The object of research is the process of state-legal provision of dynamic informational development of the socio-economic environment. It was determined that under modern conditions, the state-legal provision of dynamic informational development of the socio-economic environment consists in creating favorable conditions for the institutions of civil society. This should be implemented by the state in the form of authorized state authorities using a set of methods and means, as well as indirect influence through other socially important institutions, taking into account the development of scientific and technical progress. It is necessary to emphasize the economic, social, and legal criteria of society, which together form an effective basis for the development of the state. These criteria include economic and social freedom, which is possible only in a society with a market economy, where there is the right to choose any form of ownership and types of entrepreneurial activity, within the limits of legislation. Social criteria include self-governance and initiative of members of society; openness, i.e., free access to all sources of information.

The indicators of the dynamic range of the employed people in all types of economic activity in Ukraine, the number of the employed people aged 15–70 by professional groups, and the indicators of the dynamic range of innovation costs were analyzed. Using Mann-Whitney U-test calculations, as well as Spearman's rank correlation coefficient, established that the rank correlation coefficient is statistically not significant and the rank correlation between the scores of the two tests is insignificant.

Based on the results of the research, a map of the state-legal provision of dynamic information development of the socio-economic environment is proposed

Keywords: resources, information, state and legal support, information development, social and economic environment, state development

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PATTERNS OF THE STATE-LEGAL SUPPORT TO THE DYNAMIC INFORMATION DEVELOPMENT OF THE SOCIO-ECONOMIC ENVIRONMENT

Viktoriia Prokhorova
Doctor of Economic Sciences, Professor*
Viktoriia Chobitok
Corresponding author
Doctor of Economic Sciences, Professor
Department of Marketing and Trade Entrepreneurship**
Kateryna Pershyna
Doctor of Philosophy
Department of Legal Support
National Academy of the National Guard of Ukraine
Zakhysnykiv Ukrainy sq., 3, Kharkiv, Ukraine, 61001
Iryna Miahkykh
Doctor of Economic Sciences, Professor
Department of Entrepreneurship and Business
Kyiv National University of Technologies and Design
Mala Shyianovska str., 2, Kyiv, Ukraine, 01011
Oleksii Shelest
PhD, Associate Professor*
Yaryna Yukhman
PhD, Associate Professor
Department of Business Economics and Investment
Lviv Polytechnic National University
S. Bandery str., 12, Lviv, Ukraine, 79013
*Department of Economics and Management**
**Ukrainian Engineering Pedagogics Academy
Universytets'ka str., 16, Kharkiv, Ukraine, 61003

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1. Introduction

Under modern conditions, the state-legal provision of dynamic informational development of the socio-economic environment consists in creating favorable conditions for the institutions of civil society. This should be implemented by the state in the form of authorized state authorities using a set of methods and means, as well as indirect influence through other socially important institutions, taking into account the development of scientific and technical progress.

It is necessary to emphasize the economic, social, and legal criteria of society, which together form an effective basis for the development of the state. These criteria include economic and social freedom, which is possible only in a society with a market economy, where there is the right to choose any form of ownership and types of entrepreneurial activity, within the limits of legislation.

The socio-economic development of the system at the time of radical innovation and information changes is determined by many endogenous and exogenous factors that shape the features of the current state of the system. However, the task of achieving sustainable socio-economic development remains unattainable. A unique combination of natural, human (demographic), economic, social, political, and tech-

nical potential determines the priorities of socio-economic development, taking into account legal support.

Social criteria include self-governance and initiative of members of society; openness, i.e., free access to all sources of information.

The principal areas of implementation of the state-legal provision of dynamic informational development of the socio-economic environment are the creation and support of targeted financing of socially useful programs (state subsidies). The conclusion of all types of contracts and social ordering and the organization of tenders for the implementation of state programs are relevant areas of state development. Formation of conditions for the provision of benefits regarding the payment of taxes and fees, as well as the provision of other benefits, including full or partial exemption from the fee for the use of property, due to the openness of information.

The formation of a system of spatial, purposeful, dynamic, and stable connections between market entities connected by close internal ties is the basis for the effective development of the state. Therefore, the research of state-legal provision of dynamic informational development of the socio-economic environment is relevant.

2. Literature review and problem statement

Certain directions of movement of the trajectory of socio-economic development are highlighted in work [1], where the authors propose the development of a procedure for implementing an informational and consulting web service for personnel management using modern information technologies. This information should have open access at various levels, but the question of the security of this information and its protection against illegal use remains open. To overcome these problems, it is necessary to use elements of cyber security for the storage and use of data in order to ensure the effective socio-economic development of society, which are related to the state-legal provision of dynamic information technologies.

In work [2], the systematization of knowledge about the functioning of the public sector is considered in detail. It emphasizes that this knowledge is not concentrated in only one direction but also in many empirical directions, starting from law, economics, management and political science to sociology, psychology, etc. But it is not entirely clear which direction actively influences the sustainable development of the socio-economic environment under modern conditions of drastic changes.

In [3], directions of transnational management, relevant in the global business context, as well as the expansion of supranational agencies and the influence of bureaucratic problems on the behavior of cooperation in transnational administrative networks are considered. But the direction of overcoming bureaucratic politics and reaching a new level of development of state and legal support with the use of dynamic information technologies remains unresolved.

In [4], a simple and accessible tool for constant reporting on the size of public administration for the purpose of monitoring costs is proposed. Monitoring results can also be used to create an incentive program for representatives of regional politics, the proposed tool can be effectively used in the process of sustainable socio-economic development. But in the formation of state legal protection, it would be expedient to take into account the social status, income level of the population and socio-cultural personalities that influence the level of development of society.

