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Fostering an Innovative Environment for Transitioning from Traditional to Digital Intellectual Property Economy

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Abstract:

Purpose: *The aim of this article was to develop a conceptual economic and legal approach for intensifying the functioning and development of the innovative and intellectual environment in Ukraine, taking into account the capitalization of intellectual property rights, methodical approach to management decisions and transformative changes, in the context of the transition from the traditional to the digital economy of intellectual property.*
Design/Methodology/Approach: *The logical model of the origin and circulation of intellectual capital, associated with the further transformation of innovative technology, as well as with active innovative management aimed at the production and sale of innovative products of appropriate quality in compliance with a set of standards, is considered. The originality includes the transformation of economic intellectual resources into intellectual assets and a methodological approach (formation model) of assessing patterns and making management*

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decisions regarding intellectual assets, which require an assessment of their effectiveness from the perspective of economic added value (EVA), achieved by choosing methods of capital investment, which includes intellectual capital, the profitability of which exceeds the value of the enterprise's (firm's, company's) capital.

Findings: *Enterprise asset (capital) management requires an assessment of their efficiency from the point of view of economic value added (EVA), which involves choosing ways to invest capital, including intellectual capital, the profitability of which will be higher than the cost of capital of the enterprise (firm, company). Such a methodological approach, supplemented in the model of intellectual capital, justifies managerial decisions regarding the transformation of intellectual resources into enterprise assets.*

Practical implications: *The subject of the research includes the problems of the formation of an innovative and active environment, which holds high practical significance in the perspective, since in domestic economic science there is a lack of both comprehensive theoretical justifications and analytical works that would reveal the applied features of the content of the formation of an innovative and intellectual environment, thus necessitating a thorough research.*

Originality/Value: *The originality of the research is based on the fact that the economic and legal perspectives of intensifying the functioning and development of the innovative and intellectual environment in Ukraine were considered in terms of the definition of the "innovative and intellectual environment", its features, the relationship with human intellectual capital, the definition of intellectual property rights, a complex of interconnected systems in the infrastructure of innovative activity, a mechanism for the creation and functioning of production and financial formations related to the development of innovative potential, and with an organizational and functional structure that includes the transition to the intellectual property market.*

Keywords: *Digital economy, intellectual property, enterprise assets.*

JEL codes: *M2, O1.*

Paper type: *Research article.*

1. Introduction

The formation and development of the innovative and intellectual environment today are aimed at creating and developing of intellectual property rights, which becomes the main condition for the transitioning to the process of their commercialization when consumers are interested in transforming the objects of intellectual property rights into innovative products in the production sphere in order to obtain added value (profit), which is one of the main directions of Ukraine's advancement from the traditional to the digital economy of intellectual property.

The term "innovative environment" was introduced into the scientific circulation by the group of European scientists, scientists L.I. Pankova and T.P. Potapenko (Pankova and Potapenko, 2016, p. 189-190; Groupe de Recherche Europeen sur les Milieux Innovateurs – a group of European researchers of innovative environment).

Starting from mid 80s of the past century, this group had been studying more than 12 European territories to analyze the environment influencing the functioning of regions. Basic definition innovative environment is considered to be the definition introduced in 1991 by one of the GREMIR participants, characterizing the innovative environment as "a set of network complex informal social relations on a limited geographical space, often defining the external image and special specific internal concepts and feelings of "belonging", which stimulate innovativeness territories through synergy and processes collective learning" (Camagni, 1991, 1-9).

Based on the principle of innovative systems openness, the first detailed description was provided by H. Chesbrough – Professor of the University of California, Berkeley (Kutscheraueratal, Fachinelli, Hučka et al., 2010). Foundations of the new concepts lie in re-examining internal processes of R&D management towards openness, diffusion-based technologies on combining efforts of the university, national laboratories, suppliers, consumers, industry consortia.

The essence of this approach lies in the possibility of using specialized innovative systems to form an innovative environment: business incubators, technology parks, venture funds, innovative centers, patent offices and scientific laboratories (Pankova and Potapenko, 2016).

Furthermore, the authors note that innovative environment is a mechanism of interaction between external environment of the region (mega-, macro- and meso-levels) and regional innovative systems formed by a set of economic, social, financial, and managerial relations which dynamically develop and create conditions for business incubation and competitive innovative development of region as a whole (Pankova and Potapenko, 2016, p. 190).

