International Journal of Engineering & Technology, 7 (4.8) (2018) 364-369

International Journal of Engineering & Technology

Website:www.sciencepubco.com/index.php/IJET

Research paper



The Information Society and Informatization Development Problems of Economy

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Abstract

The article is devoted to the problem analysis of the information society development. The article explores the influence of the information component and general informatization processes on the national economy, its branches and individual enterprises, as well as strategic priorities of its development. Scientific and pedagogical literature was analyzed by the authors, on the basis of which it was concluded that the use of modern information technologies and software products developed on their basis is an urgent problem, the solution of which allows us to determine the promising directions of development in the economy and other areas.
Analysis of the latest publications has shown that the countries with the developed information industry are the closest of all to the information society and the formation of the strategic foundations of the information economy, they develop and implement information public policy bringing investment and support of innovations in the information industry, in the development of computer systems and telecommunications and general informatization. The aim of the article is to study the problems of information society development, ways to solve them and the relationship with the processes of economy informatization. According to the purpose, the tasks were specified and fulfilled: the world experience in the information economy development was analyzed; the tasks of all states information programs that have embarked on the way of the society informatization were defined; the directions of the informatization influence (or information component) on the national economy were determined; the information about society features was systematized; the basic informatization principles were investigated. Nowadays, informatization should be aimed at increasing the efficiency of using the country's social, economic, scientific and technical potential, implementing mechanisms for the development of civilization in general, and being oriented towards meeting the information needs of all members of society.

Keywords: *development, economy informatization, information society, information system, information technology.*

1. Introduction

The category "development" is of particular importance due to rapid changes in the present society. It has a fairly broad interpretation and is often used in appropriate combinations: economic, socio-economic development, economic development of Ukraine (or another country), certain processes and the like. Each version of the use of this category has scientific basis of any progressive change - economic, technical, technological, informational, humanitarian, social, culturological and so on. The economic sphere priority of the term is determined in the framework of this study, due to the special importance of the national economy and the problems of its growth in the context of the global information space spread [4, 6].
Development always has directedness, a goal or a system of strategic and tactical goals. If this orientation is positive, then we talk about progress, if negative - about regression, or about degradation. In other words, the economic development always assumes a certain goal or several purposes. The national economy development is a multidimensional process and it is usually viewed from the view point of the totality of various social, economic, technological, informational goals. Even if it is only economic development, it is usually studied in conjunction with the social one and includes: the growth of production and income; changes in the institutional, social and society administrative structures, in the public consciousness, in traditions and habits, and the like.
Such understanding of the term development fundamentally distinguishes it from the processes of mechanical growth or structural complications. For instance, the development of one-sided saturation of enterprises and industries with computers and other technical means and information products cannot be attributed to example. Although, there is such a view in the economic and technical literature today, when saturation with technical and technological means, which in practice have quite high prices (which affects the valuation of fixed assets and the cost of production and services), is already estimated as a progressive process [3, 10, 11, 12]. The authors believe that this is not a complete answer to the question of the positive impact of the information component and general informatization processes on the national economy, its industries and individual enterprises, and strategic development priorities.
Analysis of scientific and educational literature allows us to conclude that use of modern information technology and software products developed on their basis is an urgent problem, the solution of which allows us to determine the promising directions of development in the economy and other areas.

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2. Information societies potential and its development

Modern processes of increasing use of information and modern information technologies as a strategic resource characterize the beginning of a new era, which is full-scale informatization. This in many respects predetermines the formation and development of a new system - the information society, within the framework of which elements of market management with all components of the internal regulatory mechanism and external state regulatory policy will be taken into account. Within the framework of scientific research, new criteria for evaluating positive and negative informatization processes should be formed, which will significantly reduce crisis and pre-crisis conditions in this area and form the optimal structure of the needs of the national economy.

According to the information society development needs, scientists form the theoretical and methodological base of new research areas on information activities, information market, information, commodity characteristics of information products and services, etc. At its core, informatization is a common and inevitable process of development of human civilization, a period of mastering a new information picture of the world, an awareness of the unity of the laws of functioning, the creation of an industry for the production and processing of information. Modern information processing systems and transmission form a kind of peculiar circulatory system that connects individual blocks of information into a single whole [8, 9, 11].