In work [5], the symptomatic set of export-import activity, which actively affects socio-economic development, taking into account legal support, is considered. But it would be expedient to reveal in more detail the issues related to the formation and control over the implementation of legal support. These aspects have a negative impact on the informational development of the socio-economic environment.

The analysis of paper [6] shows that the key strategic guidelines for the development of regional business entities in the context of the digitalization process under the influence of potential-forming determinants have been determined. They form the substantive basis of further strategic development processes. But the active direction should be the implementation of effective legal state actions with the unconditional participation of private initiative. These actions should be aimed at restoring the economic, human, and innovative potential and determining the priorities of socio-economic development.

Paper [7] claims that information flows in a distinct way create the basis for the formation of knowledge during a certain period of time for the further development of technologies. All this provides access to new sources of information on mass energy consumption, which are the key to the survival of humanity and the creation of a better quality of life for it. It would be appropriate to consider exactly how information flows affect people's consciousness and the formation of their thinking.

In [8], it is substantiated that minimizing the spread of social vulnerability in the regions of Ukraine requires the formation of an effective mechanism of state policy to ensure the social resilience of the territory. Therefore, it would be expedient to propose mechanisms of state-legal support for the dynamic informational development of the socio-economic environment in the modern sense, which includes the entire body of knowledge and information necessary to achieve certain goals.

Numerous scientific works have been published, which in many respects relate to the topic of state-legal provision of dynamic informational development of the socio-economic environment. All this allows us to state that the topic, under the conditions of active development of scientific and technical progress, requires constant additional research taking into account the effects of various etiologies of origin. The analysis of literary data [1–6, 9] shows that the problem of researching the state-legal provision of dynamic informational development of the socio-economic environment is quite natural. This issue is aimed at the formation of a system of spatial, purposeful, dynamic, and stable connections between market entities connected by close internal ties.

Effective performance of socio-economic functions requires the presence of favorable conditions for their functioning and development of society and the country. Under modern conditions, the external market environment for the functioning of the domestic economy has not yet been fully formed. Quality opportunities have not yet received significant development due to the fact that the development of the economy is influenced by many factors. These include economic, social, political, legal, demographic, historical, and other factors.

A crucial point of the new concept of state-legal provision of dynamic informational development of the socio-economic environment is the determination of the dependence

of dynamics on external and internal factors. Research in this direction shows a certain regularity – the economic essence of the economy demonstrates positive dynamics under the influence of the following factors: the development of various forms of ownership and management; investment activity; demonopolization of the economy and development of competition, etc.

In order to form an effective direction of state-legal provision of dynamic informational development of the socio-economic environment, it is necessary to take into account foreign experience in the practice of Ukrainian enterprises to support the economy, on the basis of which to produce specific proposals for the development of the specified directions.

Cyclical fluctuations in the economy of many industrialized countries and various social consequences associated with them force the authorities to give priority to the socio-economic development of the economy.

The essence of international experience is aimed at organizing support for the economy and compliance with the strategic direction of social and economic policy; the orientation of the Ukrainian economy to the needs of business entities and the achieved level of economic development, taking into account state and legal support.

3. The aim and objectives of the study

The purpose of this study is to determine the key imperatives based on the principles of sustainable development of the socio-economic environment, which are related to the state-legal provision of dynamic information technologies. All this will make it possible to focus on improving economic growth and solving a wide range of problems in the field of health care, education, employment, social protection, as well as environmental protection.

To achieve the goal, it is necessary to solve a number of tasks, namely:

– to analyze indicators of the dynamic range of the employed people in all types of economic activity in Ukraine;

– to analyze indicators of the dynamic range of costs for innovation in Ukraine;

– to develop a map of state and legal provision of dynamic informational development of the socio-economic environment.

4. The study materials and methods

The object of our study is the process of determining the regularities of state and legal provision of dynamic informational development of the socio-economic environment. The subject of the study is a set of methodological principles, theoretical-methodical, and scientific-practical recommendations regarding the process of determining the regularities of the state-legal provision of dynamic informational development of the socio-economic environment.

The hypothesis of the research is an assumption regarding the positive impact of the state-legal provision of dynamic information development on the activity of the socio-economic environment. Awareness of the rights and interests of the population, business entities and the state will contribute to increasing the level of use of intellectual capital and will provide an opportunity for Ukrainian society to reach a new level of innovative and technological development.

The scientific study took into account the need to combine:

– principles of state-legal provision of dynamic informational development of the socio-economic environment;

– definition of key imperatives of sustainable development of society;

– search for innovative measures of cooperation between the state and society;

– research on the relationship between state and legal provision and informational development of the socio-economic environment, which is possible thanks to the use of methods of theoretical generalization, comparison, and logical-structural analysis.

When substantiating the calculation of indicators of the dynamic range of the employed people in all types of economic activity in Ukraine, as an indicator of the real level of the country's development, methods of comparison, synthesis, analysis of actual data and theoretical generalization were used.

Thanks to the use of economic and statistical methods of analysis of actual data, indicators of the dynamic range of costs for innovations in Ukraine for 2012–2020 were analyzed [9].

Due to the use of methods of comparison, synthesis, and theoretical generalization, a map of state-legal provision of dynamic information development of the socio-economic environment was developed. In the modern sense, this map should include all the knowledge and information necessary to achieve a certain goal.