From our perspective, an innovative environment can be understood as follows:

- from a scientific point of view, it is a system of corresponding innovative infrastructure, whose activities are aimed at obtaining high results in the process of creative and scientific activity;
- it is a set of subjects, material, technical and legal bases of scientific, technical and innovative activity;
- in the production sphere, it is an information space in which initiators, developers, investors and users of innovative technologies interact;
- it is a systemic organizational entity that has its own organizational and functional structure.

The innovative environment acquires a corresponding shade when characterized as intellectual, thus becoming an innovative-intellectual environment. It is focused on creation, development, and implementation of intellectual property rights and, on this basis, transforming objects of intellectual property rights into innovative

products in the production sphere through the implementation of active management.

This type of management is oriented not only towards actual costs, but also on the fair value of the assets at current moment of time. What is important here is the acceleration of technical modernization and orientation to labor-saving technologies, as well as intellectualization of production, taking into account the introduction of new forms of labor organization, as well as prospective development of personnel in accordance with the philosophy of the economic entity.

A classic example of an intellectual environment, as noted by I.S. Zinovieva (Zinovieva, 2017), is the so-called "smart home". Derived from the concept of smart home, there are smart offices, or environments adapted to the needs of the elderly people (ambient assisted living).

The very term "intellectual environment" (in the literature there are also definitions of "intellectual space", "intellectual surroundings") literally refers to "ambient intelligence" (abbreviated AMI). It means an extended physical environment embedded with technical device (for example, sensor networks), sensitive to human presence responsive to it. Such sensitivity involves user recognition, understanding their preferences and context, and predicting behavior.

The term "intellectual environment" (from English, ambient intelligence) as defined by the Information Society Technologies Advisory Group (ISTAG), is interpreted as a set of distributed computing technology, ubiquitous and pervasive communication means, and user-friendly interfaces (Gupta, 2003).

In the scientific literature, the concept of "intellectual environment" is equated with the concept of "human-technology-environment" interaction, according to which people are surrounded by an intellectual and intuitively understandable interface embedded in everyday objects (Ostroukh, 2015).

The defining characteristics of the intellectual environment, as noted by I.S. Zinovieva (Zinovieva, 2017), are:

1. Integration into the environment: users do not need to deal with individual sensors, detectors, etc., only with the user interface;
2. Contextual dependence: the ability to recognize the user and the situation in which it is important to make certain decisions;
3. Personalization: the ability to serve different users according to their personal needs;
4. Adaptability: the intellectual environment should change in response to the actions or wishes of users;
5. Proactivity: understanding the needs of users, consists not only in the reaction to the request, but also the possibility of proactive actions.

From our perspective, the listed tasks of the intellectual environment and its defining features indicate the significant difference between this term and the concept of an innovative and intellectual environment and, including the intellectual environment itself; these are not identical concepts.

The main feature of the innovative and intellectual environment is the creation and organization of the innovative infrastructure, which has external and internal links with the intellectual property market.

The innovative environment is interconnected with the innovative intellectual environment. It is in the innovative-intellectual environment that human intellectual capital is born, which arises from the development of human intellectual potential when involved in scientific and production innovation activities aimed at creating and developing intellectual property, taking into account the strategic directions of business entities.

Human intellectual capital includes inventors, rationalizers, scientists, engineering and technical specialists (designers, mechanics, technologists, etc.), whose efforts are aimed at developing innovative product in the scientific activity and innovative production under the condition of creating and developing innovative infrastructure that accepts creative developments.

2. Capitalization of Intellectual Property Rights and Development of Innovative and Active Production and Intellectual Systems

The capitalization of intellectual property rights significantly affects the efficiency level of business entities, the emergence of new structural transformational challenges in the innovative and intellectual environment.

The primary indicator is the manifestation of intellectual capital activity as a (creative) source of wealth, the development of innovative and intellectual activity, and increased efficiency in the real economy. Capitalization in general understanding is transformation of surplus value or profit into capital.

The capitalization of intellectual property rights in the modern economy becomes its dominant, the principle of effective growth, the stimulator of market relations, structural transformation processes in the innovative and intellectual environment. It is important to note that the capitalization of intellectual property rights should not be confused with the capitalization of assets, as these are different phenomena in terms of economic content, although they have a similar calculation methodology.

In the classical terms, the "capitalization of property" means reinvestment of the profit received by the enterprise (firm), that is, the transformation of profit into

additional capital. In modern economic literature, the main attention of scientists is focused on the ability of capital to generate income for its owner.

