benefit which the potential consumer of the intellectual technology has E_{cons} is almost entirely absent, but for the developer (selelr, owner) the value of this indicator (economic benefit of the developer) is positive, i.e. [$E_{cons} = 0, E_{dev} > 0$].

The current transfer situation in the technological market, rather frequently occurs in the practice of not only research-oriented enterprises, but also in the practice of industrial and business activities of most industrial firms. In this case, we mean scientific researches and developments of scientific, engineering and technological organisation units for their own use or for internal transfer (if it is a production firm of several relatively independent companies). Accordingly, the monitoring situation in the transfer market, which is analyzed, is proposed to be called "internal transfer". This state of a technological product can be in these market-production situations.

1. To some extent a company holds a monopoly of intended end-use products production, with no competitors or explicit substitutes. In this case,

intellectual technologies related to improving the quality of the product or its production process, generate no interest for external users because of the lack of technological interest for them. The company uses scientific researches only to meet its own needs, as an attempt to conduct a technological transfer (if a company has such a desire) is almost impossible because of the complete lack of demand for scientific development. The only way to conduct an effective transfer to the consumer in this case is possible only when the company sells its business with its scientific and technological support.

2. The company does not hold a monopoly of production, in the market there are competitors that produce similar goods as well as goods-substitutes. The level of competition is significant and the company has to make considerable efforts to maintain its market position (market share) under such conditions. In this case, the company considers a new technological development as a competitive advantage that enables it to strengthen its competitive position. External transfer of the technology is not considered by the management, as in this case, positions of competitors can be enhanced, and the market position of the company can deteriorate. The real demand for this technological product is missing (although the potential demand and the potential consumer effect in case of its satisfaction can take place) because of the lack of real demand.

3. For the practical use of this technological product it is necessary to have a unique equipment, certain economic output, special knowledge and specially trained personnel and basic maintenance staff, etc. All these additional conditions make transfer offers of an enterprise-developer unattractive to a potential consumer, who has no indicated conditions of efficient Intellectual technology use or has them in part. In this case, all current transfer prospects of intellectual technology today is almost impossible, their appeal may arise only in a long-term prospect.

4. The company produces an outdated products that are in the final stages of their life cycle and are already taken out of the production by the main producers. However, in the market there is still a demand of retrograde people (conservatives), who provide the company with effective production of obsolete products. According to these theses, scientific researches of companies that directly relate to improving the quality of old products or their production process, are not of a lively interest any more for those producers who are still in this goods market, and especially for those producers who have already taken these products out of production.

5. The company production is currently the world's scientific and technological leader. Its production currently is hardly accessible for other competing

producers, strong enough though they may be in scientific and technological sense. Therefore, researches and developments concerned with the production and use of these products do not constitute an urgent need to obtain certain competitive advantages and effects of production or consumption in this stage of development of scientific and technological progress. For an effective use of these developments appropriate conditions and circumstances have not been created yet. However, it should be noted that this situation can be changed dramatically very soon, as the main competitors of the company (the technological leader of the leader) are actively working on technological improvement of both the products and processes of production .

As we have already stated, the transfer situation with a specific intellectual technology, which corresponds to the monitoring function $F_1 = (1)$ is rather common. Moreover, it can occur even in cases when the technology can be much in demand, when there are prerequisites for its effective use in other businesses (not necessarily competing), but the company-developer does not even consider the possibility of transfer, focusing all attention on its own (in terms of the most effective enterprise) consumption of this technological development.

According to the analysis of the set of possible monitoring function F_1 values final conclusions and generalizations should be made.

First, in the present state offered for the use a tangential function F_1 allows scientific and innovative enterprises to monitor permanently the current state of the market-transfer prospects of intellectual technologies (intellectual property, results of innovation).

Second, the results of this analysis form the science-based foundation for the development of transfer prospects of technological products, which is extremely important in the preparation of perspective plans of scientific and business activity of the intellectual products enterprise-developer.

Third, the set of monitoring function F_1 values allows to detect and identify many important intervals, each of which may find its interpretation from an economic point of view. Each of these intervals can be defined as a kind of a current and future plan of the intellectual technologies enterprise-developer in terms of their transfer prospects.

According to the conclusions and generalizations the following theses in the activity of the company-developer of intellectual products can be asserted. If the set of calculated monitoring function F_1 values is close to (-1), it can be concluded that the developer makes insufficient efforts to intensify transfer operations. Approximation of the function F_1 to zero reflects stability in the enterprise developer currently and its fairly stable market positions in future. Disturbing moments can take place in the enterprise-developer water when the value of the tangential monitoring function F_1 tends to (1).

The main values of the tangential monitoring function F_1 in terms of evaluation of the market prospects (commercial building) of intellectual technologies which in many aspects determine the transfer policy of the enterprise-developer of technologies and have been analyzed in detail above, are presented in Table 1.

Table 1. Economic characteristics of the set of tangential monitoring function F_1 values

Transfer technology trends Calculated	Calculated value of the function $F1$	Current status of the arguments of F_1		Expanded description of market attractiveness (commercial potential) of intellectual technology
		E_{dev}	E_{cons}	
Nonprofit transfer	$F_1 = 1$	$E_{dev} = 0$	$E_{cons} > 0$	Intelligent technology currently can perform social and ecological functions. The developer does not receive direct financial benefits staying satisfied with Promo achievements.
Passive transfer	$1 < F_1 < 0$	$E_{dev} < E_{cons}$	$E_{cons} > E_{dev}$	Transfer positions of the technology development are not active, the developer does not hurry to perform the transfer operation, trying to persuade consumers of more attractive prices for Developers
Just transfer	$F_1 = 0$	$E_{dev} = E_{cons}$	$E_{cons} = E_{dev}$	The equally advantageous transfer operation for the consumer and developer. Transfer realization promotes further commercial relationship between consumers and developers of technology.
Active transfer	$(-1) < F_1 < 0$	$E_{dev} > E_{cons}$	$E_{cons} < E_{dev}$	The situation is in favor of the developer of technological product that will make the maximum effort to use it as regards the implementation of transfer operations
Internal transfer	$F_1 = (-1)$	$E_{dev} > 0$	$E_{cons} = 0$	External customers are not interested in the technology. Effective use of technology product is possible only through internal transfer

CONCLUSIONS AND PROSPECTS OF FUTURE RESEARCH

1. Using tangential monitoring function F_I for the purposes of analysis and assessment of market attractiveness (commercial building) of intellectual technologies, we believe, can provide sufficiently objective data to form an idea about the market state of each process product developed in the company, which has the potential for the practical use to improve the products produced by this or other companies, or processes of production.

2. The results of the monitoring process of the product allow developers to create its transfer program, taking into account both current, and prospect transfer opportunities as well as possibilities for their further improvement.

3. The proposed concept of monitoring significantly expands the company on the effective use of existing intellectual potential.

4. Propositions were successfully introduced by the author in the practice of Ukrainian scientific and industrial enterprises.

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