Knowledge, rules, and principles of process management must be taken into account in the map, namely: natural, financial, human, energy, intellectual and informational resources. The full set of social, economic, ecological, and political consequences of the implementation of this map in a specific environment, consequences of the use of manufactured products and services should also be taken into account.

5. Research results of the process of convergence of educational technologies as an imperative for the development of innovative cooperation

5. 1. Analysis of indicators of the dynamic range of the employed people in all types of economic activity in Ukraine

At all stages of the development of human society, there were various sources of development of productive forces. Some sources pointed to the fact that for all methods of production, the stimulus for the development of productive forces was socio-economic relations. Other sources stated that the means of production were characterized by qualitatively different systems of socio-economic relations.

At all stages of the creation of the human economy and the evolution of society, the only stimulus for the development of productive forces was industrial relations. These relations at different stages of evolution had distinctive characteristics, according to the needs and requirements of the population. It is industrial relations that are the basis of the development of any system (business entity, region, state, etc.). Accordingly, only the population plays a significant role in the development of socio-economic processes and society as a whole. For the further active development of the country, it is expedient to analyze the indicators of the dynamic range of the employed people in all types of economic activity in Ukraine for 2012–2020 [9] (Table 1).

Table 1

Calculation of indicators of the dynamic number of employed people in all types of economic activity in Ukraine for 2012–2020

Year	Indicator (series level), thousand persons	Absolute increase (decrease)	Index of clarity, %	Growth rate (decrease), %	Growth rate (decrease), %	Value of 1 % increment	Interval consolidation method	Moving average method
2010	19180.2	–	100.0	–	–	–	19205.7	19184.8
2011	19231.1	50.9	100.3	100.3	0.3	169.7		19224.2
2012	19261.4	30.3	100.4	100.2	0.2	151.5	19287.8	19268.9
2013	19314.2	52.8	100.7	100.3	0.3	176.0		18883.0
2014	18073.3	–1240.9	94.2	93.6	–6.4	193.9	17258.3	17943.6
2015	16443.2	–1630.1	85.7	91.0	–9.0	181.1		16931.1
2016	16276.9	–166.3	84.9	99.0	–1.0	166.3	16216.6	16292.2
2017	16156.4	–120.5	84.2	99.3	–0.7	172.1		16264.7
2018	16360.9	204.5	85.3	101.3	1.3	157.3	16469.6	16365.2
2019	16578.3	217.4	86.4	101.3	1.3	167.2		16284.8
2020	15915.3	–663.0	83.0	96.0	–4.0	165.8	15915.3	16110.9

According to Table 1, it can be confirmed that the number of the employed people from 15 to 70 years of age in Ukraine had a tendency to increase only in 2011–2013 and in 2018–2019. This is confirmed by the fact that there is no constant increase in the working population in Ukraine, this is connected with demographic problems, constant emigration of the population (especially since 2014), etc.

Below is a more detailed analysis of the number of employed people aged 15–70 by professional groups in Ukraine in 2020 (Table 2), which was conducted on the basis of data from the State Statistics Service [9].

The results of the analysis of the number of the employed people aged 15–70 by professional groups in Ukraine in 2020 are given in Table 2 and in Fig. 1. Most of the working population is engaged in the following professional groups: professionals (17.93 %); the simplest professions (17.90 %); trade and service workers (16.55 %). This confirms the fact that the labor potential of Ukraine is not fully involved in the active development of the information development of the socio-economic environment. These factors are influenced by the low level of motivation of scientific and intellectual workers, primarily due to the low level of salaries of scientists, the decline in the prestige of these professions, and the low level of support from state and legal support. Accordingly, Ukraine lags behind the world's leading countries in potential innovative and technical development according to the Global Innovation Index (The Global Innovation Index), the rating of which is given in Table 3 [10].

According to Table 3, it can be said that Ukraine is only in 49th place according to the level of the Global Innovation Index. This is confirmed by the fact that the entire innovative and intellectual potential is not fully revealed, or Ukrainian intelligence "flows" to other countries that fully motivate this activity.

