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Institutional approach to development of functional and target consent of subjects of higher education system modernization

Abstract

The concept of function and target consent of institutional entities is disclosed as the state and process of interaction between participants in the modernization of the higher education system, which is marked by the presence of mutual interests and needs, and is characterized by the existence of ways to coordinate the achievement of common goals. It is justified in the article that the institutional approach will allow formulating methodological approaches to developing the functional and target consent of the subjects of modernization of the national higher education system in the context of forming its resilience to challenges of the information economy. Despite the number of scientific publications devoted to problems of using the institutional approach in economic research, the institutional aspects of modernizing the higher education system in context of national economy informatization require the in-deep research. The purpose of the article is the development of a model of the functional and target consent of subjects of modernization of the higher education system in the context of forming its resilience to conditions of the information economy. The author developed models of transformation of the institutional order of modernization of the higher education system. It is justified the feasibility of implementation of the model initiated by higher education sector. Implementation of the proposed approach to the transformation of the institutional order of modernization of the higher education system will allow to increase its level of adequacy for business in the context of the information economy formation; diversify funding sources for universities; change the structure of financial support for modernization processes; coordinate the interaction of institutional actors; establish a feedback between the institutes.

Keywords

higher education; Quadruple Helix model; functional and target consent; institutional approach; information economy

JEL: 21, I22, O11

1 Urgency of the research and target setting

Emergence of an institutional scientific flow is due to the inability of the classical economic theory to react to objectively emerging economic problems. Developers of the institutional theory emphasized the fundamental importance of changing approaches to the individual study (retreat from the perception of a person as always a rational being); study of economic phenomena and processes on interdisciplinary basis (taking into consideration achievements of the related

sciences); complex research of the teams and groups functioning (retreat from the study of the human behavior only); conducting an analysis of dynamic economic processes (retreat from the study of predominantly static processes). Due to the institutional approach, it is possible to take into consideration non-equilibrium states, the existence of several points of equilibrium, non-optimality, the availability of alternative ways of solving social and economic problems and the adoption of appropriate managerial decisions. Institutionalism involves considering the system of partnership interaction

between the subjects of the Quadruple Helix model (“government sector – business enterprise sector – higher education sector – civil society”) as an element of the higher education system’s relations with other sectors of the national economy [1-2]. Analysis of different-directional relations between various subsystems is possible within the limits of the institutional approach.

2 Actual scientific researches and issues analysis

Theoretical and methodological foundations of the institutionalism as a scientific direction of the economic science are embodied in the writings of such scholars: Veblen T., Wicksell K., Galbraith J., Hobson J., Davidson D., Kapsel G., Clark J.-B., Coase R., Commons J., Myrdal G., Polanyi K., Ostrom E., North D., Soto H., Tonya R. and others. Ukrainian scholars also research the institutionalism, namely: Yu.M.Kovalenko, T.M.Lozyńska, O.Yu.Obolensky, O.Ye.Popov, S.V.Stepanenko, A.A.Chukhno, S.V.Berenda, V.O.Mandybura.

3 Uninvestigated parts of general matters defining.

In addition, institutional aspects of modernizing the higher education system in the context of the national economy computerization require a thorough scientific study.

The purpose of the article is the development of a model of the functional and target consent of subjects of modernization of the higher education system in the context of forming its resilience to conditions of the information economy.

4 Use of the institutional approach to the study of the functional and target consent of the subjects of the modernization of the higher education system in the context of forming its resilience to conditions of the information economy

Use of the institutional approach will allow formulating methodological approaches to developing the functional and target consent of the subjects of modernization of the national higher education system in the context of forming its resilience to challenges of the information economy. The solution to this scientific problem involves solving the following tasks:

- definition of the essence and substantiation of the urgency of establishing the functional and target consent of subjects of the modernization of the higher education system;
- investigation of theoretical foundations of the institutionalism as a direction of the economic science;

- formation of the approaches to the achievement of the functional and target consent of institutional subjects of the modernization [3, 7, 9].

