

THE GLOBAL CHANGES: CREATING KNOWLEDGE-BASED SOCIETY AND KNOWLEDGE ECONOMY

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Abstract. *The processes of creating knowledge-based society and knowledge economy in the context of global changes are described.*

A variety of global changes and the main processes of creating knowledge-based society and knowledge economy in the context of globalization are identified. The processes of creating knowledge-based society and knowledge economy are defined as the processes belonging to the category of global transformation processes; it means that the complex interaction between the general processes of global transformations and the processes of creating knowledge-based society and knowledge economy are a very important factor of positive changes in social life in the context of globalization. A complex analysis and the multidimensional evaluation of the processes of global transformations and of creating knowledge-based society and knowledge economy as a promising theoretical approach in research of social changes in the context of globalization is carried out. The main ideas of the complex analysis and of the evaluation of the factors of interaction between the general processes of global transformations and the processes of creating knowledge-based society and knowledge economy are analyzed.

Key words: *global transformation, knowledge-based society, knowledge economy*

Introduction

The creation of knowledge-based society and knowledge economy, especially in the context of globalization, could be defined as an important and promising *object of scientific research* on the *global changes*, including those covering the most important sectors of social and economic life.

Creating knowledge-based society and knowledge economy is perceived as one of the most important *priorities* of modern society and its lifestyle development, as well as of social, economic, political development, scientific and technological progress, especially in the European Union.

The creation of knowledge-based society and knowledge economy is assessed as *the most important assumption* and *the main way* to solve most of the social, economic, technological, even security and defense problems worldwide as well as in various countries or regions in general and in various countries or regions of the European Union.

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The processes of creating knowledge-based society and knowledge economy express the *essential qualitative changes* in all the areas of social, economic, political life, science and technological progress, and interaction with nature. The processes of creating knowledge-based society and knowledge economy deeply influence the content of *globalization* processes and the situation in the modern world.

The processes of creating knowledge-based society and knowledge economy, in general, could be perceived and assessed as an *essential worldwide transformation* which determines a number of *breakings and sallies* important to the humankind.

The processes of creating knowledge-based society and knowledge economy must be analyzed *in complex*. In general, these processes could be defined as belonging to the category of *global processes*; this also means that a *complex interaction* between the processes of *global changes* and the processes of creating knowledge-based society and knowledge economy are a very important factor of the *positive development* in the societal life of general context of globalization.

There are very different theories and theoretical models of knowledge-based society and knowledge economy creation processes. The problem is that these processes and the processes of global transformations are usually analyzed separately; the factor of their *complex interaction* is often ignored. This means that a complex analysis of the processes of both types, as well as an evaluation of the factors of interaction between these processes could be defined as a perspective way of solving some actual theoretical and practical problems in the area of knowledge-based society and knowledge economy, especially in the context of globalization.

The object of this article is the processes of global transformations, especially the creation of knowledge-based society and knowledge economy, with the focus on the interaction between these processes and on the general processes of global transformations in the context of globalization.

The tasks of the article: to explore the new definitions and to systematize the general processes of global transformations; to describe the main global transformations and to identify their role; to describe the knowledge-based society and knowledge economy creation processes in the context of globalization; to explore the main challenges for social development in the context of global transformations, including knowledge-based society and knowledge economy creation processes.

1. The global changes and creating knowledge-based society and knowledge economy: an integrated approach

Research of the problems of complexity of global transformations and knowledge-based society creating processes is *multi- and interdisciplinary*; it must be related to social and economic development, technological progress, environmental protection and changes in modern society and its life, reflecting various areas of science, integrated in them.

The problems of creating knowledge-based society and knowledge economy in the context of globalization have been analyzed in various aspects in a number of scientific works. Of importance are studies of these processes in the global space, as well as in the European Union and in different countries (Cohendet, Stojak, 2005; Currie, 2000; David, Foray, 2002; Dicken, 1998; Ein-Dor, Myers, Raman, 2004; Farnsworth, 2005; Garrett, Mitchell, 2001; Goeransson, Soederberg, 2005; Grace, Butler, 2005; Hayo, Seifert, 2003; Hunt, 2000; Huseman, Godman, 1999; Leydesdorff, 2004; McNally, 1999; Melnikas, 1990, 2002, 2008; Melnikas, Reichelt, 2004; Merrill, Sedgwick, 1997; Munasinghe, Sunkel, de Miguel, 2001; Olsen, Osmundsen, 2003; Parker, 1998; Perraton, 2001; Redding, Venables, 2004; Sangmon, 2002; Steinmueller, 2002). Traditional attitudes to creating knowledge-based society and knowledge economy emphasize the *technological priorities*, the *new values*, the *new models of lifestyle* as well as the necessity to ensure the interneconomic compatibility and compensation of developmental processes and changes that are of different nature. At the same time, one can see that most of scientific works in the field do not pay sufficient attention to the impact of these processes on the development of the global space as well as of various sectors of societal life. On the other hand, most of the related scientific works are not directly oriented to solving the *actual problems* of economic, social, political, technological, ecological *development*, especially of economic, social, political, technological, ecological *sustainability* and *sustainable development in general* (Castells, 2000–2004; Friedman, 2006, 2009; Melnikas, 2010).