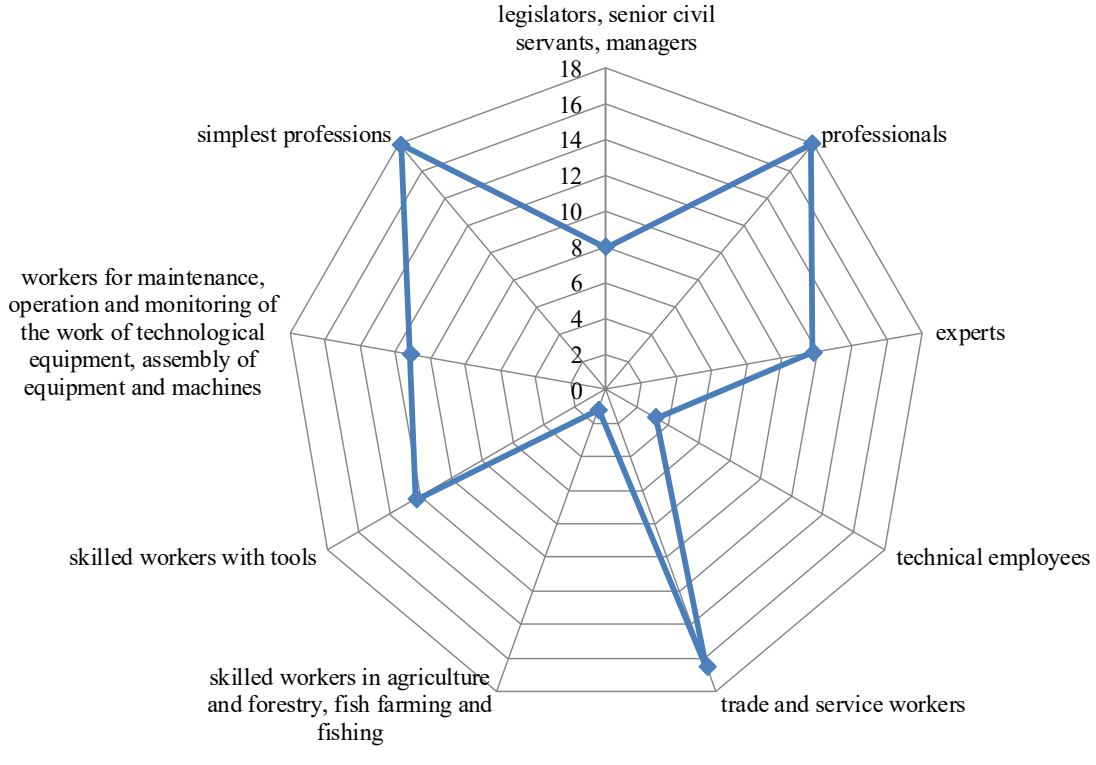

Fig. 1. Chart of the number of employed people aged 15–70 by occupational groups in Ukraine in 2020

Table 2

Number of employed people aged 15–70 years by occupational groups in Ukraine in 2020 [9]

Indexes	Number of persons	Structure, %	Rank
Number of employed people aged 15–70, total	15915.3	100	–
Including by professional groups: legislators, senior civil servants, managers, managers	1269.3	7.98	7
Professionals	2854.2	17.93	1
Experts	1871.3	11.76	5
Technical employees	510.5	3.21	8
Trade and service workers	2633.6	16.55	3
Skilled workers in agriculture and forestry, fish farming and fishing	192.7	1.21	9
Skilled workers with tools	1959.9	12.31	4
Workers for maintenance, operation and monitoring of the work of technological equipment, assembly of equipment and machines	1775.1	11.15	6
The simplest professions	2848.7	17.90	2

Table 3

Ranking of countries by innovation index for 2021

No.	Country	Index
1	Switzerland	65.5
2	Sweden	63.1
3	USA	61.3
4	Great Britain	59.8
5	South Korea	59.3
6	Netherlands	58.6
7	Finland	58.4
8	Singapore	57.8
9	Denmark	57.3
10	Germany	57.3
...	...	...
49	Ukraine	35.6

5. 2. Analysis of indicators of the dynamic series of expenditures on innovations in Ukraine

The results of the analysis of the indicators of the dynamic range of innovation costs in Ukraine for 2010–2020 are given in Table 4.

The analysis of indicators of the dynamic range of innovation costs in Ukraine for 2010–2020 is given in Table 4.

According to Table 4, it can be confirmed that the indicators of the dynamic series of innovation costs in Ukraine for 2012–2020 had a tendency to increase, except for 2012–2014 and 2017. This is confirmed by the fact that there is a constant increase in innovation costs in Ukraine (Table 5, Fig. 2, 3), but in insignificant sizes. This is due to the low level of state legal support (tax system, legislation, lack of state interest and support, etc.).

The calculation of the non-parametric Mann-Whitney U-test equal to 11 allowed us to identify differences in the value of the parameter between the samples. The critical value of the Mann-Whitney U-test for the given number of compared groups is 30, so the differences in the level of the characteristic in the compared groups are statistically significant ($p<0.05$).

To calculate Spearman's rank correlation coefficient, the ranks of Y and factor X (total employed people, thousands of people aged 15–70, and expenditure on innovation (million UAH)) are provided, as shown in Table 6.

Checking the correctness of the matrix is performed on the basis of calculating the checksum by the formula:

$$\sum x_{ij} = \frac{(1+n)\cdot n}{2}, \quad (1)$$

where n is the number of observations

Spearman's rank correlation coefficient is calculated by the formula:

$$p = 1 - 6\cdot\frac{\sum d^2}{n^3 - n}. \quad (2)$$

It was found that the relationship between attribute Y and factor X is weak and inverse ($p=-0.38$).

Table 4

Calculation of indicators of the dynamic series of expenditures on innovation in Ukraine for 2010–2020

Year	Indicator (series level), mln. UAH/mln. USD	Absolute increase (decrease)	Index of clarity, %	Growth indicator (decrease), %	Growth rate (decrease), %	Value of 1 % increase	Interval consolidation method	Moving average method
2010	8045.5/1013.29	–	100.0	–	–	–	11189.7	10077.0
2011	14333.9/1798.48	6288.4	178.2	178.2	78.2	80.4		11286.7
2012	11480.6/1436.87	–2853.3	142.7	80.1	–19.9	143.4	10521.6	11792.4
2013	9562.6/1196.82	–1918.0	118.9	83.3	–16.7	114.9		9579.7
2014	7695.9/647.26	–1866.7	95.7	80.5	–19.5	95.7	10754.8	10357.4
2015	13813.7/632.50	6117.8	171.7	179.5	79.5	77.0		14913.0
2016	23229.5/909.18	9415.8	288.7	168.2	68.2	138.1	16173.5	15386.9
2017	9117.5/342.76	–14112.0	113.3	39.2	–60.8	232.1		14842.4
2018	12180.1/447.80	3062.6	151.4	133.6	33.6	91.1	13200.5	11839.5
2019	14220.9/550.13	2040.8	176.8	116.8	16.8	121.5		13602.6
2020	14406.9/534.38	186.0	179.1	101.3	1.3	143.1	14406.9	14819.1