From the standpoint of the institutionalism, we propose the processes of the modernization of the higher education system in conditions of the information economy formation to be understood as a system of horizontal and vertical organizational and economic interrelations between institutions, united by common interests, principles and rules of conduct. At the same time, for each institute, organizational and economic independence and separation, full responsibility for the management decisions made, including the allocation and use of resources, are kept [4, 5, 6].

In the joint monograph, I.S. Kalenyuk and O.V. Kuklin argues that the higher education is a special institution [10]. Scientists substantiate the application of the institutional approach to the knowledge of the higher education system, which will reveal a complex of interconnections between its subsystems and elements and the external environment; explain the nature of the phenomena and structures that arise in the system and its environment; take into consideration the influence of informal institutes on the endogenous environment of the system, including its complexity and contradictions [10]. Under the higher education institution, identified scientists understand "an independent social institution in view of the presence in its structure of established rules and patterns of behavior, specific cultural elements and characteristics" [10, p. 38]. In the proposed article [10] they identify the institute of higher education as the institutions-norms and institutions-organizations; the balance of the educational system, the educational process and the educational outcomes in order to ensure its institutional unity is stressed (Fig. 1). Achievement of the organizational unity of this institute involves balancing interests and harmonizing the activities of higher education institutions and specially authorized bodies in this area [10].

However, the emergence of a new type of economy highlights the importance of the development of external organizational relations of the institute, namely, with the subjects of business enterprise sector and civil society. Thus, we once again come to the conclusion about the development of an integrated model of the subjects’ interaction within Quadruple Helix, adapted to the requirements of the information economy [1, 2]. According to the latter, the institute of higher education should be considered as a special link of the institutional structure of society, which organically combines political, social and economic institutions (Figure 1). New economic conditions update the rethinking of the institution

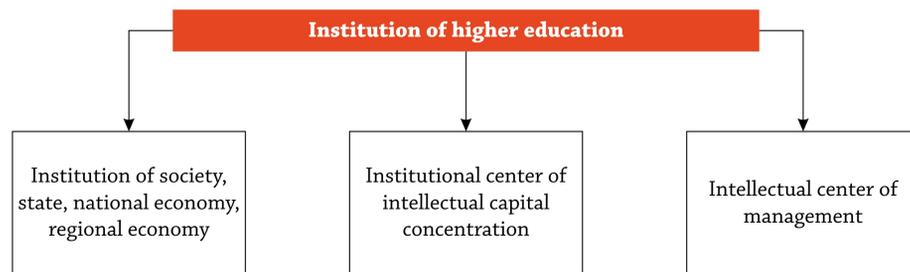


Figure 1 Main aspects of disclosing higher education as an institution

Sources: compiled by the author on the basis of [10, p. 39]

of higher education and its role in the development of the national economy.

Development of such an institution as a higher education occurs under the influence of a number of factors and with the involvement of actors in the government sector, business enterprise sector and civil society. Moreover, historically, the functioning of the educational system in Ukraine is largely determined by the state regulatory influence. Institutional analysis of the modernization processes of the institute of higher education involves the analysis of the institutional support (assessment of the impact of current norms and rules on the system functioning) and analysis of the institutional structure (assessment of the functioning of the system and higher education institutions). Institutional rules and codes of conduct cover the risk management system. Their goal is preventive action to prevent risks of overcoming the development of the higher education system into actual danger, minimizing their destructive effects on the activities of universities. Due to changes in institutional norms, the approach to modernizing the higher education system is transformed.

The set of institutions that determine the processes of the resilience formation of the higher education system to the conditions of the information economy formation can be classified as follows:

- institutes as factors of influence on the processes of the resilience formation;
- institutes as system formations;
- institutes as indicators of the processes of the resilience formation of the higher education system;
- institutes as organizational forms of norms and customs.