Despite the fact that traditional attitudes to creating knowledge-based society and knowledge economy in the context of globalization are characterized by a wide variety, extensive coverage of processes and problems and considerable possibilities of practical application, it is still possible to claim that nowadays there appear many new circumstances, conditions and phenomena whose impact and role are *insufficiently* reflected in most of the traditional attitudes. For this reason, traditional concepts of the processes and problems under discussion become more and more *inadequate* to the modern needs and challenges and require essential supplements and specifications.

Modern attitudes to creating knowledge-based society and knowledge economy should better reflect the role and influence of *new-type transformation processes* taking place in the world. Most important are the transformations that reflect *the global spread of the values and ideas of knowledge-based society and of the sustainability of new knowledge creation processes*; namely the creation of knowledge-based society and the spread of its values and ideas, as well as of the ideas and values of sustainability of new knowledge creation processes in the global environment can activate and stimulate new transformations in modern society and its life, as well as help understand the necessity to react to needs of the creating knowledge-based society and knowledge economy and solving new problems in a new way.

It is possible to claim that the essential *priority* of the actualization of the traditional concepts of creating and developing knowledge-based society and knowledge economy

is that the modern concept should be oriented to the complexity of social, economic, technological, ecological development processes and must reflect both global transformation processes in general and the that reflect the creation of knowledge-based society, knowledge economy and the spread of values and ideas of new knowledge creation processes.

2. Global changes and transformations as a context of the knowledge-based society and knowledge economy creation processes

Globalization processes proximately influence society's lifestyle and the quality of life, as well as the *changes* that take place in all areas of life (Ravenhill, 2008; Friedman, 2006, 2009; Appiah, 2007; Castells, 2000–2004; Chossudovsky, 2003; Gylys, 2008; Melnikas, 2002). Besides, the perception and assessment of the *meaning of globalization processes* regarding the *content and uniqueness of changes* in the world are considered a *very important assumption* to scientifically cognize and adequately analyze the *nature* of globalization itself: it is obvious that a deep and complex cognition and analysis of globalization processes are possible only in cases when these processes are treated as changes *taking place on the global scale* and as the *global environment of such changes*.

Relating the conception of globalization processes to global changes and their environment allows *speculating* that the so-called *processes of global transformations* are considered *exceptionally significant* among globalization processes. The reason for such speculation is the fact that the essence of transformation processes (or, simply, transformations) is the *qualitative changes* that determine the *creation of new systems*: globalization processes express the world's *qualitative changes*; therefore, the *transformation processes* are treated as *exceptionally important and significant in the general complex of globalization processes*.

Global transformation processes are characterized by a *wide variety* and may be identified and classified according to various features. The variety of global transformations is also shown by the fact that global transformations may be identified, assessed and analyzed by *two* different approaches:

- the *geographically regional* approach, when global transformations, their expression or impact on society and its life are assessed and analyzed on the level of a country, region, continent or other *geographically or regionally identified system*;
- the *sectoral* approach, when global transformations, their expression or impact on society and its life are assessed and analyzed by distinguishing certain *sectors* in the complex of global transformations, which are identified by regarding the content, character or forms of expression of global transformations themselves, and by assessing and analyzing global transformations *according to various sectors*; besides, various sectors may be identified by highlighting multiple features typical of the global transformations themselves.

Moreover, the variety of global transformations shows that *global transformations as a whole are an exceptionally complicated area which requires scientific cognition and research*. It is possible to claim that the *underlying aim of the research* in this area is to assess and foresee the possible impacts of global transformations on society, its development, life, as well as to make assumptions on the purposeful influence and management of society development processes.

The impacts of global transformations on modern society in general and on *changes* in its life, development and progress are *multiple, complicated and even contradictory*.

