
Problems of Development of Housing and Communal Services in Russia

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Abstract

Despite the positive tendencies in housing and communal services (HCS) of the Russian Federation, in the 2020 positive changes occur very slowly and sometimes with sharp contradictory deviations from the intended course. In this article, we highlight the major problems of the development of HCS that demand priority elimination. This study aimed at assessing the effectiveness of government programs implemented in the HCS sector and was based on the methods of analysis, induction, deduction and dialectical-logical approaches. Five main problems in the development of HCS were found out by using induction method. The identified problems relate to the field of strategic management and characterize the inefficiency of the development and implementation of development plans. These problems were compared with the tools of private concepts of controlling the sphere of HCS. Namely, the problems of development were compared with the technology of forming a controlling system. Results indicated irregularities or incorrect execution of separate stages of controlling technology. The obtained results have theoretical and practical importance for increasing the efficiency of the development of the sphere. The results of the study can be used to clarify goals, objectives, and adjust activities to accelerate the development of the industry.

Keywords: housing and communal services, controlling, effectiveness indicators, problems of HCS development, strategy, housing and communal services development strategy

JEL classification: L97, L98

1. Introduction

Social significance of housing and communal services (HCS) has been substantiated and proven in many scientific works. Housing conditions include several points that influence upon the quality of life in a city. These points are the following: the state housing stock,

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landscaping, and maintaining the cleanliness of the yard territories (Urozhaeva, 2016). The state of HCS is gradually improving, but the improvements are not being dynamic enough, as most citizens would like. For example, in Nizhny Novgorod region the complaints about violation of consumer rights decreased from 1037 in 2018 to 857 in 2019. The total quantity of offenses decreased from 2089 in 2018 to 1508 in 2019 (Nizhny Novgorod region state housing inspection, 2019).

HCS branch is tightly connected with over 30 related branches and that is why its development can be potential for economic development of the entire economy of the Russian Federation. Tourism is one of the suffering business branches that can be developed with the HCS recovery. The most preferable options for the investment are the hotels, land, equipment and buildings (Dedusenko, 2017). Developing HCS and mega-events, taking place in a city, will give a base to attract the tourists. So called “Barcelona model” is constantly presented as the best pattern for urban transformation and marketing to promote the city’s image. After it, Barcelona is considered a global city and is a mandatory route of thousands of tourists every year (Menezes and Souza, 2017; Mirzayeva et al., 2020).

Positive changes in the sphere are too slow, and it confirms the existence of problems in HCS improvement. The most urgent task is to study development problems and to understand their nature during analyzing and studying the branch. This knowledge will accelerate the improvement processes and bring HCS sector to a whole new level.

The subject of our study is a set of theoretical questions, regulatory legal acts and statistical data related to the description of the direction of HCS development and a description of the current state of the sphere. *The aim* of the current research is to identify the main problems of HCS development that require priority elimination. To implement the research goal, it is necessary to solve the following *tasks*:

- determine the current direction of HCS development;
- highlight the reasons and factors hindering HCS development;
- identify priority HCS development problems by degree of importance.

The methodological and theoretical basis of this scientific work is based on the researches that are dedicated to the development of HCS and on the data from international and domestic conferences, periodicals, official statistics on HCS development problems and status. The tasks set in the study were solved using a systematic approach, induction method, theoretical ranking method, as well as tabular and graphical data processing techniques.

The next section provides a brief review of studies on the development of HCS, approaches to HCS, and problems accompanying the development of HCS. Section 3 provides information on HCS development direction in modern Russia and the indicators of HCS development strategy. Section 4 discusses the effectiveness of HCS strategic management and presents the technology for the formation of a HCS controlling system. Section 5 concludes the paper.

2. Literature review

Most studies on the development of HCS are reduced to a description of the state of the housing sector. It is necessary to distinguish between sphere problems and problems of HCS development. As part of the study, we are interested in problems that are related to development of HCS; therefore, scientific papers were analyzed in terms of this aspect.

Among international studies, works are presented in small numbers. Basically, these studies concern only one of the elements of the housing sector and do not consider the sphere in general.

For example, Borja-Vega et al. (2019) research the problems of water supplying and water supplying pricing in Mexico. Authors denote that one of the water infrastructure development problems is an unfair redistribution of subsidies for water services. Well-off segments of the population receive a greater positive effect of subsidies than less well-off people. This research does not cover the entire HCS sector but solves only a narrow problem.