5 Transformation of the roles of institutes on the management of the modernization processes of the higher education system (Quadruple Helix model)

Institutions of government sector should ensure support for the development of the national economy at a level sufficient for the effective functioning of its subjects (in particular, the

business sector); ensuring stable economic growth; balanced solution of social and economic problems; promotion of the higher education system of the country. These institutes have a significant incentive effect on the higher education institutions (in terms of micro-level transformation motives) and enterprises (motivating private investment in education and science). The emphasis is on the importance of leaving the government institutions from purely administrative measures, the use of which limits the possibility of achieving synergistic effects from the interaction of subjects of the model Quadruple Helix. Priority should be given to the implementation of activities on a stimulating basis.

Activities of civil society institutions are aimed at monitoring compliance with social justice, equality of access to quality educational services. The special role of these institutes is to promote the implementation of the society interests, report them to state institutions; balancing the interests of the society and economic actors; change of values of the society (formation of respect and joint recognition of the role of education and science in the growth of the national economy). To date, this institute is characterized by some inertia, making only the first steps in involving transformation processes in the system and monitoring their implementation. At the same time, representatives of this institute act as the overwhelming majority of the end-users of educational services. Transformation of the direction of the action of institutes of modernization of higher education system is described by the data of Table 1.

In the national economy, inefficiencies of the institutes of modernization of higher education system in the context of the informational economy formation, which leads to the deformation of its structure, unbalanced economic relations between stakeholders, constrains the development of universities and institutes. This inefficiency is particularly acute in the field of financing educational institutions. At the macro level, financial tools, modern financial technologies for the effective functioning of institutional subjects of modernization processes in the higher education system need to be improved. As it is the compliance

of the financial support with the set goals and defined strategic priorities that is one of the main criteria of the efficiency of the institutions functioning for the modernization of the higher education system. Institutions of government sector should partially assume financial obligations for the development of individual objects of innovation infrastructure, which are extremely important by modernizing the higher education

system in the context of the national economy informatization. In this perspective, we see the prospects for the development of public-private partnership in the development of education. The structure of financial security needs to be optimized also at the microeconomic level, that is, at the level of institutions of higher education (universities, institutes, academies). Efficiency of using diversified sources of financial support for modernization

TABLE 1 Transformation of activities and roles of managerial institutions of higher education modernization

Institutions (under the Quadruple Helix model)	Basic principles of functioning	Prevailing current role in society and national economy	Perspective directions of changing principles of functioning	Priorities for changing the role in society and national economy
Institutions of government sector	Principle of centralized management; preserving of anachronistic principle of directive policy-making	Management, control	Principle of decentralized management; principle of synchronization of interests and potentials of the national economy subjects	Stimulating, organizational and providing, informational and advisory roles
Institutions of higher education sector	The principle of conservatism; dependence on state funding; predominance of the consumption financial model	Social role (educational services as a public good)	Principles of efficiency, optimization, profitability, and adequacy to economic realities	Economic role (educational services as specific good)
Institutions of business enterprise sector	Principles of competition, and self-financing	Active productive role – in spheres of production and sales of goods; passive consuming role – in spheres of higher education and R&D	Innovative principle; principle of inter-sectoral interaction	Partnership and investment
Institutions of private non-profit sector	Principles of social justice, equality, transparency	Mainly inertial role	Principle of balancing social and economic interests; principle of feedback from institutional subjects	Active reacting role

Source: compiled by the author

serves as the general mission of the state financial policy, aimed at optimizing the structure and volume of expenses for educational and research activities of Ukrainian universities, activating the business to invest in educational institutions.