Several circumstances determine the *multiplicity and complication* of the impact of global transformations on society and changes in its life. Firstly, global transformations themselves are characterized by a *variety of typical features* which inevitably determine the multiplicity and complication of these transformations and their impact. Secondly, global transformations as a whole may be identified as composing *different geographically regional or sectoral systems*: the variety of regional or sectoral systems reflects the multiplicity and complication of the impact of global transformations on society and changes in its life. Thirdly, *controversial tendencies* when certain development, progress and change processes evoke *positively and negatively* assessed results inevitably appear under conditions of the variety, multiplicity and complication of global transformations and their impact on society and changes in its life.

All in all, it is possible to claim that global transformations as a whole are characterized by an exceptional complexity, variety and multiplicity, as well as by a great impact on all changes taking place in all areas of life, their content and trajectories. These circumstances reveal the importance and significance of global transformations. These circumstances also show that global transformation processes and their impact on modern society and changes in its life require a more detailed description.

Global transformations that express changes of natural and climatic conditions.

The global transformations that express changes of natural and climatic conditions are very significant because these transformations reflect new challenges and needs to solve multiple ecological problems, radically reduce environmental pollution, save limited natural resources and seek for new alternatives for the use of these resources, as well as implement the means for prevention of natural disasters, reduction and elimination of their results (Friedman, 2009).

The global transformations that express changes of natural and climatic conditions may be perceived and assessed as those which:

- determine the appearance and expression of new multiple threats, dangers and risks, firstly threats, dangers and risks arising from the increasing pollution, clear limitations to use natural resources, also due to new negative results caused by the changes of natural and climatic conditions;
- determine the need to implement essential technological sallies and changes in various sectors, especially in energetic, manufacture industry, environmental protec-

tion, also the needs to create, modernize and spread alternative technologies meant for an adequate adaptation to the changing natural and climatic conditions;

- determine both tendencies and needs to initiate, spread and implement *new models and priorities of lifestyle, social behaviour, economic activities, as well as development and technological progress*, and pay more attention to the adaptation to the natural and climatic changes, the *reduction and elimination of negative results*, and *stopping the undesirable changes*;
- determine the necessity to react to the *new type differentiation forms* which appear in the world, continents, countries or regions and which show that natural and climatic changes increase the differentiation of living conditions of people in different continents, countries or regions on the level of social groups and layers. The increase of such differentiation will stimulate *new conflicts* among various layers and interest groups of international society. It would also stimulate mass expression of needs to *develop international communication and provide support* in order to decrease and eliminate the threats and dangers that appear under conditions of increasing differentiation.

The significance of the global transformations that reflect the changes of natural and climatic conditions is shown by objectively highlighted effects on implementing *qualitatively new principles and standards of the development and management of various ecosystems* globally. Essential changes in modern society and its life are inevitably determined by creating, spreading and implementing such principles and standards (Melnikas, 2002, 2010).

Global transformations that express changes of the potential of human resources and its structure. The global transformations that express *changes in the potential of human resources and its structure* are especially significant for two reasons. Firstly, these global transformations reflect *changes of the human resource potential* and their influence on the change of modern society and its lifestyle. Secondly, these global transformations reflect the *efficiency and usefulness* of various impacts on the potential of human resources and its change.

The global transformations that express *changes of the potential of human resources and its structure* may be perceived and assessed as the ones that:

- reflect and influence the *demographic situation* and its changes globally, in separate continents, countries or regions, on the level of different social groups and layers, as well as in different ethnic, confessional, cultural or other mentality groups;
- determine the impact of demographic situations and their changes on the economic, social, political, ecological or other situation in the world, in separate continents, countries or regions;
- determine the possibilities that the *new threats, dangers or problems* caused by changes in the demographic situation will inevitably appear in the world, in separate continents, countries or regions;

- show the variety of *reasons* why the structure of the human potential and the demographic situation change, as well as the variety of *possibilities* to influence the changes of the demographic situation.

The significance of the global transformations that express *changes of the potential of human resources and its structure* is shown by *objectively* arising needs of the world, separate continents, countries and regions to implement the *newly perceived humanistic orientations*, which reflect the increasing priority of natural human rights and freedoms, as well as the all round pursuit to *improve the quality of life*: namely the perception, highlighting and implementation of the importance of *humanistic orientations* must be treated as the basis for reacting to the global transformations expressing the potential of human resources and the change of its structure (McNally, 1999).