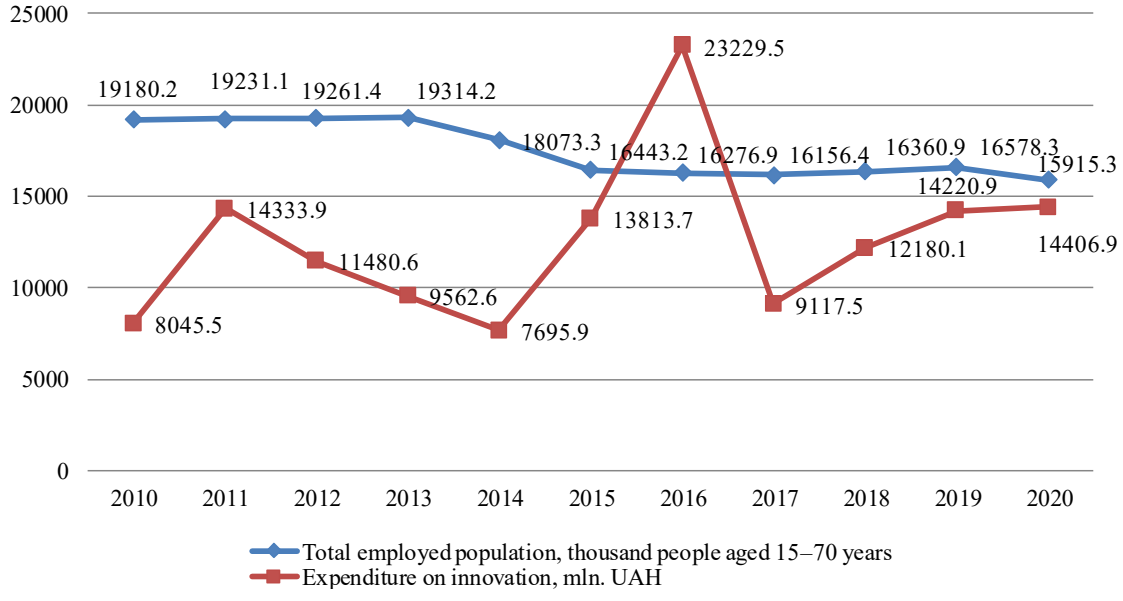

Fig. 2. Dynamics of changes in the employed population (thousand people) and expenditures on innovation (million UAH)

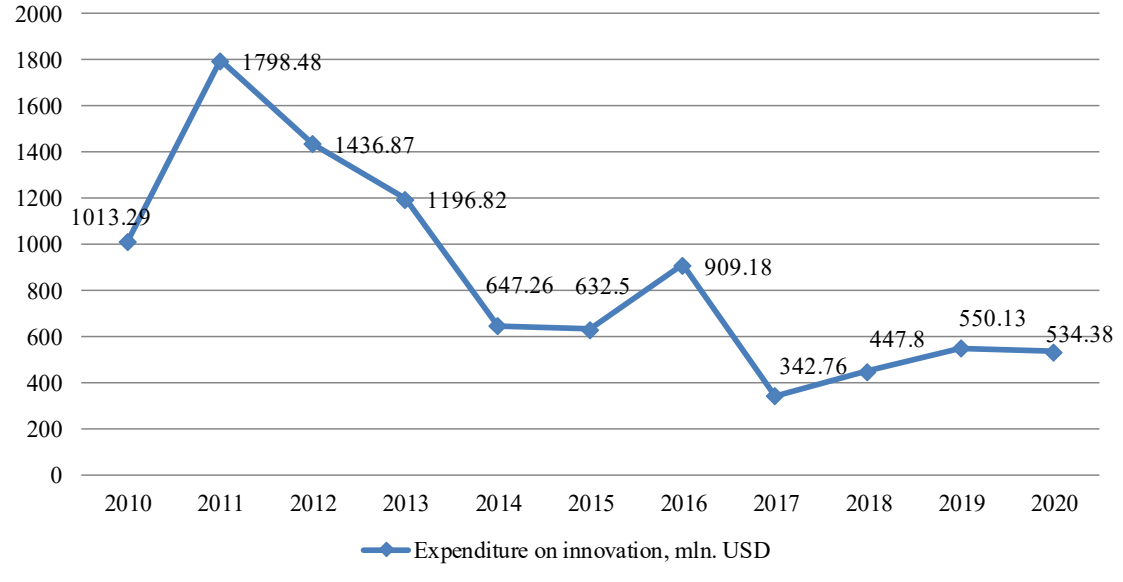

Fig. 3. Dynamics of changes in innovation costs (USD million)

In order to test the null hypothesis that Spearman's general rank correlation coefficient is equal to zero at the level of significance α with the competing hypothesis *Hi* $p \neq 0$, the critical point was calculated:

$$T_{kp} = t(\alpha, k) \cdot \sqrt{\frac{1-p^2}{n-2}}, \quad (3)$$

$t(\alpha, k)$ is the critical point of the two-sided critical region: for $k=n-2=11$ at the significance level $\alpha=0.05$ $t(\alpha/2, k)=2.685$.