6 Models of transformation of the institutional order of modernization of the higher education system

The concept of functional and target consent of institutional entities is disclosed as the state and process of interaction between participants in the modernization of the higher education system, which is marked by the presence of mutual interests and needs, and is characterized by the existence of ways to coordinate the achievement of common goals. The actual absence of such an agreement, unfortunately, is typical of modern Ukraine. Establishment of functional and target consent will provide statics and dynamics of coordinated interaction of subjects in the joint

solving of complex issues, prioritization of interests, and ensuring healthy competition in the national market of educational services. The following types of functional and target consent are emphasized [8]:

- 1) structural and functional consent – formation of a new structure with the preservation of organizational and legal forms and objectives of its elements is foreseen; interaction of structural elements is beneficial and acceptable to them;
- 2) functional and integration consent – it is planned to create an integration structure based on the probability of forming common goals and harmonizing the interests of the subjects;
- 3) functional and contractual consent – it is supposed to achieve a compromise between the interests of institutional actors, which does not mean the formation of a common goal, but indicates an adjustment by the subjects of their interests. Interrelations of

subjects are executed based on a contract or agreement with specification of sanctions. This type of consent requires clarity of the rules of the institutional order and their compliance with the subjects [8].

In our study, we proceed from the hypothesis that the heterogeneity of stakeholders' interests leads to a lack of coordination of the functional and target consent between the institutional actors of the modernization processes in the higher education system of the country. Under the latter, we understand the bearers of subject and practical activity, which are related to ensuring the stable development of the national higher education system in conditions of the information economy formation, act in the framework of formal and informal norms and represent interests, inquiries, and the needs of certain institutions.

Consideration of institutional actors is carried out through the prism of the Quadruple Helix model, by referring to them state authorities (legislative, executive, regulatory functions), institutions of higher education and their human potential (as the main subjects and objects of modernization), enterprises (as employers, partners, customers of scientific, technical and educational services) and public organizations and foundations in the spheres of education and science. Interaction of such rather disparate entities with fundamentally different goals of activity requires the search for points of their mutual, tangent interests. Each of the institutional entities represents the relevant institution. Functions of these institutions are sufficiently diversified. However, within our research, attention is focused on subsystems of institutions and interrelationships

between them, which have an impact on the development of the functional and targeted consent of stakeholders for modernization processes.

Setting the goal for the development of the functional and target consent of subjects of modernization of the higher education system, one must be aware of high dynamism and variability of the exogenous and endogenous medium. In such circumstances, the open higher education system manifests inconsistency and incident in its development. At bifurcation points, a jump-free transition to a new state is carried out. In essence, the system itself appears to be the initiator of internal transformations. At the same time, the institutional basis for the modernization of the higher education system is noted as a permanent change. The problem is that the achievement of the functional and target consent of the subjects of the modernization of the higher education system requires adequate changes in the institutional order. The notion of the institutional order is defined as "the formation of certain schemes of types, models of actions, standards of behavior that become habitual for institutional actors "[8]. Transformation of the institutional order limits is possible only in the event of the relevance of action for all involved entities and with the direct conformity of the changing norms and rules to the aspects of the higher education modernization.

Specificity in the regulation of the institutional order transformation depends, on the one hand, on the particular problem situation that is being solved; on the other hand - from the subject who becomes the initiator and leader of the relevant processes. In accordance with the latter, we have constructed four models that describe the likely