According to the authors, this process has a very wide interpretation. Informatization is the systemic process introducing the achievements of informatics methods and new information technologies into the social life, scientific, technical, socio-economic, technological, socio-cultural and other institutions of the state, with the aim of increasing their effectiveness, democratization, as well as humanitarization, harmonization and humanization of society. Informatization is a sufficiently broad and rapid process of introducing new technologies in public life, and has certain features and characteristics within the implementation framework in the national economy. So, today it is impossible to implement the latest technologies, innovations, scientific and technological progress without the information component [1, 2, 6, 9].

Modern progress in the economic, social, labor, cultural and technological development of mankind is determined by a number of mutually conditioned processes. The most important of them, which are closely connected with the information component and informatization, are listed below.

Firstly, it is the information component of scientific and technological progress which provides quantitative and qualitative growth of information resources.

Secondly, it is the activation of informatization processes of the market economy as the most powerful economic development mechanism, expressed in the internationalization, globalization and full informatization of all markets (labor, finance, real estate, means of production and consumer goods, etc.).

Thirdly, it is the continuous development and improvement of information technologies that form the information transparency of the entire world space, and give a concrete advantage in the development of all components of the national economy for developers of the so-called "meta-technologies".

Fourthly, an important socio-economic phenomenon is the information transparency of any economic activity, first of all at the entrepreneurial level.

Fifthly, information transparency forms and adapts new standards of culture - information.

The active promotion of the processes of integrated informatization at the level of the national economy (households, enterprises, industries, government agencies and other business entities) accelerates the development of the information society [9, 10, 11, 12].

However, informatization should not be the goal of national development. On the author's thought, this should be the formation of the modern information potential and the national economy.

The information potential of a society in a broad sense is an accumulated information resource that will form new strategic factors of the possibility of development. Information potential of the society in the narrow sense is an information resource which is activated, calculated and in many respects put into operation.

Thus, the information potential of a society is an informational resource of a society in unity with means, methods and conditions that allow to adapt, activate and effectively use it. Determination of the information potential, its evaluation and diagnostics provide a real opportunity to assess advantages and disadvantages, which must be taken into account and eliminated within the tactical and strategic planning of information processes.

This common set should include not only technical means of informatization, but also other factors. This is, for example, social tools, methods and structures that promote the upbringing and development of information relations, the formation of an information culture, its intellectual potential. So, the unity of the processes of computerization, socialization and intellectualization is necessary.

Within the framework of society informatization it is important to organize research of practical nature (preparation of methodology, projects and recommendations) to increase the intellectual level of certain social subsystems. We are talking about the development of the modern information society and its inalienable foundation - the national intellectual environment.

The systematized characteristic features of the information society are as follows: they form the priority of information in comparison with other resources; the main form of development is the information economy; the basis of social activity is the automated generation, storage, processing and use of knowledge with the help of the latest information methods and technology; access to active promotion of information processes; there is the problem of information crisis, that is, there is a contradiction between information diversity and information needs.

It should be emphasized that not only positive moments are taking place in the national cycle of information processes, but dangerous tendencies are also determined: the mass media have an increasing influence on economic development; information technologies have no borders and boundaries, it is possible to destroy the privacy of people and organizations; there is a problem of selecting qualitative and reliable information; there are information risks and information threats in economic activity; many workers find it difficult to adapt to the rapid development of the information society environment; there is a misunderstanding with the newest standards of information culture; a gap is formed between the "information elite" (people or organizations engaged in the development of information technology) and consumers [8, 10, 11].

The closest of all on the way to the information society and the formation of the strategic foundations of the information economy are the countries with the developed information industry, including England, Germany, United States, Japan, and Western European countries. They develop and implement information public policy, first of all they invest into and support innovations in the information industry, in the development of computer systems and telecommunications and general informatization.