Wyrwa (2019) substantiates that one of the ways to combat the problem of the growth of polluting emissions into the atmosphere is the realization of the strategy of the houses' modernization into energy efficient HCS facilities. This research does not belong to HCS development but to the solving the ecological tasks due to changes in housing and communal services.

Shalbolova and Kenzhegaliyeva (2018) substantiate the effectiveness of HCS development sphere in the Republic of Kazakhstan and the necessity of further development of the concept of smart cities. The authors point to the need to use an integrated approach to solving housing and communal services problems but do not indicate specific causes and problems of sphere development.

Latief et al. (2017) note that irreversible environmental damage is caused in the form of greenhouse gas with the development of housing and communal services infrastructure in order to increase the level of electrification in Indonesia. The researchers propose to use the engineering technologies that will increase the energy efficiency of buildings and reduce energy consumption to zero.

Chatzivasileiadi et al. (2017) connect the insufficient development in the field of electricity supply with a restriction in the use of renewable energy sources and energy storage technologies.

The other countries have different approaches to HCS. Mainly there are used French-Scandinavian (Dutch) approach and Anglo-American. System of goals management (the French-Scandinavian (Dutch) approach) includes a combination of economic, organizational and administrative and legal methods. The aim of this combination is to form the competitive beginnings in housing and extension of a circle of participants of economic process. The economic relations are based on contractual obligations on the competitive beginnings and the state involvement is selective but is not ignored (Meshcheryakova, 2017). Anglo-American approach is based on fast transition to transmission of initiatives of revival and service of housing stock to hands of the private companies. Such a system attracts finances from world and domestic markets of the capital under the projects having exclusively market incentives.

The interference of the state is minimal and relates to families with the low income (Skripnik, 2017; Miroshnikova and Taskaeva, 2017).

Thus, integrated development of housing and communal services is not almost discussed in the international scientific society, but problems of development of separate sectors of the industry are discussed mainly. However, many issues are addressed through the development of energy efficiency. Most of the researches are domestic, that compare the quantity of the foreign ones.

Usmanova (2018) defines the development of the sphere as a modernization, reconstruction and new construction of HCS facilities, and also as the creation of effective financial models and cash flows using reasonable tariff regulation for basic housing and communal services. The author relates to the main HCS development problems the following ones: using the principle of “eliminating bottlenecks” in HCS and elimination of accidents and inefficient financial relationships between resource companies and housing companies. Research states that forecasting processes and the use of public-private partnership mechanisms are not developed enough.

Subetto (2018) admits that as Russia is located in a cold climate zone, it leads to the greater energy consumption than in some other world countries. This causes an outflow of capital from the country. The author considers that the problems of HCS development relate to the absence of housing and communal services development strategy management mechanism. The author considers the problem from a philosophical point of view.

Komov et al. (2019) denote the main problem of the development of the HCS industry as an imperfection of the regulatory framework. Low quality, insufficient completeness and inadequacy to the needs of the sphere relate to the regulatory deficiencies. As a result, mechanisms for the implementation of new governance and reform models are absent. This problem leads to low efficiency of implemented reforms and gives rise to many other problems. The authors identify yet another quite important problem, as the absence of a model of an industry body in the housing sector. On the one hand, HCS is subordinate to the Ministry of Construction, Housing and Utilities of the Russian Federation and, on the other hand, it is directly connected with the Ministry of Energy of the Russian Federation. The disadvantage of work is that a significant part of the study is reduced to a description of the current state of the housing sector, but not the description of the development problems.

Plotnikova and Sorokina (2019) described general problems of the state of the sphere in a structured manner and stand out the most significant development problem as insufficient state participation in resolving HCS issues.

Tkachuk (2018) performed an analysis of the problems from the point of view of the historical aspect. The paper describes the state of housing problems and ways to solve them in the pre-revolutionary and Soviet periods. The study made an attempt to justify the unsatisfactory current state of housing and communal services with a long, historically formed, lack of interest of each participant in HCS market.

Seminista and Leonova (2018) dedicated their research analysis of the problems of the development of the digital economy in the housing sector. The authors point on the emerging technological barriers. Three groups of technological barriers are stood out. The first group includes the lack of primary accumulated large data array that will serve as the basis for the

development of information technology. For example, existing utilities appliances are not suitable for this purpose, due to functional limitations. Second group of barriers includes information security. The third group is a low interest of HCS market stakeholders. Scientists offer solutions related to the implementation of the BigData concept. This work is interesting, but reflects the problems of only one of the sides in the industry's development.