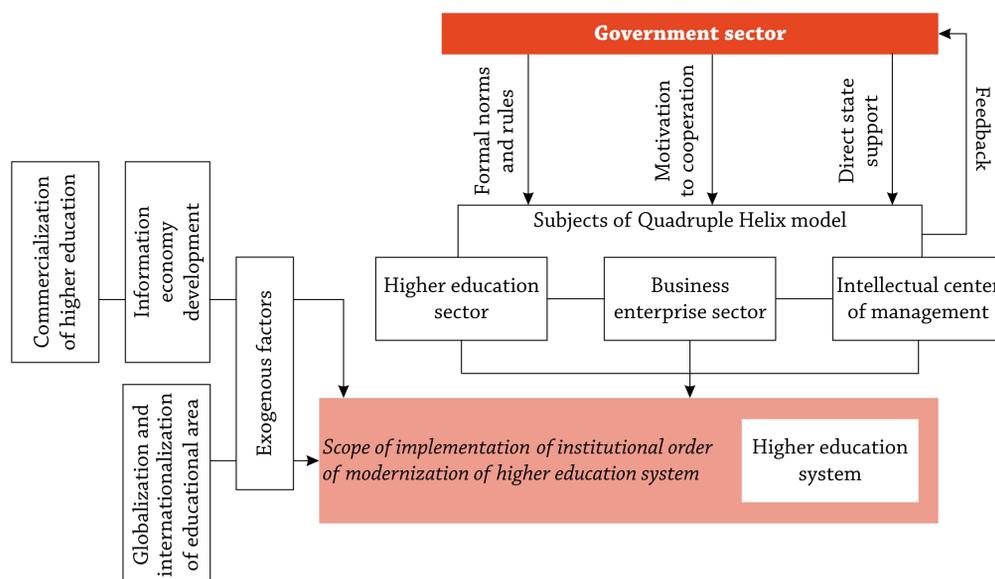


Figure 2 Model of transformation of institutional order of modernization of higher education system: initiator of transformation – government sector

Sources: compiled by the author

results of the institutional order transformation (Figure 2-5). Let's consider in detail each of the variants of these models. The first version (Figure 2) shows the situation in which the state acts as the initiator of the transformation. It is the government sector that forms the institutional order for the

modernization of the higher education system. In particular, it refers to formal rules and norms, procedures and mechanisms; state strategy and programming; establishment of the state incentives system for cooperation between economic entities.

In our opinion, the second version of the

TABLE 2 The dynamics of the state financing of the higher education in Ukraine

Year	Consolidated budget expenditures, UAH mln	Expenditures as % of total expenditures	Expenditures as % of GDP
2000	2.285,5	4.7	1.3
2005	7.934,1	5.7	1.8
2009	20.966,3	6.8	2.3
2010	24.998,4	6.6	2.3
2011	26.619,6	6.4	2.0
2012	21.058,1	6.3	2.0
2015	30.981,8	4.6	1.6
2016	35.233,6	4.2	1.5
2017	38.681,1	3.7	-
Growth rate, %	-	- 21.28 (2017 to 2000)	15.38 (2016 to 2000)

Note:

2000-2010 including the budget expenditures of the Autonomous Republic of Crimea and the city of Sevastopol

2015-2017 - excluding the budget expenditures of the Autonomous Republic of Crimea and Sevastopol

Source: compiled by the author

proposed model for the transformation of the institutional order of modernization of the higher education system (Figure 3) is the most optimal one. It is the model, which includes the initiative of higher education sector's subjects (first of all, universities, institutes, academies and their human capital). The advantages of this model in the context of establishing a functional and target consent of the subjects of modernization processes, which qualitatively distinguishes it from others, include:

- unity of the spheres of formation and implementation of the institutional order (namely, the higher education system);
- preservation of systemic unity of subjects interaction;
- completeness of consideration of the complex of endogenous factors of influence;
- adherence to the principle of ensuring national priorities (the exclusive role and the right of civil society entities to transform the