In a market economy, as rightly noted by V.H. Andriychuk, economic growth is impossible without capital concentration, therefore, in the classical sense, the term "capitalization" means the reinvestment of the company's profit, that is, the transformation of profit into additional capital (Andriychuk, 2005).

A detailed analysis of scientific research allows to distinguish two main approaches to interpreting the essence of the economic category "capitalization". The first approach focuses on capitalization as a direct consequence of the processes of transformation of future cash flows into added value, i.e., the objective approach.

The second approach focuses on the study of the totality of these processes – the process approach (Makarova, 2014, p. 257). Furthermore, the term "capitalization" in its very name means movement, dynamism, development, and in relation to the object of research – the enterprise, this dynamism is evident and implemented directly in the form of a certain process (Makarova, 2014, p. 257).

Such a theoretical aspect details the economic nature of capitalization, deepens the business interest of capital owners in its growth at the expense of future investment and innovation activities, where there is an objective and process movement of capital.

The term "capitalization" has different interpretations, as summarized by Bryukhovetska (Bryukhovetska, 2007, p. 224):

- the market value of the company, calculated by multiplying the stock exchange price by the number of shares outstanding;
- the market value of the company, calculated by multiplying the total number
- shares of this issuer by the average price of the best bid-ask quotes;
- use of a portion of surplus value for expanding production;
- the process of investing portion of the profit in securities and receiving profit on them in the form of interest.

A more common definition of "capitalization" was given by the famous scientist Mochernyi in the economic encyclopedia, as the use of a portion of the surplus value for the expansion of production, or the process of investing portion of the profit in securities and receiving profit on them in the form of interest (Ekonomichna entsyklopediya, 2000, p. 730).

Modern scientists interpret the term "capitalization" in different ways. It is often used to denote the assessment of a firm's value based on fixed and working capital; evaluation of the value of the firm based on the market value of its stocks and bonds or based on the annual profit received (Pronko, 2011). The term "market

capitalization", which means the value of all shares of a joint-stock company, that is, it is the price that the market is ready to pay for the company in case of its sale (Hrytsenko, 2006).

The process of converting available resources into value that generates additional value is capitalization. This approach makes it possible to distinguish real and fictitious, direct and reverse capitalization, capitalization of various sectors (industry, agriculture, banking, financial market, etc.) and spheres (Pronko, 2011, p. 86).

Real capitalization is the transformation of value embodied in material and other assets into a source of growth of this value. Fictitious capitalization is real capital represented by securities (Pronko, 2011, p. 86).

At the same time, taking into account the opinion of Poburko (Poburko, 2011) they identified the following functions of capitalization, which can be further adapted to the capitalization of intellectual property rights:

1) evaluative – reflects assessments of the financial and economic activity of the enterprise in order to study its efficiency and identification of available reserves;
2) prognostic – serves as an indicator of the future state of the enterprise; the main content of this function consists in evaluating the potential of the enterprise;
3) mobilization – consists in attracting resources for the purposes of organization, expansion of production, rapid development of modern technologies, etc.;
4) distributive – the essence of this function consists in the efficient allocation of all involved resources for the development and expansion of the enterprise's activities, that is, the implementation of the capitalization process, which ensures the balance of the economic activity of the enterprise;
5) strategic – involves choosing promising directions of the enterprise's activity, aimed at long-term perspective, achieving competitive advantages of the enterprise and ensuring stable and effective functioning, maintaining its positions on the market;
6) stimulating – serves as a stimulator of economic, scientific and technical development of entrepreneurial activity;
7) informational – enables to quickly collect or distribute information about the level of economic stability and investment attractiveness of the enterprise at the micro and macro levels (Bagatska and Pyuro, 2017, p. 113).

Summarizing the above, in this case we have a general interpretation of capitalization related to investment and innovation activity aimed at increasing the capital of tangible assets, which are considered as the estimated value of all fixed and current assets of enterprises (the value of the firm).

At the same time, this process is combined with a corporate transaction, when the value of a corporation is determined based on the market value of its shares, which is a component of the development of innovative and active production and intellectual systems that carry out in their activities the capitalization of intellectual property rights in the direction of their increase in relation to capital of tangible assets.

Regarding the capitalization of intellectual property rights, which is the focus of our attention, there is still no single definition for the interpretation of this concept yet. It was emphasized by Pluhina (2012) where the scientist notes the growth of scientific interest in the essence and significance of capitalization, leading to the appearance of a large number of various interpretations and concepts related to this category, although completely different in nature (namely: capitalization of the economy, industry, stock market, banks, profit, net cash flow, intellectual property, etc.).

