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*FEATURES OF ECONOMIC MECHANISM OF
FUNCTIONING ENTERPRISES OF COMMUNAL
SERVICES OF UKRAINE*

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Features of economic mechanism of functioning enterprises of communal services of Ukraine

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Abstract

The article describes the approaches to design of the conceptual scheme of formation of economic mechanism of functioning of communal services of the region. Proposed to use methods of economic-mathematical modeling for functioning efficiency estimation of public utilities.

L'articolo descrive gli approcci alla progettazione dello schema concettuale di formazione del meccanismo economico che regola il funzionamento dei servizi comunali della regione. Viene proposto di usare metodi di modellazione economica-matematica per stimare l'efficienza del funzionamento dei servizi pubblici.

Keywords: communal services, economic mechanism, appropriations in aid, economic-mathematical modeling

1 – Introduction

Housing and communal services (HCS) of Ukraine left without the state support and shortcomings of its reforming led to that the enterprises of branch are incapable to work effectively in market conditions and to provide to consumers of sufficient level and quality service.

At the moment the enterprises of branch are in need essential changes of organizational and legal forms of activity, the economic relations, updating of regulatory base, technical re-equipment and modernization in order to increase of efficiency and reliability of their functioning. This is difficult and long process of reforming of housing and communal services

which can be carried to the most actual problems of the present as it concerns interests, both the population, and all national economy.

Because in the future it is not expected considerable investments into branch, it is possible to hope only on organizational and economic actions and improvement of governance arrangements.

As the sphere of scientific research, problems of development of the housing and communal services enterprises is almost inexhaustible, but at the moment questions of formation of the economic mechanism of functioning of housing and communal services of the region are the most really significant that is important, from positions of formation of the balanced public policy, a choice of priorities, design of strategy of management of development and attraction of investments.

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The development of mechanisms of embedding of parameters borrowed new institutional forms in the general scheme of the initial institutional environment is got in this regard the extreme importance. For the solution of this task in article are offered approaches to formation of the economic mechanism of functioning of housing and communal services of the region.

Statement of a problem of formation of the mechanism of functioning of communal services of the region as systems which constantly is in a crisis state, demands deeper understanding of the crisis phenomena and solutions of problem situations.

2 – Analysis of recent research and publications

Housing and communal services is a service industry and the most important part of territorial infrastructure defining conditions of activity of the person, first of all comforts of the dwelling, its engineering improvement, quality and reliability of services of transport, communication, household and other services on which depends the state of health, quality of life and social climate in settlements.

The main generalizing characteristic of the sphere of housing and communal services is its mission - functioning and life support of the cities and settlements. The ability of the enterprises of the sphere of housing and communal services to provide expanded reproduction defines demographic and social processes in society (Yashchuk, 2007). For this reason formation and functioning of the economic mechanism assumes close interaction of all levels of management (the center, regions, local government bodies). Such close interrelation of levels of public administration is not inherent in other branches and complexes that is one more peculiar feature of the economic mechanism of the sphere of housing and communal services.

HCS have long history of development, but the conceptual framework for its fundamental categories still is not developed. The majority of the scientific works devoted to problems of functioning and reforming of housing and communal services have debatable character.

Complexity of problems which arise when performing researches, is caused by a variety of reasons from which it is necessary to distinguish insufficiency of complex research in the direction of formation the mechanism of functioning communal services of the region, discrepancy of an administrative form of the organization of providing utilities to conditions of development the market relations, traditional for Ukraine, the limitation of opportunities of consumers influence on objects of natural monopolies.

Provisions of the theory of the system analysis as complex method of an assessment of a problem and

development of management decisions, can be adapted for the needs of functioning of housing and communal services and can increase its efficiency and productivity. Feature of application of this method to the analysis of multipurpose systems to which also belong housing and communal complexes, is that it allows, abstracting from particulars, to see a problem in general, in its main fundamental lines.