The application of the modern technologies will help in strategic development of HCS organizations and sustainability of civil servants' communication with the peopling, etc. (Laužikas and Miliūtė, 2020). For example, a distributed algorithm that is used in neural networks can design an interactive connection between the citizens and clerks, service workers and officials of Housing and communal services industry (Reizenbuk et al., 2019).

Some researchers approach to the development of the housing sector through implementing the concept of "smart cities". For example, Veselova et al. (2018) indicate the main problems and ways to solve them when implementing this concept.

Some researches, for example, Saralinova (2019), consider the problem of development of separate HCS state enterprises. The author points out the insufficient implementation of elements of competitive market relations and the weak development of public-private partnership practices.

Thus, the analysis of the scientific works leads to the conclusion that insufficient attention is paid to the problems of HCS development. Most of the work is reduced to a description of the current HCS problems. Some works describe the problems of development of the sphere, but most often reflect the problems of development of only one of the segments of HCS. Among the problems of development of HCS, the authors mention low quality of forecasting, poor quality HCS management, insufficient development of public-private partnership mechanisms, and regulatory deficiency.

3. Direction of development of HCS in Russia

The general scientific and induction methods have been used to research the HCS development in Russia.

The development is changes associated with the transition from one quality to another, from old to new, according to the main philosophy representations. These representations belong also to the HCS development. The sphere is currently undergoing constant changes. In the early 90s, these changes were revolutionary and nowadays development is evolutionary. It means that there are relatively gradual changes in HCS.

To study the problems of development of the industry, it is needed to understand how the future state of the housing sector is seen. In Russia, the vision of the future state of the sphere is determined by the HCS development strategy. This strategy is enshrined in regulatory enactment Order of the Government of the Russian Federation of January 26, 2016, No. 80-r "On approval of the Strategy for the development of housing and communal services in the Russian Federation for the period up to 2020".

According to the adopted strategy, the main goals of the state in the development of HCS are:

- improving the quality and reliability of HCS. The quality and reliability means uninterrupted provision of utilities (heating, gas, electricity, hot and cold water, sanitation), favorable and safe living conditions for citizens in apartment buildings and houses, solid

municipal waste management in accordance with the requirements provided by the legislation of the Russian Federation;

- ensuring the availability of HCS for the population.
- In accordance with the adopted strategy, the main priorities are determined by the state as the following:
 - increase the level of comfort of citizens, the necessity to ensure accessibility of apartment buildings for people with disabilities;
 - improving energy efficiency of HCS infrastructure and facilities;
 - application of the most effective technologies that are used during the reconstruction and construction of communal infrastructure and modernization of the housing.

The efficiency of state bodies depends on their ability to create services that meet public needs contributing to the growth of the population's life quality (Rodnyansky, et al., 2019). For the public authorities, the most important task in the housing sector is the creation of an effective regulatory framework. With this regulatory framework, sustainable HCS development will be carried out and the quantity of administrative procedures will reduce and prerequisites for corruption will be absent. In this connection, such process as examination of construction facilities has essential value. Issues of determining the suitability of facilities are solved during an expert study (Verenich, 2008). Among the objects of expertise the following items should be identified: the processes associated with the design, construction, operation of buildings and structures, etc., and the facilities provided for the examination - buildings, structures, their parts, construction materials, etc. (Verenich and Chelysheva, 2008).

To fulfill the main objective of the strategies the following subtasks are provided:

- increasing the transparency of information about companies providing housing and communal services for consumers, investors and regulatory authorities;
- stimulating the development of integrated systems for accounting for communal resources, allowing for remote metering and reliability of information on the volumes and quality of communal resources, information on the technical and economic condition of the municipal infrastructure facilities;
- coordination of territorial and investment planning mechanisms for the development of communal infrastructure, considering future necessities;
- usage of internal reserves for the HCS development related to the optimization of investment costs. One of the promising mechanisms is the development of the energy services market;
- use of concession agreements to attract private operators to manage the investment-unattractive housing and communal facilities.