If $|p|<T_{kp}$, there is no reason to reject the null hypothesis. The rank correlation between qualitative features is not significant. If $|p|>T_{kp}$, the null hypothesis is rejected. There is a significant rank correlation between the quality features.

Since $T_{kp}>p$, the hypothesis that Spearman's rank correlation coefficient is equal to 0 is accepted. In other words, the rank correlation coefficient is not statistically significant and the rank correlation between the scores on the two tests is insignificant.

Table 5

Employed population in all types of economic activity and expenditures on innovation for 2012–2020 [9]

Year	Total employed population, thousand people aged 15–70 years	Expenditure on innovation, mln. UAH	Expenditure on innovation, mln. USD
2010	19180.2	8045.5	1013.29
2011	19231.1	14333.9	1798.48
2012	19261.4	11480.6	1436.87
2013	19314.2	9562.6	1196.82
2014	18073.3	7695.9	647.26
2015	16443.2	13813.7	632.50
2016	16276.9	23229.5	909.18
2017	16156.4	9117.5	342.76
2018	16360.9	12180.1	447.80
2019	16578.3	14220.9	550.13
2020	15915.3	14406.9	534.38

Table 6

Rank matrix

X	Y	rank X, d_x	rank Y, d_y	$(d_x-d_y)^2$
19180.2	8045.5	8	2	36
19231.1	14333.9	9	9	0
19261.4	11480.6	10	5	25
19314.2	9562.6	11	4	49
18073.3	7695.9	7	1	36
16443.2	13813.7	5	7	4
16276.9	23229.5	3	11	64
16156.4	9117.5	2	3	1
16360.9	12180.1	4	6	4
16578.3	14220.9	6	8	4
15915.3	14406.9	1	10	81

Our analysis reveals that in Ukraine there are significant problems of the relationship between the change in the level of the employed people and the costs of innovation for 2010–2020, which negatively affects the development of the socio-economic environment.

5. 3. Development of a map of state-legal support for dynamic information development of socio-economic environment

For the effective development of the socio-economic environment, it is necessary to form a system of state and legal support with the use of information resources.

In work [7] it was stated: "Civilization is information based on the information matrix, which is built with the resonant frequency of the "golden section". This allows humanity to organize information flows in a particular way, thus creating knowledge over a period of time to further develop technology. All this provides access to new sources of information, mass consumption of energy, which are the key to the survival of humanity and the creation of a better quality of life for it".

The expansion of the scope of the use of new information technologies under the conditions of the formation of a modern socio-economic environment is characterized by the determination of a whole set of previously unknown problems (unreliability of information, information security, violation of rights and laws, etc.). At the same time, the expansion and fundamentalization of the status of information resources in the process of development of the socio-economic environment makes it possible to take a new look at a number of problems regarding their state and legal support. A special place among them is the problem of sustainable development, which is impossible without a thorough understanding of the role of information in the evolutionary processes taking place in economic, technological, production systems, and in human society [1–5].

Information civilization, which replaces the industrial society, shows the specificity of the growing importance of dynamic information development of the socio-economic environment [7–10].

A person's right to information is one of the fundamental rights, so there must be a state institution that will regulate and protect these rights.

Special attention should be paid to the development of information civilization proportional to the level of development of technological revolutions affecting the state of the socio-economic environment. With the development of civilization, the era of revolutionary discoveries, primarily in the field of information technologies, should turn into a qualitatively new era of innovative discoveries (Fig. 4).

The basis of the formation of the map of the state-legal support for the dynamic informational development of the socio-economic environment is a deep meaning, which consists of a set of vector directions that give rise to the progressive development of society. For the active development of technological determination, it is necessary to take into account mental components that will be effectively transformed when forming the expediency of using information technologies and methods, which will lead to positive changes in society.

The process of updating information resources has both positive directions (introduction of innovative technologies and developments) and negative directions (transfer of communication in online mode, lack of "live" socio-emotional communication).

Globalization processes can lead to a change in statehood, establishing permanent control and forming the basis for information transparency. All this will be the basis for the formation of dynamic informational development of the socio-economic environment.

The leading responsibility for the development of innovative technologies should be given to the state. For this, it is necessary to form state legal support based on the use of innovative technologies (Internet, genetic engineering, artificial intelligence, atomic energy, etc.), which will contribute to the development of the population, which, in turn, will ensure the development of Ukraine in scientific, industrial, technological, and other directions.

The level of development of the knowledge component, the definition of rules and principles, the sufficiency of financial opportunities and other resources have a significant influence on the formation of the map of state and legal provision of dynamic informational development of the socio-economic environment.

Taking into account all directions of state and legal provision of dynamic informational development of the socio-economic environment will lead to positive consequences (social, economic, ecological, political, and industrial).

The map of state-legal support for the dynamic informational development of the socio-economic environment in the modern sense includes the entire set of knowledge and information necessary to achieve a certain goal. Knowledge of the rules and principles of process management, as well as the entire set of socio-economic, ecological, and political consequences of the implementation of this map in a specific environment, includes the consequences of the use of manufactured products and services.

A condition for state-legal provision of dynamic informational development of the socio-economic environment is an increase in the status of the human personality, the emergence of economic independence. Modern society is the source of the legitimacy of the current political forces. Contacts of the state in the form of authorized bodies and officials with the non-state sector are a wide source of information about its state. The democratic regime provides for the close interaction of the state and society as the basis of political and economic stability in the country, and under certain historical circumstances (crises, wars) and state support for the informational development of the socio-economic environment.