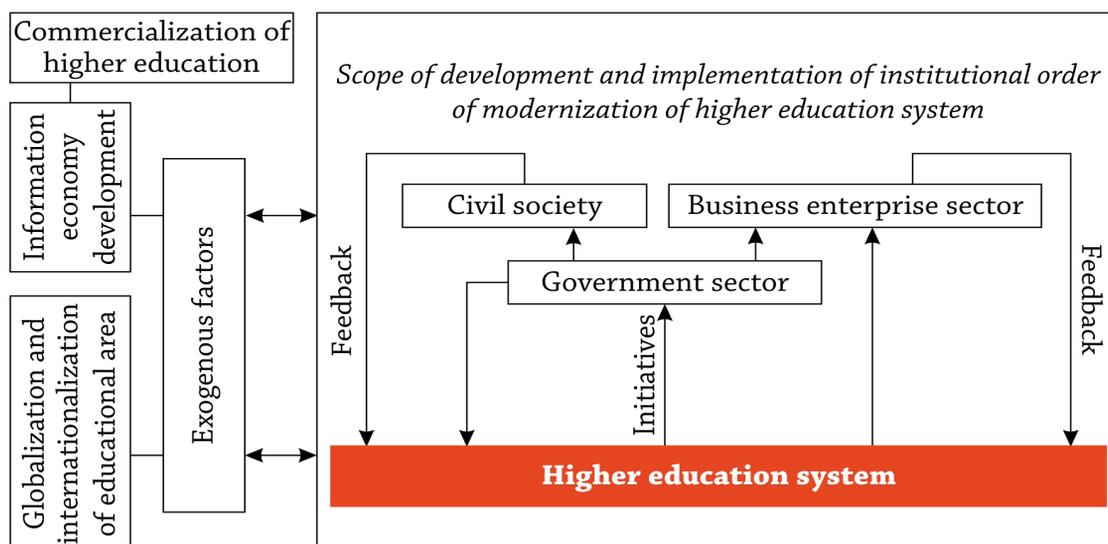


Figure 3 Model of transformation of institutional order of modernization of higher education system: initiator of transformation – higher education sector

Sources: compiled by the author

- institutional order);
- the ability to track the reaction of the system to the effects of the exogenous medium;
- operational monitoring of the achievement level of the set of intermediate targets;
- taking into consideration the features of both national higher education system and domestic universities.

Initiators of the transformation of the institutional order with regard to the formation of the functional and target consent of modernization processes in the educational sphere, according to the third variant of the model, are enterprises (business enterprise sector of the national economy) – Figure 4. However, at the current stage of development of the Ukrainian business sector, given the unsatisfactory extent of its collaboration with universities and institutes, as well as due to

their inadequate level of innovation activity, this transformation model cannot be effectively implemented at this time, can only be considered as promising in the medium or long term. The analysis of official data from the State Statistics Service of Ukraine has shown a rather low level of the legal entities’ interest in the financing of the students’ training (6968 students in the 2017/2018 academic year that is only 0.5% of the total number of the students of the higher education institutions of III-IV accreditation levels) – Table 3. It points out, firstly, the lack of motivation from the business enterprise sector (due to problems with the quality of the educational services, and the relevance of the gradulators’ professional competencies); secondly, the low level of cooperation development between universities and business sector.