For this HCS development strategy, the following benchmarks were determined:

- area of residential buildings, in respect of which major repairs were carried out within the time frames specified in the regional capital repair programs;

- level of payment for housing and communal services;
- the volume of the settled housing stock that was recognized as an emergency before January 1, 2012;
- level of losses during operation of cold water supply networks;
- level of losses during operation of heat supply networks;
- proportion of population consuming drinking water, the quality of which meets sanitary and epidemiological standards of the population provided with access to centralized water supply services;
- proportion of wastewater being treated at biological treatment in the total volume of wastewater passed through the treatment plants;
- proportion of borrowed funds in the total amount of funds allocated for capital investments in engineering systems of communal resources;
- proportion of expenses for housing and communal services in total family income;
- transfer to business those entities, in which the state has a stake of no more than 25%, under concession agreements, of all state in respect to which ineffective management is carried out inefficient management.

The Ministry of Construction, Housing and Utilities of the Russian Federation carry out the monitoring function of achieving goals and solving the tasks of the strategy.

Under the conditions of increasing an increase in the number of man-made disasters that have a powerful negative impact on the environment, leading to environmental pollution by various toxic elements, the problem of obtaining environmental safety is an acute problem (Fink et al., 2018). It is quite difficult to find information on the actual values of performance indicators in the public domain despite the social importance of the HCS development strategy and the necessity to monitor the implementation of benchmarks.

For example, the indicator of the provision of the population with drinking water that complies with sanitary and epidemiological standards is not available on the websites of state statistics. The planned value of the indicator had to be 75.5% at the end of 2019, according to the strategy. Information on water quality is presented on the website of the State Information System of Housing and Communal Services (a/n.d.). The information provided is not comparable to the strategy indicator because the data is presented in the context of sources and water supply and the strategy indicates proportion of population. The actual value of water that meets sanitary standards is 82.2%. However, this indicator is below the national average in 31 out of 85 regions of the Russian Federation.

The values of the indicator “the level of losses during the operation of heat supply networks” and “the share of borrowed funds in the total amount of funds allocated for capital investments in utility systems engineering” are presented on the state statistics website. The target and actual values of these indicators are presented in Table 1.

The indicator “level of losses during operation of the heat supply networks” was not fulfilled for 2016, 2017, and 2018. The indicator “the share of borrowed funds in the total volume of

funds aimed at capital investments in engineering systems of communal resources” was significantly exceeded in 2016, but there was a significant lag in 2017 and 2018.

Table 1: Planned and actual values of individual indicators of the HCS development strategy until 2020

Target	2016		2017		2018		2019		2020	
	plan	fact	plan	fact	plan	fact	plan	fact	plan	fact
The level of losses in heat supply networks, %	10.7	11.8	10.5	11.2	10.3	12.5	10.1	N/A	9.9	N/A
The share of borrowed funds in the total amount of capital allocated for capital investment in engineering systems of communal resources, %	21	30.95	30	22.99	30	22.12	30	N/A	30	N/A

Source: Government of the Russian Federation, 2016; Federal State Statistics Service of the Russian Federation, 2020 (<https://www.gks.ru/>)

Plotikova and Sorokina (2019) give the values of the indicator “the share of expenses on payment of housing and communal services in total family income”. So, for the 2016, the fact value was 10.1% with the desired planned value less than 12.1%; in 2017 the fact value was 9.7% with the planned value less than 11%, but in 2018 the fact value amounted to 11.4% with the planned value less than 11%.

Information on the performance of the strategy indicators on the progress of the overhaul is presented on the website of the State Information System for Housing and Communal Services (b/n.d.), the data are given in Table 2.

It should be noted that the values of the overhaul indicators presented in Table 2 do not reflect the actual values, but reflect the values of the short-term plans of the overhaul programs. As it can be seen from the table, the values of short-term programs are significantly less than strategic indicators, hence, it can be concluded that this indicator of HCS development strategy is not fulfilled.

Table 2: Planned and actual values of overhaul indicators until 2020

Target	The total area of residential buildings, in respect of which major repairs were carried out within the timeframes specified in a plan of the implementation of regional capital repairs programs (thousand sq. m)	
Year	In HCS development strategy	Short-term plans for the implementation of capital repair programs
2016	78,000	45,286
2017	97,000	65,547
2018	119,000	72,719
2019	138,000	109,623
2020	158,000	45,511

Source: State Information System for Housing and Communal Services (b/n.d.)