In the real research functional activity it is offered to understand the activity of system which is directly connected with its preservation as holistic, based on continuous maintenance of existing relations and connections, the exchange of resources, energy and information, both in internally and in external environment.

Functioning of communal services as difficult economic system is considered doubly: as activity in sense of processing of some costs in resulting economic effects and as the organization of this activity.

Problems of functioning of the communal enterprises were considered in works of the Ukrainian scientists and practitioners among which it is necessary to mark out the prof. B. I. Adamov, V. N. Amitan, A.A. Lukyanenko, V. V. Finagin, etc. (Adamov B. I., 2008; Amitan, 2002; Lukyanenko, 2010).

Activity of the housing and communal services enterprises of Ukraine was estimated in the works by native scientists: B. I. Adamov, A. N. Alipov, V. N. Andriyenko, S. V. Bogachov, P. T. Bubenko, O. O. Lukyanenko, G. I. Onishchuk, V. P. Poluyanov, V. V. Rybak, G. M. Semchuk, V. I. Chizh, B. G. Shelegeda, etc. (Onishchuk, 2000).

Ukraine is faced by complex challenges of transformation from non-market to market and at the same time in post-industrial economy today. There is a large number of the researches anyway characterizing problems of an economy of Ukraine in transition period (works of D.P.Boginya, N. Volynsky, V. M. Geets, A. A. Gritsenko, B. Gubsky, M. Gurevichev, I. I. Lukinov, S. Mocherny, V. V. Pesotsky, G. Pyatachenko A. S. Filipenko, etc.). The systemic profound changes of transitional economies, happening during historically long period, create a situation of institutional transformation (Boginya, 2002).

The large number of works native and foreign scientists was devoted to studying of problems of reforming of a housing and communal complex: E.V.Dymchenko, Alexander Zawada, V. Inyakin, A. Ostrovsky, Y. Simionova, Poluyanov B., O. Tishchenko, VI Rainin, A. Skripnik, N. Smentinoy, O. Tishchenko, S. Yuryeva and many others (Bubenko, 2013).

Thus, uncertainty of many questions, need of improvement existing and development of new approaches to increase of efficiency and reliability of functioning the housing and communal services enterprises will promote to excretion it at the front path of high-quality transformations.

3 – Mathematic modeling of communal services in the region

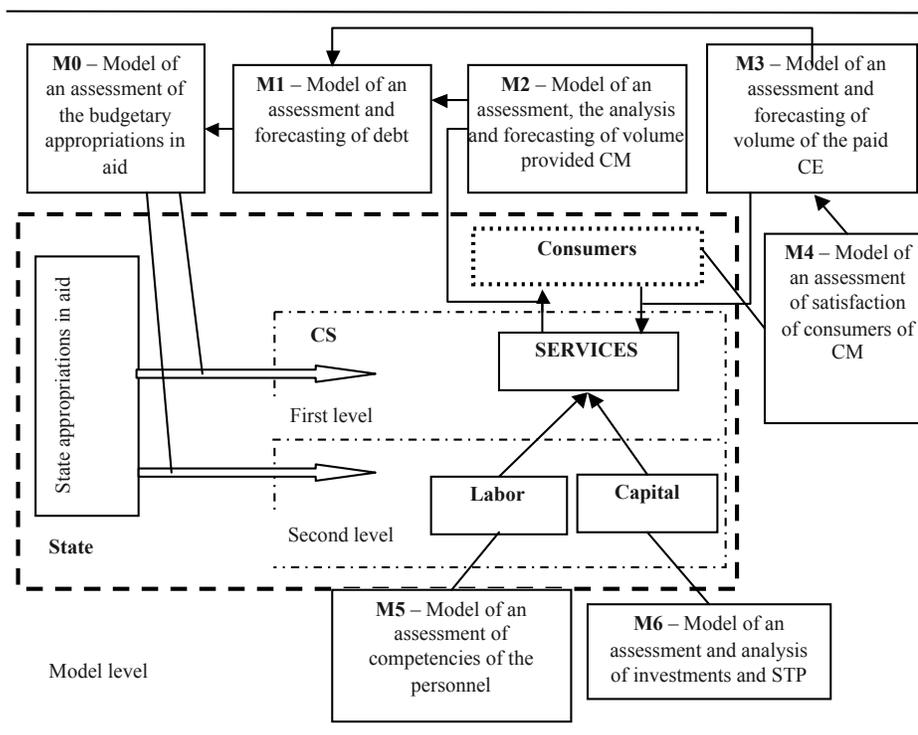
From the point of view of the institutional theory, the support only on the market as on the instrument of mobilization of economic resources does not provide necessary opportunities for formation of steady development of CS of the region not only today, but also in the future. It results in need of a combination of market forms of the relations with the macroeconomic mechanism of regulation process of mobilization, distribution and using of resources during implementation of the vital development programs, both with nationwide, and with regional the points of view. State regulation of this process is urged not to cancel the principles and mechanisms of market managing and not to replace it with directive management, but on the contrary, to promote creating favorable conditions for activation of activity CS of economic entities.