However, as Pluhina rightly points out, scientific interest in the area of capitalization of intangible assets of enterprises is in its infancy. Studies show that the share of intangible assets in the formation of the total value of the enterprise is significantly higher than its tangible assets, which undoubtedly indicates the decisive role of the former in the formation of the real value of the enterprise. Therefore, for Ukrainian enterprises and corporations, the issues of disclosure and use of intellectual capital become extremely important for increasing the efficiency of their activities.

The capitalization of intellectual property rights is associated with intellectual capital. Intellectual capital, from our perspective, is one of the types of capital, which has the corresponding features of capital and simultaneously reproduces the specifics and peculiarities inherent only to it (intellectual capital). As an economic category, intellectual capital is considered by us from the perspective of advanced intellectual property, which, during its movement, brings greater value due to additional value.

Based on this position, considering the above-mentioned theoretical explanations, you should approach the definition of the capitalization of intellectual property rights and, if possible, adapt the theoretical findings to the above-mentioned specific functions and features of general capitalization.

The content of the intellectual property rights consists of the rights of ownership, use and disposal of property. Intellectual property is the result of intellectual, creative activity that meets the requirements of current legislation and is provided with legal protection. Intellectual property consists of personal non-property intellectual property rights and property intellectual property rights, the content of which is determined by legislation.

Intellectual property is a part of intellectual assets characterized by the exclusive ownership rights protected by the relevant legislative acts. Intangible assets are a component of the resource capital of an enterprise, which is characterized by the

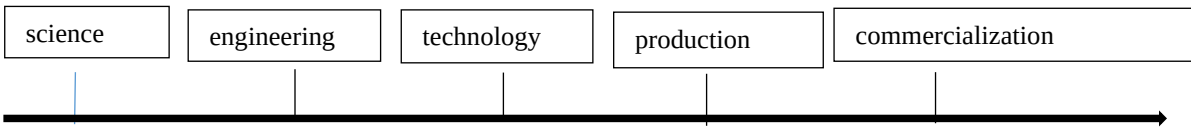
ability to generate income over a long period of time, the absence of a material basis, the difficulty of determining benefit (profit) in the future. From this perspective, we will define the term "capitalization of property rights" in the field intellectual property.

Capitalization of intellectual property rights is the value of intellectual property rights in the process of its commercialization aimed at obtaining profit (added value). This is a dynamic variable component of the asset value, which reproduces the market capitalization of the assets of the economic entity.

3. A Methodical Approach to Management Decisions Regarding the Transformation of Intellectual Resources into Enterprise Assets

Modeling in the field of intellectual property does not have clearly defined factors associated with the decision-making problem, in a logically coherent scheme that can be analyzed in detail. This is because the implementation of intellectual property rights (IPR) is associated with their further transformation into corresponding innovative technology, taking into account the origin of intellectual capital and its circulation, as well as active innovation management, at producing and selling of innovative outputs of appropriate quality while adhering to a complex of standards.