Judging from an analysis of the available information on the performance of the indicators of HCS development strategy, it can be concluded that the values of most of the planned indicators have not been achieved. Significant deviations are observed in implementation the HCS development strategy. Thus, the presence of a number of problems can be observed in the evolutionary development of the housing sector in Russia.

4. Reasons and factors hindering the achievement of HCS development goals

Using the induction method, the main causes and factors that impede the achievement of the goals of the HCS strategic development can be formulated. These cases include the following issues.

Strategic goals are not formulated according to SMART criteria (Specific; Measurable; Achievable or Attainable; Relevant; Time bound). The statement of goals as “improving HCS quality and reliability” and “ensuring HCS availability for the population” is not specific. Perhaps only 5 out of 10 performance indicators are consistent with the goals of the strategy for the same reason. For example, it is not clear how the indicator “share of borrowed funds in the total volume of funds allocated for capital investment in utility systems engineering” is associated with the declared development goal. The attainability of the set values of individual indicators is doubtful. For example, the value of the indicator “level of utilities fees collection” should be 98% from 2018 and is a super-task in such a short time and affects the solution of more diverse socio-economic problems in the country. Thus, the goal setting itself needs to be further developed.

Inconsistency between goals and objectives. All sub-problems of the development of the housing and communal services sector are divided into groups: residential building management; overhaul of apartment buildings; elimination of emergency housing stock; modernization of housing and communal services; cold water supply and sanitation; hot water supply; heat supply; waste management; state information system of housing and communal services; social politics; personnel policy; public control. For example, the block for managing apartment buildings indicates such tasks as increasing the efficiency of mechanisms for collecting debts from debtors that lead to the achievement of the stated goals only indirectly in our opinion. A solution to this problem is necessary, but it should not be in focus achieving declared strategic goals. Quite a lot of sub-tasks are described as already implemented activities that have begun before the adoption of the strategy. A huge number of subtasks and activities (more than 100) leads to a lack of focus on achieving the main development goals. Many tasks are formulated non-specifically, for example, there are wordings “will be determined ...” or “it is advisable to work out ...” For example, one of the subtasks in the heat supply block is written like “one of the possible options for regulating the heat energy market is the method ...” These formulations express only assumptions but do not formulate specific tasks.

Inconsistency of performance indicators with development goals and objectives or their complete absence. Among the 10 key indicators, only 5 indicators give an assessment of the achievement of the main development goals; the rest of them characterize the effectiveness of development in the stated goals and directions only indirectly. Indirect indicators include level of collection of utility bills; level of technological losses during transportation through cold water networks; level of technological losses during transportation through heat supply networks; share of borrowed funds in the total volume of funds allocated for capital investments engineering systems of communal resources; transfer to business, in which the

state's participation is more than 25 percent, under concession agreements, of all state housing and communal services facilities in respect of which they are ineffectively managed. For example, there are no indicators for the group of subtasks "state information system of housing and communal services" in the strategy. In the block "management of apartment buildings", it is directly pointed that customer service quality indicators will just be determined. A year later these indicators were reflected in the normative act Order of the Ministry of Construction, Housing and Utilities of the Russian Federation No. 1679/pr of December 18, 2017 "On approval of the methodology for determining the quality index of housing and communal services of the subject of the Russian Federation". For example, regarding the indicators of the "heat supply" block, the development strategy says that indicators of reliability, quality and energy efficiency for organizations providing heat supply will be formed for a long-term regulation period. Despite the fact that this development strategy is approaching the end of its implementation, individual indicators still do not have a methodological basis for their calculation and determination. For example, the method MR 2.1.4.0143-19. 2.1.4 "Drinking water and water supply in inhabited areas" was approved by the Chief State Sanitary Doctor only in March 2019. It is methodology for assessing the improvement of the quality of drinking water supplied by centralized drinking water systems. Methodological recommendations, which forms the methodological basis for calculating one of the main declared development indicators "the proportion of the population consuming drinking water, the quality of which meets sanitary and epidemiological standards, taking into account the total population provided with centralized water supply services."

Lack of available information on the progress of the implementation of the HCS development strategy. As mentioned earlier, the study encountered difficulties in obtaining data on the actual values of performance indicators. The state information system for HCS and the website of the Ministry of Construction, Housing and Utilities of the Russian Federation do not contain information on the implementation of development plans but, despite this, a draft HCS development strategy 2035 is announced.