Analyzing the world experience in the development of the information economy, it can be determined that the development of mechanisms for the formation of the information society is in the center of attention of many world countries as a necessary condition for the transition to a new, higher degree of social development [2, 6, 9, 12]. Thus, the key role in the development of the information component and the activation and optimization of the processes of informatization is determined.

3. The economy informatization problem and its main development directions

The information program main tasks of all states that have embarked on the way to the society informatization are: to define the role and tasks of the government and private enterprises in the process of the information society's impetus; improvement of the legal framework, legal support and information processes protection; formation of bases of the account of the state information resources; optimization of computers, technology, telecommunications and other means of communication; implementation of a policy to increase the general educational level of the population in the field of information technology; development of mechanisms for pricing and investment of information processes and acceleration of information infrastructure development on this basis; solution of the issues of simplification of the international exchange of information through the use of all available means (conferences, exhibitions, exchange of specialists, etc.) [7, 9, 10].

The informatization processes are carried out along several global directions in Ukraine and include:

1.The gradual combination of national information flows and infrastructure, its services with the global world information system.

2.Formation of the national market space and its information market with the allocation of demand and supply flows to information and fixed assets which accept, convert and preserve them.

3.The emergence of the new national information consciousness which conforms to the subjects of market economy and the information society. This is the human potential of Ukraine using information flows in its active personal, industrial and non-productive activities (commercial and non-commercial).

4.The activation of informatization processes within the national economy. Development of concepts, plans and programs for informatization of industries and individual enterprises. But this work is conducted not on the basis of a single national approach, but is of a disjointed nature [1, 2, 11].

But, despite the important decisions taken, the technical level and the scale of information technologies in Ukraine remain significantly lower in comparison with the European indicators. Now it is necessary to determine directions of the influence of informatization (or information component) on the national economy. According to the authors, it is expressed in the following.

Firstly, informatization includes information production, information products and services, which are scientific in nature. Therefore, their quality and competitiveness in the market depend very heavily on the level of technological development of the country, in particular on the development level and new information technologies use, which, in turn, is determined by the development level of science, production, education, culture.

Secondly, informatization activates the formation of the information market and the corresponding information economy, which today are the most important factors in the development of the economic complex sectors (for example, production sector, coal industry, construction industry). This accelerator and the main tool in the development of science and education is constantly stimulating and supporting the development by all means.

Thirdly, the high dynamism of changing models or even entire generations of information products forms all other sectors of economic development. There is a need within the national economy to ensure high mobility of the organization of production, the possibility of its operational restructuring to produce new products. Realization of this vital problem is possible only thanks to the wide application of new technology, the use of specialists.

Fourthly, information products and information technologies in their functional capabilities form a real opportunity for dual application, both for the needs of enterprises and the industry as a whole and within the framework of information transparency of attracting national and foreign investors (information technologies allow to determine the level of development and adapt the remote control objects in real time). Therefore, the development of the information economy at the industry and enterprise level is closely linked to the development of national investment attractiveness. Therefore, the information economy development at the industry and enterprise level is closely linked to the national investment attractiveness development.

Fifthly, creation of conditions and means for production, accumulation and use of knowledge is provided. Thus, prerequisites arise for saving other types of resources that guarantee the optimal development of the national economy (raw materials, energy, material and human resources). Therefore, informatization becomes an important factor in overcoming the ecological crisis and the transition of civilization to a model of sustainable and secure national development.

Sixthly, a new structure of employment of the population is formed; the development of new forms of individual work and creativity is stimulated. New types of products and services that radically change human location are being created and are being widely disseminated; new opportunities for the development of an individual and for the formation of a new information culture of society are being created. The information culture of a society is its ability to effectively use information resources and means of information communication that are at the disposal of this society, and also the ability to apply advanced achievements in the field of development of information and information technologies to achieve this goal.

Informatization has a high consumer value (which consists of many elements): it helps to create goods and services of higher quality and in a larger volume. It forms a new system of relations both in the national economy and in society as a whole; the strategy of its development affects economy effectiveness, the social sphere, the processes of scientific and technological progress.