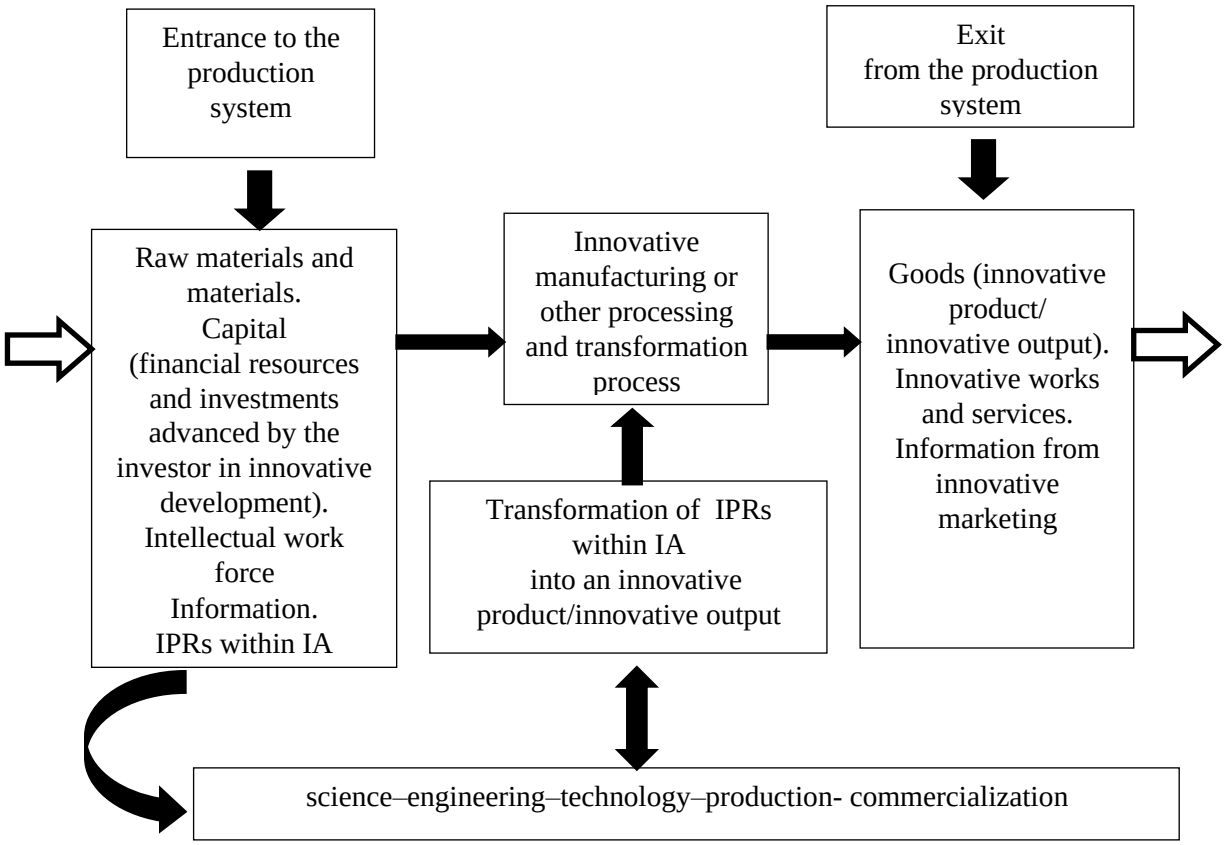
The result of the innovation process is the transformation of the scientific knowledge into innovations, which forms a sequential chain of events:



or decisions of a production, financial, administrative or other nature and other results of innovative activities. The model of the origin of intellectual capital and the circulation chain of capital is shown in the model (Figure 1) (Butnik-Siverskyy, 2019).

We should note that only the investment of financial resources and investments in the creation or acquisition of IPRs as a part of intangible assets (IA), advanced by the investor in the innovative development of economic activity allows for the receive the profit. The modern market stimulates the development of creative intellectual activity, the implementation of new technologies, inventions, utility models, software products, etc. into the public technologies. The elements of marketability are not only material things, objects and services, but also the results of intellectual activity – ideas, management decisions, inventions, utility models, etc.

Figure 1. *Model of the origin of intellectual capital and the capital circulation chain*



Source: *Own study.*

At the output of the production system, upon completion of the transformation processes of processing and conversion processing in combination with intellectual assets, we obtain tangible goods – an innovative product and innovative output (innovative works, innovative services), which are sold on the market with the withdrawal of additional product (profit).
Under these conditions the information from innovative marketing is formed for successful activities related to innovative goods and products in the market.

The transformation of economical intellectual resources into enterprise assets or intellectual assets is primarily carried out through two approaches:

1) Classification as intellectual capital (component of intellectual capital, which includes intellectual property, unique knowledge and experience of employee that are protected against unauthorized spreading);

2) Classification as intangible assets: i.e. they are allocated from objects of intellectual property rights (the value of intellectual resources, which in economic circulation are transformed into the form of intangible assets).

When disclosing the content and utilizing intellectual assets, it should be considered that these are economic resources of enterprises, which are the result of creative, scientific, or inventive activities, possessing artificially created properties of rarity and uniqueness, as well as the ability to bring economic benefits. They:

1) include intellectual property, natural and acquired intellectual abilities and skills, as well as an accumulated knowledge bases and beneficial relationships with other entities;
2) are an integrated economical category, that is part of intellectual capital and is based on the unique (rare and exceptional) economical resources of the organization, which are the result of intellectual creative, scientific, and inventive activities and capable of providing future economic benefits;
3) are a universal resource with a unique nature that increases the income and profitability of enterprises and acts as a form of obtaining possible future benefits and are capable of generating income;
4) ensure not only the increase of the balance value of enterprises, but also ensures their capitalization and the possibility of additional attraction of investment resources;
5) support the capitalization of the enterprise, maximizing its market value, which allows to ensure its stability and further development through a greater possibility for attracting investment resources.