The communal services are multiple factor synergetic difficult system therefore the offered approaches to formation of the mechanism use the methods of economic-mathematical modeling. Let us consider the model level of the offered economic mechanism of functioning communal services of the region which conceptual scheme is given in Fig. 1.

Economic development is characterized by causal interaction of various economic factors reinforcing each other. However, the main goal consists in establishing reasonable balance between interests of all parties connected with production, consumption and regulation of the communal complex. The basic resources elements of system of CS are labor (L) and the capital (C). This system is open and interacts with consumers by providing them utilities and receiving payment for the provided services. Each model has a target orientation, complex of tasks of its achievement, and the agreed decision of the last allows increasing quality of administrative decisions on formation of the economic mechanism of functioning of

communal services of the region. From these positions, we will have opened the content of the offered models.

Fig. 1 – Models of economic mechanism of functioning communal services of the region



M0 – Model of an assessment of the budgetary appropriations in aid. In a transitional economy the declared appropriation of branch by means of achievement of full payment for services for the public will not provide sufficiency of financing the sphere of communal services therefore interaction happens to the state by obtaining the budgetary appropriations.

M1 – Model of an assessment and forecasting of debt on utility payments in the form of the final and differential equation:

$$Z(t) = Z(t-1) + Y_{ok}(t) - Y_{cni}(t),$$

where

$Y_{ok}(t)$ – the volume of the rendered services by communal enterprises (except for the electric power) for the period t ;

$Y_{cni}(t)$ – the volume of the paid services for the period t .

M2 – Model of an assessment, the analysis and forecasting of volume of the provided services. The recommended economic-mathematical model is under construction on the basis of the production function considering both exogenous - external, and endogenous - internal variables for the communal enterprises.

It is very important that production function reflected objectively the modelled reality that is that it satisfies substantial-logical and economic requirements.

M3 – Model of an assessment of level of payment utility bills. It allows to make the analysis of dependence volume of the paid CE from a factor of time and degree of satisfaction of consumers.

M4 – Model of an assessment of satisfaction of consumers with the provided utilities. This model is under construction based on questioning of consumers and application of expert estimates:

M5 – Model of an assessment of competencies of the personnel. Strategic human resource management is the management providing coordination of the purposes and opportunities of the company, interests of the personnel, owners, clients and environment. Development of competencies of the personnel is considered as the priority direction in improvement of a control system of human resources.

M6 – Model of an assessment and analysis of investments and STP. Considerable investment potential of branch has lost because of an inefficiency of management and the applied technologies. The model of an assessment and the analysis of investments and STP is based on application of the main equations of model Solow.

Unfortunately, the volume of investments on introduction of new equipment and technologies in system of communal services is very insignificant in recent years. For this reason within formation of the economic mechanism of management, development of communal services of the region there is need creation of the M5 and M6 models.

Application of scenario approach is useful when modeling investments in system of communal services will allow to carry out an assessment of resource potential and to define strategy of development of communal services.