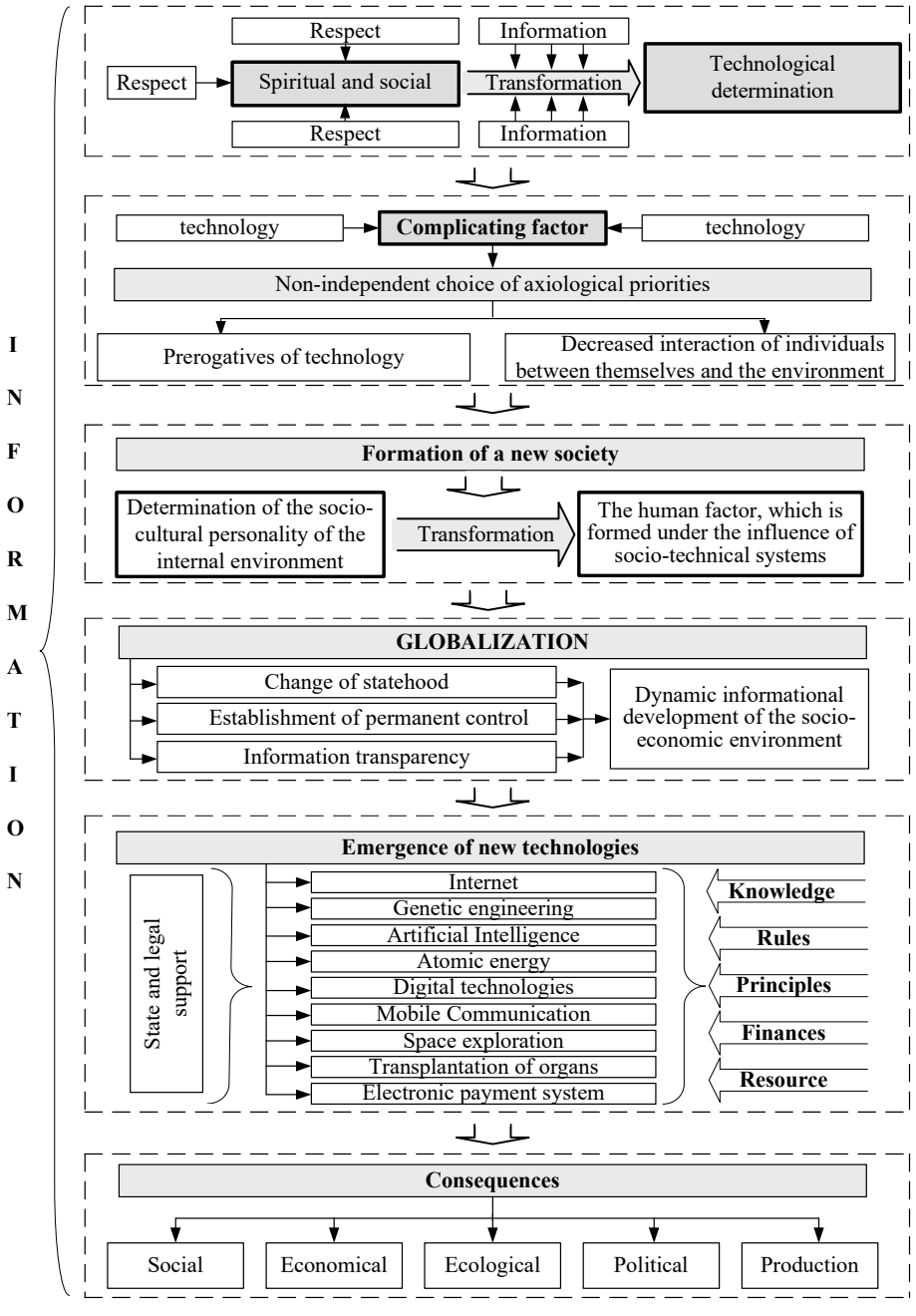

Fig. 4. Map of state-legal support of dynamic information development of socio-economic environment

6. Discussion of results of the study on determining the regularity of state-legal support for the dynamic information development of the socio-economic environment

The results of the research on determining the regularity of the state-legal provision of dynamic informational development of the socio-economic environment indicate that in modern society private interest prevails, which should develop the social and economic activity of the environment. Awareness of the rights and interests of the population, business entities and the state will contribute to the emergence of rivalry – the driving forces of society's development. The study analyzed the indicators of the dynamic range of the employed people in all types of economic activity in Ukraine for 2012–2020. The results of the analysis show that the number of the employed people from 15 to 70 years of age in Ukraine had a tendency to increase only in 2011–2013 and in 2018–2019. This confirms the fact that there is no constant increase in the working-age population in Ukraine, this is due to demographic problems, constant emigration of the population (especially since 2014), etc.

A more detailed analysis of the number of employed people aged 15–70 by professional groups in Ukraine in 2020 was conducted. According to the results of the analysis, which are given in Table 2, it can be asserted that most of the working population is engaged in the following professional groups: professionals; the simplest professions; trade and service workers. This confirms the fact that the labor potential of Ukraine is not fully involved in the active development of the information development of the socio-economic environment. This is primarily due to the low level of salaries of scientists, the decline in the prestige of these professions, and the low level of support from state and legal support. Therefore, Ukraine lags behind world leaders in innovation and technical development according to the Global Innovation Index, where Ukraine ranks 49th.