If you take a methodical approach to assessing the regularities and making management decisions regarding intellectual assets, their characteristic features should be taken into account:

1) they are practically immune to the risk of a sharp decline in value;
2) they are represented in a specially encoded form;
3) they can move quickly between different legal entities;
4) their consumption value does not decrease when used simultaneously;
5) there have low variable costs;
6) they have unique price formation;
7) they have potential for returns increasing;
8) they are almost unaffected by depreciation (or obsolescence);
9) they have risk-oriented management methods, which is important strategic direction for the enterprise's development, and should be taken into account when preparing financial budgets.

It is important to note that the management of enterprise assets (capital) requires an assessment of effectiveness from the perspective of economic value added (hereinafter

– EVA), is carried out by selecting methods of capital investment, including intellectual capital, the profitability of which will exceed the value of the enterprise's (firm's, company's) capital. In this case, the adopted method of evaluation of the management of the company's capital, which is associated with the indicator of added value.

It should be noted that the mathematical model of the EVA concept as developed and registered by Stern Stewart & Co company, although its principles were laid down in Alfred Marshall theory of economic income. The concept of management based on EVA emerged as a result of the development of the asset management concept, based on enterprise value (Korzh, 2012).

The EVA indicator, as noted by Shvidanenko and Shevchuk (2007) is derived from such indicators as return on equity (ROE) and return on capital employed (ROCE). It is based on the following principles:

- the owner invests capital to receive income;
- the enterprise was created to obtain additional income;
- the activity of the company's personnel is aimed towards increasing its market value due to the implementation of the motivation system.

To assess the degree of influence (weight) of each component in the calculation on the final indicator of economic value added, a model approach to forming economic value added can be utilized (Porokhnya 2008, p. 111), where a clarification was introduced to the invested capital in the form of "Intellectual Capital (the value of intellectual property rights objects in the process of transformation into innovative products)" is introduced into the invested capital, which corresponds to the logic of the transformation process at the enterprise (Butnik-Siverskyi, 2019).

This methodological approach of supplementing the model with intellectual capital substantiates management decisions regarding the transformation of intellectual resources into enterprise assets. The Economic Value Added (EVA) indicator is the result of the evolutionary development of the paradigm of integrated business performance assessment indicators. The EVA indicator, as noted by S.M. Matsera, is determined to calculate the profitability of the enterprise from the position of its owners (Matsera, 2011).

It indicates how much the company's profit differs from the necessary minimum level of profitability (taking into account the corresponding risks) for shareholders or creditors (Mozenkov, 2009, p. 84).

The economic value added, as defined by Matsera, is the company's profit from ordinary activities without taxes, reduced by the amount of capital invested in the company. The economic essence of this indicator lies in the fact that it can be used to evaluate the effectiveness of alternative capital investments and the selection of the best option.

Analyzing the methodology of calculating the EVA indicator, it should be noted, according to scientists, that it can be used to compare individual business segments and, through decomposing the indicator into components, building value creation trees, goal control, and determining responsibilities for results, identifying unprofitable areas of activity. Thus, it becomes possible to evaluate the most important points of the company's activity from a unified point of view: planning, investments, goal setting and motivation of top managers (Kalininina, 2005, p. 194-194).

The calculation of economic value added (EVA) indicator is carried out according to the following formula:

$$EVA = NP – C * WACC/100, \quad (1)$$

where: NP is net profit, which is calculated without taking into account the fee for loan capital use, but taking into account tax savings, UAH; C – amount of capital (equity + loan), UAH; WACC – weighted average cost of capital, %.

F. Evans suggests to calculate the market value of the company according to the EVA indicator with inclusion of intellectual capital into the formula:

$$EVA=NOPAT – IC * WACC, \quad (2)$$

where: NOPAT – net operating profit after taxes; IC - invested capital, which may also include intellectual capital in the form of value of objects of intellectual property rights; WACC – weighted average cost of capital of the enterprise;

Kouplend (2005) and Drury (2002) present a slightly different method of calculating this indicator. Calculation of the EVA indicator is also possible with the inclusion of intellectual capital in the formula:

$$EVA = (ROCE-WACC) * C, \quad (3)$$

where: ROCE – return on capital ymployed (defined as the ratio of earnings before interest and taxes (EBIT) to the difference between total assets and current liabilities); C is the amount of raised (equity) capital, which may include intellectual capital.