In our opinion, in conditions of the information

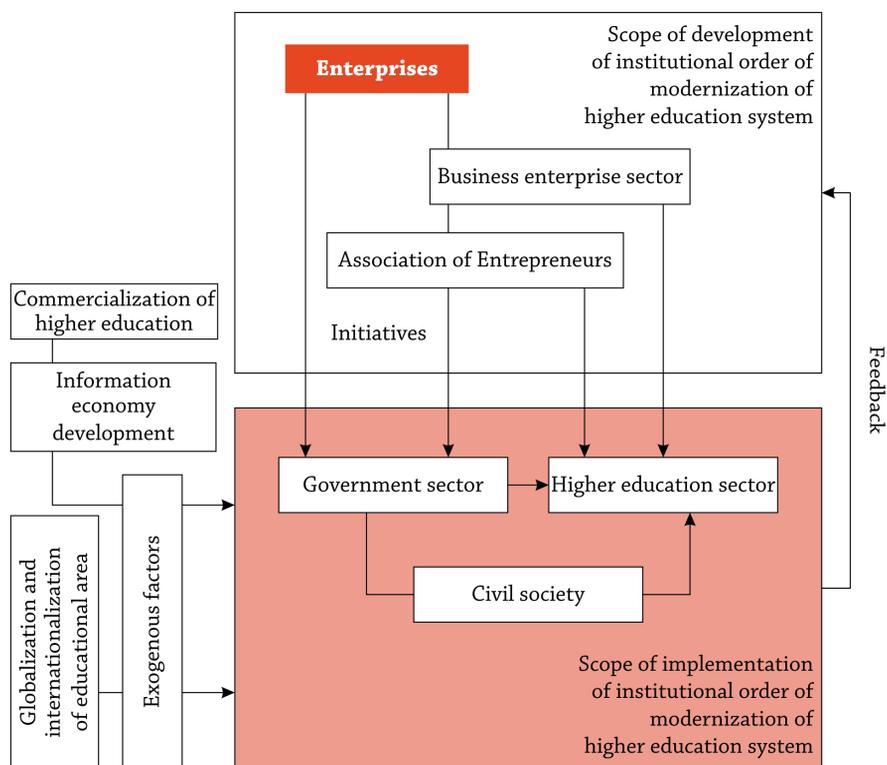


Figure 4 Model of transformation of institutional order of modernization of higher education system: initiator of transformation – business enterprise sector

Sources: compiled by the author

economy, this model (Figure 4) should become dominant. This is explained by the fact that enterprises are primarily end consumers of products generated by the subjects of the higher education system; are customers of educational, scientific, technical, expert, engineering and other services of universities.

The fourth variant of the analyzed model (Figure 5) places the civil society (NGOs) at the position of the transformation initiator. This option, according to our belief, is purely theorized. It is realistic for us to integrate the defining aspects

of this model into the above analyzed: consideration of public queries; ensuring the democratization of education, transparency of processes, equality and inclusiveness; involvement of non-governmental organizations in the areas of education and science to the management of the activities of higher education institutions on an advisory basis, etc.

Summing up, we can identify that the transformation of the institutional order of the modernization of the higher education system is carried out by the actors of the civil society. The emphasis should be on the following aspects:

TABLE 3 The structure of the funding sources for students training at higher education institutions in Ukraine, %

Funding source	2010/11	2014/15	2015/16	2016/17	2017/18	Growth rate, % (2017/18 to 2010/11)
State budget	38.6	46.1	47.2	47.7	45.8	18.65
Local budgets	0.7	0.8	1.1	0.9	1	42.86
Legal entities	0.4	0.7	0.7	0.7	0.5	25.00
Individuals	60.3	52.4	51	50.7	52.7	-12.60

Source: compiled by the author based on [11]

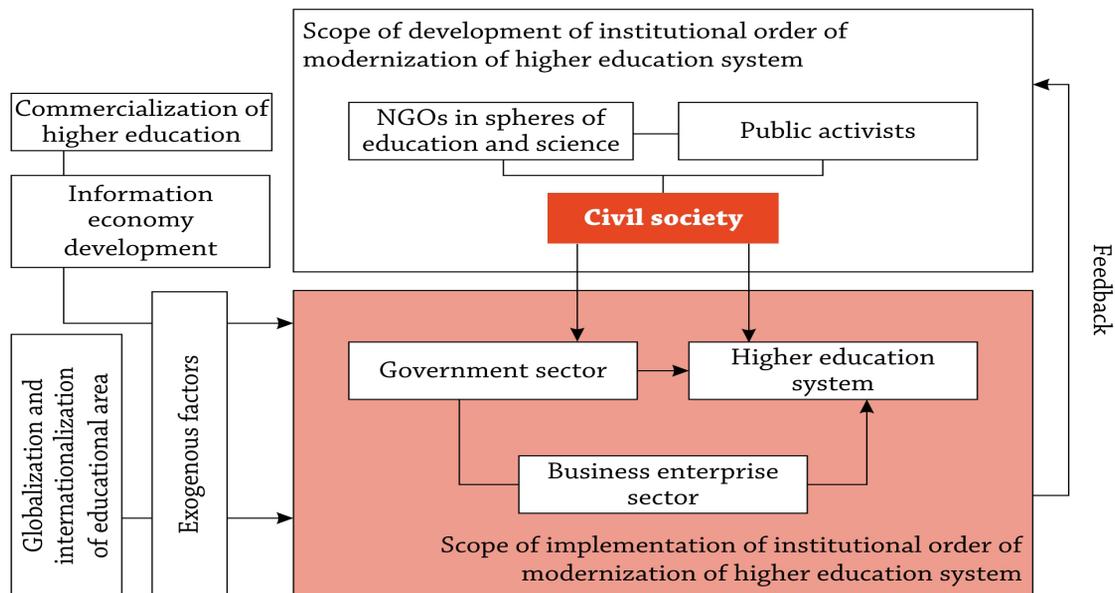


Figure 5 Model of transformation of institutional order of modernization of higher education system: initiator of transformation – private non-profit sector (civil society)