Features of functioning of communal services are defined by nature of the market transformations happening in economy of Ukraine. The general direction of these reforms is transition to the market principle of availability of payment: housing and communal services are considered as goods for which it is necessary to pay on its overall cost. However, is this transition prepared by that economic environment that in Ukraine now really exists? What role is played by appropriations in aid in a transitional economy? Let's refer in this context to K. Marx who had exclusively strong an understanding of logic of social reality. Marx's position on the fact that any public formation will not be lost earlier, than develop all productive forces for which it gives enough scope and new arises will develop only when material conditions of its development is available already, testifies

that for him (Marx) a source of changes — evolution (Marx, 1959). The Nobel laureate, one of authoritative representatives of the theory of institutionalism D. North notes that "views of institutional processes and logic of institutional changes are close to Marx's" (North, 1997).

Costs of payment of goods and services, including services of housing and communal sector, constitute the most powerful article of expenses in the budget of Ukrainians (State Statistics Service of Ukraine). Important criterion of an assessment of social orientation the market of the communal enterprises is the share of costs of HCM in the total amount of consumer expenses of a household. Experts call this share burden of housing and communal payments. The budgetary subsidies are connected with this size to needy families on payment of housing and utilities.

Ability of most of the population to pay social, including utilities on an overall cost is possible at rather high level of the personal income. With the zero economic growth and a level of unemployment making 10%, the economy of Ukraine got to an institutional trap: it faced with need of a compromise when carrying out social transformations and ensuring economic growth (*State Employment Office of Ukraine*).

The program of housing subsidies is realized in Ukraine since 1995 (this year of 21.10.1995 No. 848 was accepted the Order about appointment and granting subsidies to the population for compensation of costs payment of housing and communal services, acquisition of the liquefied gas, solid and liquid oven household fuel by the Resolution of Cabinet council of Ukraine) and it is a component of the state address public assistance to needy families.

During the heating period of 2011-2012 subsidies for payment of housing and communal services used more than 500 0000 families (State Statistics Service of Ukraine).

Among regions the greatest specific weight of the families receiving subsidies are in the Kirovograd area and in Kiev 4,1 and 3,4% respectively, and the smallest – are in the Ternopol and Zakarpatye areas 0,3 and 0,4 % respectively (State Statistics Service of Ukraine).

According to the concept of housing and communal reform, the population has to pay not all tariff, but its certain share which is supposed to raise and bring gradually it, eventually, to 100% (Law of Ukraine, 2009).

The main obstacle for transition to 100% payment by the population of utilities is the negative effect of entry conditions, which is expressed in high differentiation of the population according to the income and rather low differentiation from the point of view of housing security.

In 2011 (the Presidential decree of Ukraine No. 767/2011) the Verkhovna Rada of Ukraine adopted

the law "About the National commission of regulation of the market of utilities of Ukraine".

The bill provides creation of the National commission of regulation of the market of utilities (NCRMU) as joint central executive authority, which carries out state regulation in the sphere of heat supply, the centralized water supply and a drainage system which activity directed and coordinated by the Government.

The main task of activity of the created National commission of regulation of tariffs (NKRTCS) – then the National commissions – consists in implementation of state regulation in the sphere of utilities (Law of Ukraine, 2011).

The National commission provided to the government the option of formation tariffs for the centralized heat supply, supply of water and water disposal.

In the document by calculations of experts it is specified that as a result of introduction of the stimulating tariff setting the economy can make more than 10 billion UAH (Fig. 2) (The National commission which carries out state regulation in the sphere of an energetics).

As a result, of the conducted researches by authors is offered the model of an assessment of efficiency of the budgetary appropriations in aid of communal services (M0). It is offered to allocate two levels in system of CS on which the budgetary grants extend.