The information industry is one of the most efficient sectors of the economy for investing today in Ukraine. The society informatization, the rapid information technology development and new information technologies, the growth of the needs of society in various information services and other changes have become the reasons for the allocation of the information market.

Proceeding from the goals and problems of the national economy informatization, the main directions of its development should be as follows:

- carrying out complex scientific researches of computer science and information;
- study and assessment of the current state of the informatization process of the national economy and its components (diagnosis, monitoring, expert studies, formation of plans and forecasts);
- study and dissemination of the world and domestic industry experience of informatization;
- study and dissemination of world and domestic positive experience of informatization at the level of individual enterprises;
- creation and development of the material and technical basis of informatization;
- improvement of existing information technologies, development and application of new information technologies;
- software production distribution on an industrial basis, the software industry creation;
- activation and state support of information infrastructure development;
- activation and state support of the information processing industry;
- training and retraining of personnel providing procedures for conducting informatization, further servicing;
- preparation, introduction and adjustment of legal and economic norms;
- participation in international cooperation and division of labor in the field of information formatting.

This is an incomplete but obligatory list of directions that should be replenished, diagnosed, discussed and defined in an independ-

ent direction, and in the future stimulate the development of the corresponding state policy.

4. The informatization processes complexity and interdependence

The main principles of informatization are:
- subordination to the common goals of social, economic, scientific and technological development;
- the conformity of scientific principles with the methods and requirements of the market economy improvement;
- profitability for society, payback and profitability;
- social and culturological direction and significance;
- orientation on economic and social management methods;
- competitive nature of implementation ways, sources and forms of financing;
- self-development and the process activation;
- compatibility with the world counterparts;
- development and dissemination of information resources integration;
- the formation of the new level of labor intellectualization.

It is also necessary to identify and highlight that the creation and development of the information processing industry is an important direction, since it is this sector that uses modern means and technologies to produce the final product, complement and support the information environment, and provide access to it. Without the rapid development of information processing on an industrial basis, it is impossible to achieve the ultimate goal of the process [8, 10, 11].

Analysis of the world process of informatization development allows, in terms of the achievement degree of the final and intermediate goal, to identify the development of informatization on the corresponding stages:

creation of economic, technical, social and cultural conditions for the demand formation of the population and enterprises;

initial satisfaction of relevant information needs.

The information infrastructure formation should be viewed in accordance with the world standards and development and the main information needs of the national and global economies.

The authors believe that the society informatization is wider than the economy informatization. The main areas of the society informatization, in the first place, include: socio-cultural sphere, material and non-material production and management.

The socio-cultural sphere is the main object of society informatization. Informatization of this sphere is aimed at the formation and satisfaction of the population information needs, information support of social and cultural processes, improving the life of all society members and improving the quality of services provided, and in general, at the fundamental improvement of social activities and human life, as well as public administration informatization.

The main purpose of informatization of the material production sphere is information support of the social production branches, technical re-equipment through the introduction of effective automated means of labor, the integrated automation of technological and production processes based on them, the modern achievements introduction in scientific and technical progress, the creation of flexible rebuilt modules, sites and industries. Informatization should cover all stages of the life cycle of the products being created: research - design - production - sales and operation.

The management sphere informatization plays a special role, since it not only increases the effectiveness of management at all levels, but also allows to increase the effectiveness of purposeful human activity in other spheres, such as society informatization.

Within the framework of the informatization processes development, its content, or the definition of components, and the formation of both general regulation and the influence on more strategic and effective elements is gaining more and more importance.

The definition of the national economy informatization components is the author's view and first of all, forms an understanding of the complexity and multivariate development; secondly, emphasizes the relationship between the elements; thirdly, determines the characteristics and problems inherent in the system as a whole, and fourthly, has a significant synergistic effect [5, 11].

According to the authors, the most influential components in the development of informatization process are as follows: information, market, eco, social, technical, technological and labor component. This grouping is not mandatory, it is rather conditional, and these elements can be changed. For example, they can be referred to as the social and labor component, technical and technological and so on.