Global transformations that express changes typical of modern society, its structure and organization. The global transformations that express *changes typical of modern society, its structure and organization*, are very significant for several essential reasons. Firstly, these global transformations reflect *the controversial processes* happening in the world, when *assimilation and variety increase tendencies* are typical of the change of society structures in different countries and regions. Secondly, these global transformations reflect the tendencies of the *convergence of various society organization forms*, including the tendency whose essence is *convergence, multiple integration and even assimilation of the models and types* typical of a modern country as the highest form of society organization. Thirdly, these global transformations reflect the very significant *changes* that are typical of the *role, activity and influence* of modern countries, various international organizations, as well as international business subjects and other organizations, movements or formations. Fourthly, these global transformations reflect *new types of threats, dangers and risks*, as well as *of possibilities* when developing the multiple progress that arises or appears under the conditions of changing modern society structures and organization forms.

The global transformations *that express changes typical of modern society, its structure and organization*, may be perceived and assessed as the ones that:

- determine the changes of *powers and functional structures* typical of modern countries, which reflect the general tendency when *the role of a state* influencing and affecting the situation in various areas of social, economic, political development as well as scientific and technological progress *changes in its essence*. (The changes of the role of a state may be expressed in two ways: the first one is that a modern state gains *new powers* and takes up *new functions*, and the second means that, in the areas of traditional power expression and implementation of traditional functions, the role of a state is more determined by its cooperation with various international and non-governmental organizations, with various social movements, various organizations functioning in business and public sectors, and other subjects,

most importantly – the subjects of international business, their networks and other formations);

- determine essential changes typical of the activity and role of *formal and informal international organizations and other formations*, especially of the activities and role of inter-state organizations and international economic and business organizations: under contemporary conditions, it is namely international organizations and other formations of various subjects that perform various functions and gain more and more power to influence and affect the situation and development processes both in separate countries or regions and internationally;
- influence essential changes in the modern management systems of society development processes, including changes of *democracy conception*, and changes implementing *democracy values and principles* in a real management and self-government practice (besides, changes of democracy and its values and principles naturally determine the needs for change in various management system chains of modern society development processes);
- determine the creation and activation, increased variety and influence of various non-governmental organizations, movements and informal structures in the world, separate countries or regions: an appropriate tendency reflects manifestations of new society activeness forms as well as the increased role and significance of various interest groups;
- determine the fact that in the future there is going to be a *new type of interaction* among various subjects of activity and management, which operate internationally (states, their various organizations, other international organizations, various international business subjects and their formations), as well as regionally (various institutions of public administration, business subjects, international and local organizations, other subjects); it should be noted that a *new type of interaction* appears and may appear in various forms of a *network*;
- determine the fact that there is going to be a new-type interaction between an individual and various organizations locally, regionally, in countries or internationally, and such interaction is gaining a bigger role and is becoming more and more intensive: under contemporary conditions, individuals are becoming significant subjects of society development processes and influence the globalization environment.

The significance of global transformations, which express *the change of modern society structures and its organization forms*, is shown by objectively appearing needs to adequately react to changes of *organization forms* typical of modern society, as well as changes in the *management of society development processes and changes of democracy and the perception of its value and principles as well as the results of such changed perception*. It must be emphasized that the significance of the above-mentioned global transformations is also shown by the objectively appearing needs *to ensure the consolidation of humanistic and democratic values* when globalization processes are becoming more

and more intense, when the *mobility* of individuals, various social groups and layers, as well as organizations is increasing in various forms, and when new the possibilities to develop a multiple interaction among various activity and management subjects is increasing.

The global transformations, which express the *changes typical of modern society, its structure and organization*, as well as *changes of the potential of human resources and its structure*, could be defined as *the global context* of the changing potential of human resources and of various organizational changes in all spheres and sectors of contemporary society and its life (Diskiene, Galiniene, Marcinskas, 2008).

Global transformations that express changes in culture, mentality, value systems, social behaviour stereotypes. The global transformations that express *changes in culture, mentality, value systems, social behaviour stereotypes*, are very important because these transformations *proximately* affect the *ideals, expectations, ideological attitudes, assessment criteria* as well as *lifestyle models and underlying development trends* entrenched in society and its life. It is obvious that the global transformations that express *changes in culture, mentality, value systems, social behaviour stereotypes* are also important because these transformations reflect the manifestations and tendencies of changes in *society's psychological state, morale, ethnic and esthetic attitudes, spirituality, innovations and creativity, inertness and conservatism, tolerance and adaptation to the environment*.