Sources: compiled by the author

- focus on achievement of the function and target consent of subjects;
- taking into consideration interests of the involved persons;
- taking into consideration initiatives of higher education institutions;
- ensuring transparency, objectivity and logic of implemented measures;
- adherence to the principles of scientific substantiation, irreversibility, and consistency.

Implementation of the transformation of the institutional order of the modernization of the higher education system with the purpose of functional and target coordination of subjects is expedient to carry out in accordance with the model shown in Fig. 3. This will stabilize the relationship between the subjects of modernization processes, increase the degree of their predictability and transparency, as well as establish a mutually beneficial partnership between the actors of the government sector, higher education sector, business enterprise sector and civil society; develop cooperation of domestic education institutions with international organizations and foreign universities.

Coordination of activities, interests, regulation

of the interaction of institutional subjects of the modernization of the higher education system involves the development of an appropriate institutional governance structure. Such a structure should be built based on an optimized distribution of functions between the interaction actors (subjects of Quadruple Helix model) and balancing sources of financing modernization processes. Development of functional and target consent within this structure requires the structure transformation of interconnections between actors, changes in the higher education system and its subsystems (managing and managed), and institutions.

In our opinion, the institutional structure of the modernization process of the national higher education system in the context of the information economy formation should be formed based on the matrix approach. It is understood that the achievement of the expected results of modernization is possible in the areas of intersection of interests and activities of entities, in accordance with the principles of the information economy, in horizontal and vertical coherence with the priorities of the higher education development in the country.

7 Conclusions

Consequently, development of the institutional component of the modernization processes of the national higher education system is an essential condition for successful interaction of subjects based on harmonization of their interests. The institutes of government sector are profile ministries, their departments, state committees, bodies of local self-government, as well as the current regulatory framework. On the part of the higher education system, these are universities, institutes, academies, associations of higher education institutions, workers and students. Business institutes include enterprises, their associations, employees, entrepreneurs and their associations. Public organizations in the fields of education and science, public activists, independent experts, trade unions of educators and students, as well as citizens as consumers of educational services are included in the group of civil society institutions (private non-profit sector).

Application of the institutional approach to the study of the functional and target consent of the subjects of modernization of the higher education system has made it possible to note the need for the transformation of the institutional order of their interaction. Such an optimal transformation can be implemented according to the model initiated by the higher education system and based on the interests of all actors. Changes in the institutional order can only be carried out by the state on the principles of transparency, logic, reasonableness, clarity and comprehensiveness. In

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our opinion, it is expedient to put this model as the base of the measures development for the effective modernization of the higher education system of Ukraine, in particular - formation of its resilience to conditions of the information economy. Implementation of the proposed approach to the transformation of the institutional order of modernization of the higher education system will allow to increase its level of adequacy for business in the context of the information economy formation; diversify funding sources for universities; change the structure of financial support for modernization processes; coordinate the interaction of institutional actors; establish a feedback between the institutes. Main directions of institutional maintenance of the resilience of the higher education system are improving the legal and regulatory framework for the activities of the institutes; updating approaches to regulating relevant processes; development of financial institutions, stimulating the inflow of private investment; resolving property issues; assistance in the development of institutional and informational support for modernization processes.

8 The prospects for the further research

The combination of systemic, synergetic and institutional approaches in our study allows us both to develop a model of partnership of subjects of Quadruple Helix and to form an optimized strategy for modernizing the national higher education system in the context of information economy development.