Under a market economy in Ukraine, information acts as one of the main resources, this is primarily due to the following:

any kind of activity begins with the set accumulation of specific knowledge and systematized experience;

formalization of official economic activity presupposes registration relations with the state and local authorities, expressed in information and documentary flows;

work with suppliers, consumers, financial institutions is based on the collection, accumulation, processing and continuous improvement of business information

the internal environment of enterprises and organizations is built on information and its active development and use;

market relations presuppose the development of marketing, promotional activities, dissemination of the principles of diagnosis, public relations [9, 10].

The information component is the informatization processes foundation, the connecting link between all the informatization process components.

The national economy informatization and solutions to the problems generated by this process can be implemented in various ways:

1. Spontaneous self-organization of the informatization process. This path is typical for social processes associated with changing living conditions and adapting society to new conditions. Such adaptation requires organizational restructuring in society, affecting its material and moral foundations. Inclusion of spontaneous regulation mechanisms makes it possible to smooth out the acuity of such changes perception, but makes the process itself longer and, as a rule, leads to a significant overexpenditure of resources.
2. Centralized management of the informatization process. This way cannot really be realized, because this process is so complex that it is practically unmanageable.
3. Scientifically justified informatization, directed and regulated. In this case, the self-development of the process proceeds under the conditions of the system of constraints and incentives that determine the boundaries of the process existence and the desired directions of its development. This allows, while maintaining all the advantages of self-organization and self-development of the process, to shorten its time and avoid unnecessary costs [8, 10, 11].

Based on the informatization goals, the informatization process management should be oriented towards its ultimate goal - the creation of information support system for the tasks of social, economic, scientific and technological development, in particular, to increase the automation of production and administrative and managerial activities.

The complexity and interdependence of informatization processes require the organization of information management at all levels.

5. The main directions of informatization processes development

The main informatization directions are policy development, organizational and legal support, the national infrastructure formation in this area; the inclusion in this area of strategic of modern strategic development of statehood, security and defense, the

social processes, economic, scientific and technological development, the economy priority sectors [8, 10].

Thus, informatization should be aimed at increasing the efficiency of using the country's social, economic, scientific and technical potential, at the implementation of mechanisms for the development of civilization in general, and be oriented towards meeting the information needs of all members of society.

Creation and development of the information processing industry is a crucial direction in informatization, because it is precisely this industry that, using modern means and technologies, produces the final product - information, replenishes and supports the information fund, provides access to it and its effective use. Without the transfer of the processing of information to the industrial base, it is impossible to achieve the ultimate goal of informatization.

Formation and use of information resources should be considered as the most important problem of single information space of the market economy and as one of the main factors of effective business activity in the information market. The latter can be defined as activities aimed at satisfying the information needs of users through the rational organization and effective use of information resources as a result of economic, legal, organizational relations that are established between business entities - information providers and its users in the information market. Entrepreneurial activity of the German market implies the organization of information flows between all market participants. It is understood that information flows should provide:

diagnosing and monitoring the information market;

all market subjects actions synchronization;

conducting a complex evaluation of processes occurring on the market;

formation of a database for forecasting individual processes;

fixing of irregularities arising during the implementation of planned activities;

ensuring equal access of all regions of the state to strategic information resources [1, 10, 11].

Based on the use of all the accumulated information and a more dynamic organization of information interaction, the information market will significantly improve the effectiveness of the business structures by increasing the level of information support for their activities. Now the world community pays special attention to the institution of the state. Ukraine, which carries out the transition from the administrative-command system to market relations, should simultaneously turn to covering the priority direction - state construction. The question of the role of the state in the market economy, the extent of its intervention in economic processes and phenomena is still urgent. Also, the first national concept of informatization has been developed. A package of documents on the legal regulation of information activities and elements ensuring its development is being formed and approved. Information piracy and hacking, which cause significant damage to the national economy and the image of the country in the world information system, is gaining momentum [8, 10, 11].