The global transformations that express *changes in culture, mentality, value systems, social behaviour stereotypes*, may be perceived and assessed as the ones that:

- determine the *activation of spreading and variety* of different cultures, mentalities, value systems, social behaviour stereotypes, as well as their *interaction and convergence* tendencies: the expression of such tendencies reflects an inevitable creation and development processes of qualitatively new cultures, mentalities, value systems, social behaviour stereotypes, as well as their spread areas in separate continents, countries or regions, as well as internationally in general;
- determine the fact that historically “*alien*” cultures intensively “*penetrate*” into *historically created traditional concentration spaces* of certain ethnic, confessional or other cultures, and that this “*penetration*” causes ambivalent consequences: they offer preconditions for an intensive connection of various cultures and creation of qualitatively new cultures, as well as preconditions for the expression of new conflicts, threats and dangers which could be determined or encouraged by the increasing variety of cultures and their too great inadequacy;
- encourage preconditions for the expression of the *multiple synergetic effects* that may determine the *activation and development of innovations* which include all areas of life, as well as the appearance of *new risks, threats and dangers*;
- determine the inevitable changes in the *systems of criteria and dimensions* on the basis of which it is possible to react to the natural *change of cultures, mentalities and other spaces*, including those allowing to “*structuralize*” various *spaces* of

the world (especially – to identify the spread areas of various cultures, interests or influence spheres of various countries and their groups, various markets). Changes of criteria and dimension systems not only determine changes in the cognition of the modern world and the establishment and identification areas of various “cause–effect” connections, but also determine essential changes when creating, adapting and implementing means used by society and meant for a single-minded reaction to the change of cultures, mentalities, value systems and social behaviour stereotypes.

The significance of global transformations that express *changes in culture, mentality, value systems, social behaviour stereotypes* is shown by the emphatic needs to *adequately react* to such *changes* and their spread areas, to the *outcomes of changes, which include all the areas of the modern society life*, as well as to the fact that these changes influence *changes* in *society structures and lifestyle models*. It should be noted that the significance of these global transformations is also shown by the fact that changes in culture, mentality, value systems, social behaviour stereotypes strongly influence society’s tendencies to initiate and tolerate changes in various areas of its life (Melnikas, 2002).

Global transformations that express changes in various areas of social, economic, political development, scientific and technological progress. The global transformations that express *changes* in various areas of *social, economic, political development, scientific and technological progress* are extremely significant for two reasons. Firstly, these transformations determine *long-term qualitative changes and long-term development tendencies*, which inevitably appear and will appear in all areas of society, its life and development globally, as well as in separate countries or regions. Secondly, these transformations determine the *multi-channel influences and “cause–effect” relationship*, which reflect *general interaction phenomena* when *changes* in some areas of society’s life and development *proximately influence* changes in other areas of its life and development. *The general interaction phenomena* show that these global transformations reflect *multiple functional as well as correlation* connections which reveal various subordinations among changes in different areas of social, economic, political development, scientific and technological progress and the change tendencies.

The importance of the global transformations that express *changes* in various areas of *social, economic, political development, science and technological progress* is also obvious because these transformations reflect the *assimilation* of the processes and changes that take place in *particular* areas of the development, progress and life of society, worldwide or in large global areas. The essence of such *assimilation* is that the situation in *particular* areas of society life, development and progress in *different* countries or regions is becoming more and more assimilated due to the orientations to *identical standards, norms, etalons, ideals, expectations, activity models, or stereotypes*. This means that *general global changes*, which include *different* areas of social, economic, political development, scientific and technological progress, *increasingly influence* the situation

in *certain development and progress areas* in separate countries or regions, as well as in *each country or region in general*.

It is possible to claim that exactly these transformations reflect the *generalization of changes* in different areas of social, economic, political development, scientific and technological progress globally.

The global transformations that express *changes* in various areas of social, economic, political development, science and technological progress, may be perceived and assessed as the ones that:

- determine the fact that the *influence* of the development, progress and change in *some* areas of society's life on the development and change in *other* areas of society's life *is increasing* both worldwide and in separate countries or regions. Such *increase of many-sided, multiple and multi-channel influences* reflects the *significance of interaction, convergence and harmony* among *different* sectors of social, economic, political development, scientific and technological progress, and shows the *common tendency* that changes in certain sectors determine changes in others under conditions of globalization;
- determine the *trajectory, extent and rate of inter-inadequacies* among the processes and changes in *different* areas of social, economic, political development, scientific and technological progress when the development, progress and changes taking place in different areas are characterized by *more and more different and incompatible trajectories, extent and rate*. At the same time, ambivalent assumptions emerge – the assumptions that *qualitative sallies* should be implemented in certain areas of the development, progress and change, and the assumptions that *disproportions and conflicts* should emerge in them and have various negative consequences for society and its life;
- determine the *needs to comprehensively coordinate and harmonize* the changes that take place in different areas of social, economic, political development, scientific and technological progress. Despite the fact that global transformations are perceived as *an objective phenomenon*, it is still necessary to *react single-mindedly* to various manifestations of this phenomenon and strive to *rationally adapt to the objectively inevitable changes and effectively implement the prevention of undesirable effects* using *the means of coordination and harmonization*, including the cases when the unacceptable and undesirable *inequality* appears in different areas of the development, progress and change.