Fig. 2 - Result of introduction of the stimulating tariff setting the economy (W. – supply of water and water disposal; H. – heat supply)

Amount of reimbursement provided by the legislation	2013		2014		2013-2014
	W.	H.	W.	H.	
	6.974 billion UAH		6.974 billion UAH		
	3,879 billion UAH	3,095 billion UAH	3,879 billion UAH	3,095 billion UAH	13,948 billion UAH
The actual need for means for compensation without application of provisions of the resolution CMU	2013 y.		2014 y.		14,476 billion UAH
	W.	H.	W.	H.	
	7,238 billion UAH		7,238 billion UAH		
	3,032 billion UAH	4,206 billion UAH	3,032 billion UAH	4,206 billion UAH	
Need for funds for compensation in case of adoption of the resolution CMU	2013		2014		3,257 billion UAH
	W.	H.	W.	H.	
	3,080 billion UAH		0,177 billion UAH		
	1,243 billion UAH	1,837 billion UAH	0,019 billion UAH	0,158 billion UAH	

The first level – a covering of deficiency (G1). It arises because of a difference between cost provided and the amount of the services paid by the population. G1 determines the absent amount of financing for covering of expenses communal utilities by the provided services.

The second level – is the state investments into development of CS (G2), in particular, in develop-

ment of two most important factors: manpower and fixed capital.

That is, if to lower expenses of the state on compensation unpaid consumers of services, funds, which are released, have to be invested on development of two most important factors – labor and the capital.

This procedure is reflected in the M0 model (Fig.1): where:

$Inv_L(t)$ – investments into development of a manpower;

$Inv_K(t)$ – investments into fixed capital;

$G_1(t)$ – the expected sum of the budgetary appropriations in aid of the first level during the period t;

$G_2(t)$ – the expected sum of the budgetary appropriations in aid of the second level during the period t;

ω – coefficient of a covering of debt of communal services at the expense of the budgetary appropriations in aid of the first level;

$Z(t)$ – debt of payers on utility payments which developed in the period t.

The draft resolution offered by the National commission, which gives start has miscalculated version of transition to economically reasonable tariffs, will allow putting legislatively provided sums of economy of public funds for appropriations in aid in the developed model.

The National commission is created also for a solution of the problem formation of the main source of means for development objects of housing and communal services. For this purpose, it is offered to include an investment component in the operating tariff for payment of housing and communal services. Developers of the program believe that in the course of reforming of a housing and communal complex transition to full availability at a price of housing and communal services for the population will provide increasing of investment appeal of branch.

The regulator (NKRTCS), introducing the stimulating tariff setting by establishment of long-term tariffs, does not consider payments of consumers as the main source of a covering of expenses of the housing and communal services enterprises: NKRTCS notes that the need will remain for budgetary funds for granting privileges and subsidies for payment of housing and communal ser-

vices, and also on financing of works on modernization and capital repair of objects of housing and communal services.

4 – Conclusions

The problems, which ripened during the long period of inaction in the sphere of housing and communal services draw close attention of politicians, businessmen, the public and demand multimillion investments. This perspective was consolidated among scientists. The special importance of research of a crisis situation in housing and communal services is gained for Ukraine where system crisis is presented by the whole range of negatives. It defines need of deeper judgment of internal mechanisms of functioning and development of the housing and communal services expected consequences of permission of a crisis situation.

In article is revealed the specifics dominating today in the society of the mechanism of appropriations in aid as element of an institutional matrix, mechanism of interaction of the relevant basic and complementary institutes and possibility of correct embedding of alternative forms is defined in the economic, political and ideological environment, minimizing thus social expenses.

The conceptual scheme of formation of the economic mechanism of functioning of municipal services of the region is developed, presented in **Fig. 1**, which allocates labor and the capital as the basic resource elements of system communal services and consists of set of models, each of which has a target focus, an agreed decision of a complex of tasks which allows to increase quality of administrative decisions on formation of the economic mechanism of functioning communal services of the region.

In research it is specified that the communal services are multiple-factor synergetic difficult system therefore the offered approaches to formation of the mechanism use methods of economic-mathematical modeling.

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