Higher and secondary educational institutions expand the training of specialists in the field of information activities. Scientific and popular works devoted to informatization, information activity, information resources, information culture, etc. are published. The following new direction is formed in the training of specialists - informatics, public relations managers, web and system administrators, and the like. The information sector includes all those who produce, process and disseminate information as the main occupation, and create and maintain the functioning of the information infrastructure. The sector covers a large and extremely heterogeneous composition of professions. Along with this, a massive outflow of IT specialists continues [5, 8, 10, 11].

Informatization of production and services is not limited to the displacement of labor on a large scale. It leads to a complete reorganization of production processes and the integration of its various stages. The main product is the flow of information used primarily to improve the efficiency of the production process as a whole. At the same time, the latter is not always realized in increasing the volume of production, in connection with which the problems of labor productivity and its measurement arise in a new way.

In modern economic development, scientific and technical knowledge acquires the character of a strategic resource of paramount importance, and electronic computers and the latest means of communication make it possible to multiply and distribute them on an unprecedented scale. The latter applies to any information in the field of culture and art. The level of awareness and education of the population is increasing, person to person and person to machine communication is growing. The new role of science, knowledge, information, which is a common property, means an important qualitative shift in the structure of the productive forces, which causes great progress.

The informatization processes development within the framework of the above periods has shaped the direction of the global influence of the information component on the national economy. On the author's thought, this is expressed in the following.

Firstly, informatization introduces information production, information products and services, which are largely science-intensive. Their quality and competitiveness in the market (internal and external) essentially depend on the level of technological development of the country, in particular, on the level of development and use of new information technologies, which, in turn, is determined by the level of development of science, education, culture, production.

Secondly, informatization activates the formation of the information market, which today is the most important factor in the development of all branches of the economic complex (for example, transport, production sector, coal industry, construction industry). This main tool for the development of science and education constantly stimulates and supports the development with increasingly new means.

Thirdly, the highly dynamic component of changing models or even entire generations of information products forms all the other sectors of economic development in this part. There is a need within the national economy to ensure high mobility of the organization of production, the possibility of its operational restructuring to produce new products. Realization of this urgent problem is possible only thanks to the wide application of new information technology and innovative technologies.

Fourthly, information products and information technologies in their functional capabilities make their double application possible, both for the needs of enterprises and industries in general, and within the information transparency of national and foreign investors (information technologies make it possible at a distance to determine the level of development and adapt management objects in real time). Therefore, the development of the information economy at the industry and enterprise level is closely linked to the development of national investment attractiveness.

Fifthly, creation of conditions and factors of production, accumulation and effective introduction of knowledge is provided. Thus, prerequisites are created for saving other types of resources that ensure the development of the national state complex (raw materials, energy, material and people's resources). Informatization is also becoming an important factor in overcoming the environmental crisis and moving to a model of sustainable and safe development.

Sixthly, another structure of employment of the population is created, the development of new forms of individual work and creativity is stimulated. New types of products and services that radically change the human mission in the process of labor, new opportunities for the development of the person, the formation of a new information culture of the society are emerging. The information culture of a society is its ability to use information resources and information communication tools, which are at the disposal of this society.

An equally important social, economic phenomenon is the information transparency of any human activity, primarily at the level

of entrepreneurial activity, and then - at the state and interstate level.
Seventhly, information transparency forms and adapts new standards of culture - information.

6. Conclusions

So the key tasks in the system of managing the processes of informatization of the national economy are the following: the formation of the foundations of the information policy, corresponding, first of all, to the strategic interests of the national economy; development of a national development strategy; management of processes of informatization development; development and implementation of control mechanisms; conducting an effective investment and institutional policy; creation of information infrastructure; support of knowledge-intensive industries and relevant markets (information, financial, etc.); stimulating and regulating the development of scientific and technological progress and expanding its information component; activation of scientific, technical, economic, social, organizational, legal and other conditions for effective and integrated development and filling the budget with financial resources for the introduction of innovative plans and programs.
The process of development of informatization of the national economy is a purposeful system that has several groups of basic characteristics. First of all, this is its organizational structure. It should be structured and include an appropriate management structure, mechanisms, tools and methodologies that will ensure the implementation of certain priorities and goals.
The priorities of social development are the construction of an open, informative transparent national economy with developed market relations.

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