The global transformations that express changes in various areas of social, economic, political development, scientific and technological progress reflect the possibilities to solve and eliminate the problems arising in various areas by employing the experience accumulated in other areas. These global transformations reflect *common tendencies* significant for modern society and its life, which show that:

- social development and progress are increasingly determined by economic and political changes as well as by the process of scientific and technological progress;
- economic development and progress are increasingly influenced by the processes of scientific and technological progress, especially by sallies in the underlying areas of this progress, as well as by various changes and processes taking place in political and social life;
- political development and progress are increasingly influenced by social and economic changes, as well as by various factors of scientific and technological progress;
- the processes of scientific and technological progress are increasingly influenced by various factors and circumstances of social, economic and political development.

The above-mentioned tendency is manifested in multiple and controversial ways: factors of the same origin may differently influence various processes of social, economic, political development, scientific and technological progress, and the effects of these influences may also be very different and differently assessed.

The significance of global transformations which express changes in various areas of social, economic, political development, science and technological progress, is shown by objectively appearing needs to *adequately react*:

- to the *variety, inequality and outcome multiplicity* of the appropriate processes of development, progress and change,
- to *new risks, dangers and threats* owing to changes, as well as to the needs to *harmoniously adapt* to the multiple and controversial development, progress and change processes in various areas,
- to the necessity to *adequately influence* and even *manage* the development, progress and change processes *within the limits of objectively existing and conspired possibilities*.

It must be emphasized that the above-mentioned global transformations show the *modern society's powers to actively and single-mindedly* influence its life conditions, at the same time *partially programming* the trajectories of the further development and progress.

In general, the global transformations that express *changes* in various areas of *social, economic, political development, scientific and technological progress*, could be defined as an *important precondition* and as a *global context* of various social, economic, political, technological changes in all spheres and sectors of contemporary society and its life, as well as in all countries and regions. This statement is especially important in the conditions of European integration and the enlargement of the European Union (Foltean, Feder, 2009; Armstrong, 2006; Galiniene, Marcinkas, 2007; Miskinis, 2004; Armonas, Druteikiene, Marcinkas, 2010; Zeitlin, 2008; Wendt, 2005; Melnikas, Reichelt, 2004).

Global transformations, as a whole, are so multiple and complicated that even a detailed study of these transformations allows to perceive and assess the various factors and circumstances that are typical of transformations and their effects only very superficially.

The knowledge-based society and knowledge economy creation processes as a priority in the context of global changes and challenges. The knowledge-based society and knowledge economy creation could be defined as a *priority* in the system of global transformations processes. In this case, the *phenomena* of knowledge-based society and knowledge economy as well as the *trends* and *concepts* of their creation processes should be analyzed in the context of processes of global transformations.

The *modern concepts* of knowledge-based society and knowledge economy as well as the concepts of their creation processes are very multiple (Castells, 2000–2004; Cohendet, Stojak, 2005; Currie, 2000; Dang, Umemoto, 2009; David, Foray, 2002; Fischer, Gran, Hacker, Jakobi, Petzold, Pusch, Steinberg, 2010; Ein-Dor, Myers, Raman, 2004; Goeransson, Soederberg, 2005; Grace, Butler, 2005; Huseman, Godman, 1999; Leydesdorff, 2004; Steinmueller, 2002). Therefore, it is obvious that the concepts of *knowledge-based society* and *knowledge economy* should be defined and described differently.

When actualizing the concepts of knowledge-based society and knowledge economy creation and considering the circumstances of global transformations, it is purposeful to refer to certain *theoretical attitudes* which could be used when *analyzing various phenomena* of knowledge-based society and knowledge economy creation processes (Melnikas, 1990, 2002, 2007, 2010).