Mozenkov and Kalyuzhnyi emphasize that it is quite difficult to determine the value of share capital, since it includes a risk premium, which significantly complicates the calculation of WACC, as well as determining the optimal ratio of debt and share capital. The income tax rate is also taken into account, since the interest on the

received loan is paid simultaneously with the accrued taxes. In this case, the WACC is calculated as follows (Mozenkov, 2009, p. 85):

WACC = (Loan funds / TF) × (Cost of loan capital) × (1 – taxes) +
+ (Share capital / TF) × Cost of share capital, (4)

where: TF is the sum of market values of loan funds and share capital.

The EVA indicator, as noted by Shvydanenko and Shevchuk, is used to evaluate the efficiency of the enterprise activities from the perspective of its owners, and indicates the usefulness of the business results if the enterprise earned more than the return on alternative investments.

This can explain the fact that in the process of calculating EVA, the fee for using not only borrowed capital, but also owned capital is deducted from the amount of operating profit. Thus, the scientists conclude that it can be argued, that this approach more accurately reflects the real value of operating capital, taking into account intellectual capital.

Thus, the essence of the EVA concept is manifested in the fact that this indicator, as noted Shvydanenko and Shevchuk (Shvydanenko, 2007), reflects the value of the ratio of added value to the market value of the enterprise and the evaluates the efficiency of the enterprise's activity taking into account the latter. The calculation of the market value of the enterprise based on the concept of EVA can be carried out by the following formula with the inclusion of intellectual capital into the formula:

$$V = IC_0 + \sum_{t=1}^{n} \frac{EVA_t}{(1+WACC)^t} + \frac{EVA_{t+1}}{(1+WACC)^t}, \quad (5)$$

where: IC_0 – invested capital, which may also include intellectual capital in the form of value of objects of intellectual property rights.

From this relationship between the market value of the enterprise and EVA values, scientists point out that the company should plan future values of economic value added for future capital investment by shareholders, including intellectual capital in the form of value of objects of intellectual property rights.
The practical side of the given formula is the investment of capital, in our case in the investment of intellectual capital, in the development of the enterprise in the relevant time perspective.

The higher the professional level of the company's managers, Shvydanenko and Shevchuk (Shvydanenko, 2007), the more realistic the achievement of the forecasted EVA can be. This can explain the fact that in large western companies, the EVA values are the basis for rewarding managers who become more interested in the growth of profits and the value of the enterprise. That is, the economic value added is the basis of the

motivation system, which contributes to the intensification of the company's capital, including intellectual capital.

The EVA concept, as noted by scientists, is often used by western companies as a more sophisticated tool for measuring the effectiveness of departmental compared to net profit . This choice is explained by the fact that EVA allows evaluating not only the final result, but also the price at which it was obtained (i.e., the amount of capital, as well as intellectual capital and at what price it was used).

Thus, the following ways to increase the EVA level can be highlighted:

1. Increasing profit when using the former amount of capital;
2. Decreasing of the amount of used capital, including intellectual capital, while maintaining profit at the former level;
3. Reduction of costs for attracting capital, including intellectual capital.

4. Digital Economy as a Direction of Transformational Changes in the Intellectual Economy

At the legislative level, the term "digital economy" was first used by the US Department of Commerce in its 1998 annual report to describe an economy whose growth rates were much higher than previous ones, accelerated by the implementation of computer and telecommunication innovations (US Department, 1999).

One of the important characteristics of this type of economy, according to Lazebnyk and Voytenko, is the inclusion of knowledge and information obtained by industrial society (in addition to the three main factors of production – labor, capital, and land). Furthermore, these scientists believe that "digitalization of the main types of economic activity, including production, distribution and consumption of goods and services, is another main property of the digital economy" (Lazebnik, 2020, p. 23).

New computer technologies and developments are primarily aimed at creating a favorable environment for the emergence of such solutions, for maximum disclosure of human talents and creative abilities. At the same time, from our perspective, in the context of the modern economy, its further updating and viability is carried out under the influence of the process of transformation of the economy into a digital economy, where intellectual property becomes the main catalyst, which becomes the subject of our attention.

The international organization OECD (Organization for Economic Cooperation and Development) and scientist Thomas Mesenbourg identify three main components of the digital economy (The Concept…):

- supporting infrastructure (hardware and software, telecommunications, networks, etc.);
- electronic business or e-business (conducting business activities and any other business processes through computer networks);
- electronic commerce or e-commerce (distribution of goods via the Internet).