The specifics of the study are the calculation of the correlation dependence between the level of the employed people in all types of economic activity and the costs of innovation for 2012–2020. The results of the calculations show that the relationship between characteristic Y and factor X (employed people, thousands of people aged 15–70 years and spending on innovations, million hryvnias) is weak and inverse.

The value of Spearman's rank correlation coefficient and according to Student's table, the rank correlation coefficient is statistically not significant and the rank correlation between the scores on the two tests is insignificant.

This indicates that in Ukraine there are significant problems of the relationship between the change in the level of the employed people and the costs of innovation for 2010–2020, which has a negative impact on the development of the socio-economic environment.

The analysis of the results (Tables 4–6) reveals that it is necessary to regulate innovative development at the state level, with the mandatory involvement of business entities and educational institutions. This will provide an opportunity to actively develop the socio-economic environment, increase the state's level of development and increase its ratings in the Global Innovation Index.

On the basis of our analytical research, a map of state-legal provision of dynamic information development of the socio-economic environment was developed, which includes the entire set of knowledge and information necessary to achieve a certain goal. Knowledge of the rules and principles of process management, as well as the entire set of socio-economic, ecological and political consequences of the implementation of this map in a specific environment, includes the consequences of the use of manufactured products and services.

Given the fact that minimizing the spread of social vulnerability in the regions of Ukraine requires the formation of an effective mechanism of state policy to ensure the social resilience of the territory [7], the obtained results are important. This is justified by the fact that they are aimed at the formation of state legal support, which is aimed at creating the most favorable conditions for the effective development of society (freedom of activity not prohibited by law, a favorable tax system, financial and organizational support programs, etc.).

In paper [4], the authors proposed a simple and accessible tool for continuous reporting on the size of public administration for the purpose of monitoring costs. Taking into account these aspects, the results of our research confirm the expediency of the monitoring process, which is used to create an incentive program for representatives of regional politics. The monitoring toolkit proposed in the study can be effectively used in the process of forming sustainable socio-economic development of society. A mandatory framework condition in the formation of state legal support is taking into account the social status, income level of the population and socio-cultural personalities that influence the level of development of society as a whole.

The peculiarities of our results are that the essence of the dynamic informational development of the socio-economic environment lies in the variety of forms of ownership. Accordingly, it is guaranteed by legislative acts that economic independence is granted to individual owners in the form of legal guarantees of equal recognition and protection of their property rights.

The further development of the research consists in the formation of a scientific and practical basis for the development of the socio-economic environment in Ukraine due to the implementation of radical changes with the use of reliable information. These vector directions should be aimed at supporting the priorities of the rights and freedoms of the population, in accordance with the requirements of the European Union, creating favorable organizational-legal and material-motivational conditions for their intellectual development.

7. Conclusions

1. The indicators of the dynamic range of the employed people in all types of economic activity in Ukraine for 2012–2020 were analyzed. It was determined that the number of the employed people from 15 to 70 years old in Ukraine had a tendency to increase only in 2011–2013 and in 2018–2019. This confirms the fact that there is no permanent increase in the working population in Ukraine, this is due to demographic problems, permanent emigration of the population (especially since 2014), etc.

The results of the analysis of the number of the employed people aged 15–70 by professional groups indicate that the majority of the working population is engaged in the following groups: professionals; the simplest professions; trade and service workers. This confirms the fact that the labor potential of Ukraine is not fully involved in the active development of the information development of the socio-economic environment. These factors are influenced by the low level of motivation of scientific and intellectual workers, primarily due to the low level of salaries of scientists, the decline in the prestige of these professions, and the low level of support from state and legal support.

2. The results of the analysis of indicators of the dynamic series of innovation costs in Ukraine confirm that the indicators of the dynamic series of innovation costs in Ukraine for 2012–2020 had a tendency to increase, except for 2012–2014 and 2017. This confirms the fact that in Ukraine there is a constant increase in costs for innovation, but in small amounts. This is due to the low level of state legal support (tax system, legislation, lack of state interest and support, etc.).

Our analysis shows that in Ukraine there are significant problems regarding the relationship between the change in the level of the employed people and the costs of innovation for 2010–2020, which negatively affects the development of the socio-economic environment.

3. On the basis of our research, a map of state-legal provision of dynamic informational development of the socio-economic environment is proposed, which is based on a set of vector directions that give rise to the progressive development of society. For the active development of technological determination, it is advisable to take into account mental components that will be effectively transformed when using current information technologies and methods, which will lead to positive changes in society.

It has been proven that the process of updating information resources has both positive directions (introduction of innovative technologies and developments) and negative directions (transfer of communication in online mode, lack of "live" socio-emotional communication).

It was determined in the study that the main responsibility for the development of innovative technologies should be given to the state. To this end, it is necessary to form state legal support based on the use of innovative technologies (Internet, genetic engineering, artificial intelligence, atomic energy, etc.), which will contribute to the development of the population, which, in turn, will ensure the development of the intellectual potential of Ukraine in the scientific, industrial, technological, and in other directions.

The level of development of the knowledge component, the definition of rules and principles, the sufficiency of financial opportunities and other resources have a significant influence on the formation of the map of state and

legal provision of dynamic informational development of the socio-economic environment.

Taking into account all areas of state-legal provision of dynamic information development and using the experience of international practices will lead to positive consequences for the socio-economic environment in Ukraine.

Conflicts of interest

The authors declare that they have no conflicts of interest in relation to the current study, including financial, personal, authorship, or any other, that could affect the study and the results reported in this paper.

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Data availability

The data will be provided upon reasonable request.

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