In order to substantiate the appropriate definitions and descriptions, it is necessary to consider the following:

- when describing a certain *society*, attention must be paid to highlighting *the most important values typical of society itself*,
- when describing a certain *economy*, attention must be paid to highlighting *the most important factors of economy growth*.

Regarding the above-mentioned attitude, it is purposeful to describe the concepts of *knowledge-based society* and *knowledge economy* as follows:

- knowledge-based society is a society characterized by the *values* of the *predominance of creativity and creative activities*, as well as the *values* that express the *generation, spread and use of new knowledge*. In knowledge-based society, the *underlying interests* express the objectives to *create, spread and use new products of art, technical, business and other creation*, as well as to *initiate, generate and implement multiple creative ideas and innovations* in all spheres of life;
- the knowledge economy is the economy in which the *underlying growth factor* is the *potential intended for the generation, spread and use of new knowledge*, as well as the *activation of creativity*. The *raising and possession of the abilities to create*,

spread and use new knowledge, ideas and innovations in all areas of life, as well as the incessant raise of the economic efficiency with the acceleration and activation of the scientific and technological progress are the underlying conditions of economic growth and modernization in the knowledge economy.

The above descriptions of the concepts reflect the *main orientations of values, which express the objectives of creativity, creation activation and new knowledge generation typical of knowledge-based society*, as well as the *main features* that characterize the significance of the *new knowledge generation, innovation, scientific and technological progress typical of the knowledge economy.*

In order to describe society and the economy reasonably, it is necessary to consider the fact that there are *internal contradictions* which appear in every society and in every economic system, and which operate in the same way as the *propulsion stimulating the progress of society and of the economy*, as well as the *causes* that determine certain *destructive processes* able to “destroy” or destabilize both society and the economy. For example, the modern “western-type” democratic society and the modern market economy are typical of various *consumption and property oriented economy contradictions* which may be assessed as *essential*. Such *consumption and property oriented economy contradictions*, which express the *priorities of consumption*, reflect the *preconditions for the progress and improvement* (especially the preconditions for increasing the competitiveness, economic potential, modernization and effectiveness), as well as the *preconditions* for various *inadequacies* to appear for the future needs and challenges (it is obvious that the expression for the inadequacy of needs and challenges may affect society and the economy and determine certain “destructive” processes and the *needs for essential qualitative changes*).

The highlighting of the *underlying values* typical of knowledge-based society and expressing the domination of creative activity, generation, spread and use of new knowledge allows realizing that *the essential internal contradiction* of knowledge-based society is the *contradiction* among society members, groups, layers and variously identified subjects belonging to *two different categories*:

- one category is the society members, groups, layers and subjects who become leaders able to initiate the creation of new knowledge, ideas and innovations, participate in multiple creation actively, intensively and productively, develop creative activities, generate, spread and efficiently use the new knowledge and ideas. The society members, groups, layers and subjects that belong to this category generally *take over the real power in society* and carry out the *functions of guiding its development and progress*. Moreover, the creation and spread of new knowledge, ideas and innovations generally express the *prerogative of making progress-oriented decisions, especially strategic ones*;
- the other category is the society members, groups, layers and subjects who *lose or do not have real possibilities* to initiate the creation of new knowledge, ideas and

innovations, *have no real conditions and skills* to participate in the creation actively and intensively, to develop creative activities independently, or to generate, spread and efficiently use the new knowledge and ideas. The society members, groups, layers and subjects that belong to this category generally become just *ordinary effectors* who have a *very limited power* and only perform the *functions of effectors*, including even the areas where huge innovative changes take place.

The above-mentioned contradiction reflects the *internal differentiation logic* typical of knowledge-based society, when the position of its different members, groups, layers or subjects is determined by the *role and place in initiating, generating, spreading and using new knowledge, ideas and innovations*. Besides, the manifestation of the above-mentioned contradiction is *universal*.

The above-mentioned contradiction reflects the meaning of the *propulsions* that determine and will determine the *development and progress of knowledge-based society*, as well as the preconditions for various *threats and dangers* to appear, which may inevitably arise in knowledge-based society. It is obvious that the *internal differentiation of society*, which shows the *different* role and place of various society members, groups, layers and subjects when initiating, generating, spreading and using new knowledge, ideas and innovations, may be manifested *in two ways*:

- as a *propulsion*, which determines the further development and progress of knowledge-based society, because the *objectives to activate and effectuate creative processes* when initiating, generating, spreading and using new knowledge, ideas and innovations become the underlying *stimulus* of the development and progress and the *potency* activating their processes;
- as a precondition for new *threats and dangers* to appear, because, when the differentiation of society exceeds certain critical limits there inevitably appear various *destructive tendencies*, including the tendencies to integrate various means based on the use of the newest scientific and technological progress into destructive processes.