Kling and Lamb (2000) define four parts of the digital economy:

1. Highly digital goods and services: goods delivered in digital form and services, significant portions of which are delivered digitally (e.g., online information services, software sales, online education).
2. Mixed digital goods and services: retailing of physical goods (e.g., books, flowers, hotel rooms plus related sales and marketing).
3. IT-intensive services or goods production: services that critically depend on IT for their provision (for example, accounting services or complex engineering design), production of tangible goods where IT is crucial for development (for example, precision machining that uses using computer numerical control or chemical processes controlled by a computer).
4. IT industry segments supporting these three segments of the digital economy: IT industry goods and services that most directly support the aforementioned three segments of the digital economy, including a significant portion of the manufacturing industries connected to computer networks, PC manufacturing, etc., some IT consulting firms.

From our perspective, some scientists do not notice the influence of intellectual property on the process of transformation of the modern economy into a digital economy. Intellectual property and human capital participate in the process of economic transformation as the main catalyst, accelerating economic processes in the digital economic environment.

Human capital serves as the main catalyst in the form of intellectual property, forming intellectual capital, which is a created or acquired intellectual product that has a value estimate, is objectified, and identified. From an abstract point of view, the main catalyst is intellectual property and human capital is considered an accelerator of implementation in an innovative and intellectual environment of the processes of transformation of the modern economic environment into an environment where a digital economy prevails, which is economically more profitable and efficient.

The main catalyst in the form of intellectual property and human capital contributes to the formation in the innovative and intellectual environment of new intellectual property of the appropriate type (inventions, utility models, computer programs, etc.), which participate in the creation of various technological processes (for example, IT technologies), in which connections are strengthened with the emergence of a new type of knowledge in the form of new media, such as network-

based databases, the development of computer networks and the Internet, etc., which are economically beneficial, i.e., a "universal diffusion of knowledge is carried out, allowing the exchange of knowledge as a commodity in the market".

Thus, the transition of the economy from a traditional format to a digital one with regard to intellectual property is an important stage in the development of the modern economy, which incorporates the "newest digital technologies", where the main catalyst in the form of intellectual property and human capital accelerates the transformation process.

5. Conclusions .

Summarizing the research of the development of an innovative and active environment as a condition for the transition from the traditional to the digital economy of intellectual property, we should note:

- activation of the functioning and development of the innovative and intellectual environment should be based on an organizational and functional structure that ensures the establishment of economic connections between the elements of the logistics system aimed at the efficiency of its functioning, at the creation of a complex of interconnected systems of the developed infrastructure of innovative activity with the participation of commercialization intermediaries;

- the capitalization of intellectual property rights becomes a dominant factor in the economy, a principle of effective growth, a stimulator of market relations, structural transformation processes in an innovative and intellectual environment. It represents the value of intellectual property rights in the process of its commercialization aimed at obtaining profit (added value) and reproduces the market capitalization of the assets of the economic entity;

- real capitalization of intellectual property rights is the transformation of the value of intellectual property rights (intangible assets) in economic circulation into an innovative product in the scientific sphere or innovative products in the production sphere, or into a new value as a source of growth of this value. Its expansion is associated with the movement of intellectual capital towards its growth or distribution and use of the received profit;

- the transformation of intellectual property rights is carried out through the symbiosis of capital with intellectual capital by a comprehensive combination of the efforts of the intellectual workforce, intellectual assets and material production assets according to the target, taking into account the innovative strategy of the enterprise (economic entity);

- enterprise asset (capital) management requires an assessment of their efficiency from the point of view of economic value added (EVA), which involves choosing ways to invest capital, including intellectual capital, the profitability of which will be higher than the cost of capital of the enterprise (firm, company). Such a methodological approach, supplemented in the model of intellectual capital, justifies managerial decisions regarding the transformation of intellectual resources into enterprise assets;

- the main catalyst in the form of intellectual property and human capital is considered an accelerator of implementation in the innovative and intellectual environment of the transformation processes of the modern economic environment into an environment where a digital economy dominates, which is economically more profitable and efficient. This catalyst justifies the formation in the innovative and intellectual environment of new intellectual property of the appropriate type (inventions, utility models, computer programs, etc.), which participate in the creation of various technological processes (IT technologies), strengthening connections with the emergence of new type of knowledge in the form of new media, databases, development of computer networks and the Internet, etc.

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