Low efficiency of development goals implementation. This conclusion can be made on the basis of a significant number of performance indicators that have not reached the planned values or have not been measured at all. For example, from year to year there is a lag in terms of the total area of residential buildings in which major repairs have been done within the timeframes specified in the regional repair programs (see Table 2). Thus, the low efficiency of solving individual development problems is shown.

Considering the results of a study of the problems of the development of the housing sector, it can be concluded that the effectiveness of strategic management is low. Even though a lot of theoretical work is devoted to strategic controlling, the adopted housing and communal services development strategy has a number of shortcomings, both in development and implementation. In some scientific studies, the authors propose private concepts of controlling in the sphere of housing and communal services (Voronin, 2017; Kemaykin, 2016). These controlling concepts are focused on coordination and integration of strategic and operational management processes. Based on the research data, the technology for the formation of a HCS controlling system can be imagined as consisting of the stages presented at Figure 1.

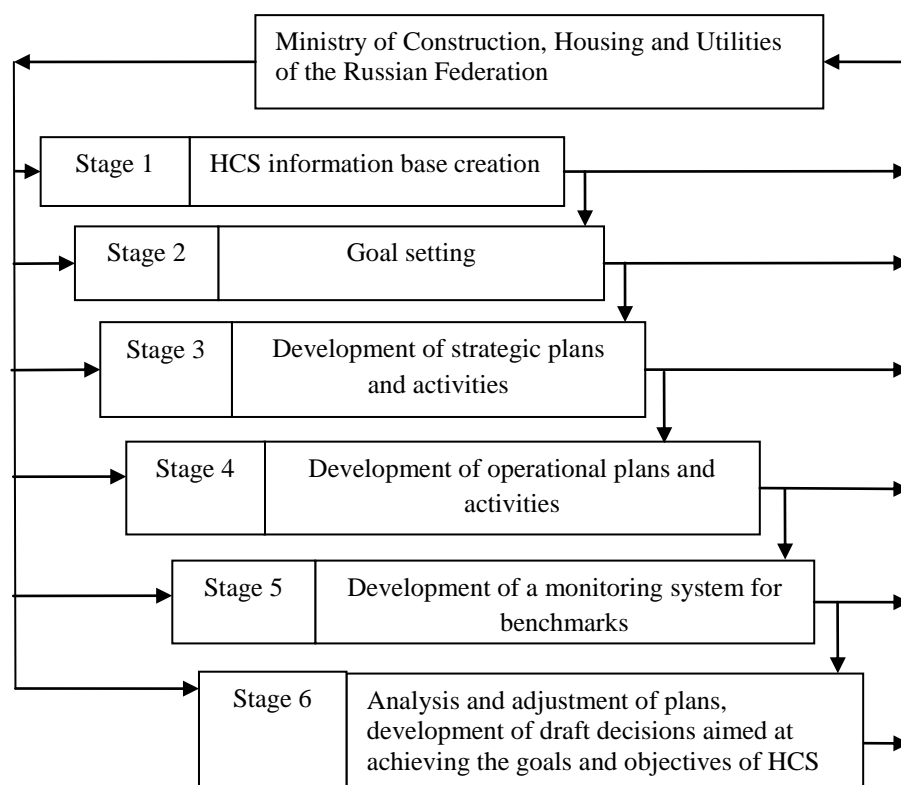
In accordance with the technology for the formation of a controlling system for HCS, the problem of formulating strategic goals relates to the second stage of the technology: "Goal setting". At this stage of strategic planning, it is important to observe the principle of unity of

the main goal, otherwise the hierarchical relationship between tasks and goals will be lost. For the correct formulation of the development goals of HCS, it is especially important to conduct a thorough preliminary assessment of all segments of the housing and communal services in order to identify those segments that can become the main development potential.

The discrepancy between the tasks and goals is correlated with the third stage of controlling technology: “Development of strategic plans and activities”. The maximum correlation of goals and objectives allows focusing and more efficient usage of resources on optimal ways to achieve strategic goals and thereby reduce losses on the way of development of housing and communal services.