The internal contradictions, typical of knowledge-based society, influence the processes of *knowledge economy* creation and development. The underlying conditions for economic growth and modernization, typical of the knowledge economy, which include education and possession of the abilities to create, spread and use new knowledge, ideas and innovations, as well as to increase economic efficiency by accelerating and activating the means of scientific and technological progress, may be assessed *in two ways*:

- as a *propulsion*, typical of the development and progress of the knowledge economy, which reflects the influence of the initiation, generation, spread and use of the new knowledge, ideas and innovations, as well as of the results of scientific and technological progress, on the growth and effectuation of the economy itself;
- as a *precondition* for the new threats, dangers and risks to appear, which are characteristic of knowledge-based society and knowledge economy and may cause

various *undesirable negative results* of the knowledge economy development and progress, and which appear or may appear in various sectors of economic life as well as in various areas of society's life and development in general.

For the sake of scientific cognition and purposeful creation and modernization of knowledge-based society and knowledge economy, it is necessary to consider the *essential principles* that reflect *qualitative changes* in society in general and in its *economic life* in particular .

The *essential principles* to be implemented in the conditions of creating and modernizing knowledge-based society and knowledge economy reflect the *aim* to create favourable conditions for *getting synergy effects and using them*, as well as to ensure favourable circumstances for *generating new synergy effects*. In general, it is possible to claim that the creation and modernization processes of knowledge-based society and knowledge economy may be assessed as a *complex expression of synergy effects*.

Analyzing the creation possibilities and perspectives of knowledge-based society and knowledge economy, it is purposeful to refer to the *universal principle of the "new quality creation"* (Melnikas, 2005).

The described aspects reflect the complex problems of social, political, economic, technological development, which inevitably appear while creating and developing conditions for knowledge-based society and knowledge economy and allow highlighting and reasoning the *priorities* of solving these problems.

Conclusions

The research of the processes and problems of creating knowledge-based society and knowledge economy in the context of global changes and global transformations in general could be defined as an especially important scientific research area.

The processes of creating knowledge-based society and knowledge economy in the context of globalization should be understood as *an integral unity*. These processes are an important priority of the social, economic and technological changes and development, especially in the European Union. These processes should be perceived as relevant to *all* spheres of life – social, economic and political, culture, advancement of science and technologies, interaction with nature in general and the environment in particular. These processes should be comprehended as the ones providing *social, cultural, political, economic, technological preconditions* for the modernization of society and refinement of its life in accordance with *the modern future-oriented standards, norms and values*.

The processes of creating knowledge-based society and knowledge economy in the context of globalization should be interpreted as a *multi-dimensional and extremely complex and uninterrupted global process* which manifests itself in *cyclical changes and leaps towards higher quality standards, norms and values*. The idea of complexity of global transformations and knowledge-based society should be implemented in *all* sta-

ges of scientific research, studies and practical activities, including the prioritizing of various programs on multi- and cross-disciplinary research and studies, as well as strategic solutions of a complex character in various stages.

The processes of creating knowledge-based society and knowledge economy in the context of globalization could be interpreted and analyzed as an important *global transformation*. Global transformations in general, as well as the processes of creating knowledge-based society and knowledge economy could be analyzed in the context of *the ideas of synergy effects*: in general, global transformations and the processes of creating knowledge-based society and knowledge economy may be attributed to the category of processes oriented towards *global transformation and synergy effects*.

The impact of global transformations on the modern society in general and on *changes* in its life, development and progress is *multiple, complicated and even contradictory*. Several circumstances determine the *multiplicity and complication* of the impact of global transformations on society and changes in its life. Firstly, global transformations themselves are characterized by a *variety of typical features* which inevitably predetermines the multiplicity and complication of these transformations and their impact. Secondly, global transformations as a whole may be identified as comprising *different geographically regional or sectoral systems*. Thirdly, *controversial tendencies* when certain development, progress and change processes evoke both *positive and negative* results inevitably appear under conditions of variety, multiplicity and complexity of the global transformations and their impact on society and changes in its life.

The creation and development of knowledge-based society and knowledge economy may be attributed to the category of *global transformation processes*; therefore, *all general phenomena*, and the characteristic of *global transformations* in general, are unconditionally typical of creating and development of knowledge-based society and knowledge economy. *Specific* phenomena reflect the *exceptional peculiarities* typical of these processes.

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