Development problems associated with the quality of the development of performance indicators and the lack of available information on the progress of the strategy implementation belong to the fifth stage of the controlling technology–“Development of a monitoring system for benchmarks”. Monitoring of the implementation of the goals and objectives of the HCS development is aimed at the feasibility of their implementation and assessment of the achievement of strategic goals and is an informational basis for adjusting the content, resources and execution of planned tasks and activities. The monitoring system includes the development of performance indicators and the methodological basis for their determination. It is very important to develop and ensure systematic continuous monitoring of the implementation of housing development plans. Information on the values of the performance indicators of the HCS development strategy, obtained as part of monitoring, allows performing a forward-looking analysis and evaluating the results.

Figure 1: Technology for the formation of a controlling system for HCS



Source: own elaboration

The problem of low efficiency in implementing development goals relates more to the sixth stage of controlling technology: “Analysis and adjustment of plans, development of draft decisions aimed at achieving the goals and objectives of the housing and communal services”. Based on the analysis of monitoring data of control indicators, corrective management decisions should be developed, and they will eliminate the causes of deviation of indicators and ensure the implementation of tasks and goals achievement. A significant deviation of the benchmarks allows adjusting the plans by revising the tasks and activities, as well as adjusting the plan indicators taking into account the changed conditions.

Thus, having superimposed the results of the identified problems of the HCS development on the presented controlling technology, it can be concluded that there are some violation or incorrect execution of individual stages of the technology.

It is possible to rank problems by their importance using a theoretical ranking method and a comparison of HCS identified development problems with the technology of forming a controlling system (see Table 3).

First of all, attention should be paid to goal setting, to assess the current state of the housing sector and to formulate strategic development goals more specifically. After this it is necessary to align the hierarchy of sub-goals, tasks and activities. The special attention should be paid to the formation of a monitoring system for development plans, the development of a system of performance indicators and the methodological basis for their determination, the regularity of collection and analysis of these indicators. Development of corrective

management decisions should not be neglected, and sometimes, if it is necessary to revise goals, objectives and performance indicators during implementing development goals.

Table 3: Ranking development problems by their importance

By severity (from the most important issue)	The problem of the development of HCS
1	strategic goals are not formulated according to SMART criteria;
2	inconsistency between goals and objectives;
3	non-compliance of performance indicators with the goals and objectives of development or their complete absence; lack of available information on the implementation of the HCS development strategy;
4	low efficiency of implementation of development goals;

Source: own elaboration

5. Conclusion

In this paper, we studied the current directions of development of the HCS sector and identified priority problems that need to be addressed. The current direction of HCS development is determined by the HCS development strategy in the Russian Federation and is enshrined in normative legal acts. Examining information on the performance of development strategy indicators, it can be concluded that the values of most of the planned indicators are not achieved. It is confirmed by the presence of a lot of problems in the implementation of the development plan for the housing sector in Russia.

The main problems of HCS development include the following: the formulation of strategic goals; mismatch between goals and objectives; non-compliance of performance indicators with the goals and objectives of development or their complete absence; lack of available information on the implementation of the HCS development strategy and low efficiency of implementation of development goals. Among the priority tasks, it is necessary to carry out the exact formulation of goals that are based on assessments of the current state of the sphere. Also, it is necessary to build a hierarchy of sub-goals, tasks and activities.

In general, it can be concluded that the effectiveness of strategic management is low and the practice of applying modern controlling tools is absent during the realization of HCS development plans. Complete elimination of development problems or their reduction will increase the efficiency of the sphere and, as a result, it will improve the quality of services provided by the housing and communal services.

Knowledge of the problems of HCS sector development is of theoretical and practical importance in matters of HCS development efficiency. In the future research, it is necessary to use the ranking of the importance of development problems on the example of the regions of the Russian Federation and to study its influence on the subsequent stages of the technology of the formation of HCS. The practical significance is in the fact that the results of the study can be used to clarify goals, objectives, and adjust activities to accelerate the development of the industry.

References

- Borja-Vega, C., Morales, E. E. G., Gonzalez, J. A. (2019) "Incidence of Subsidies in Residential Public Services in Mexico: The Case of the Water Sector", *Water*, Vol. 11, No. 10, p. 2078, <https://doi.org/10.3390/w11102078>
- Chatzivasileiadi, A., Ampatzi, E., Knight, I. P. (2017) "The Implications of Demand Response Measures and Electrification of Transport on UK Household Energy Demand and Consumption", *9th International Conference on Sustainability and Energy in Buildings*, Vol. 134, pp. 89–98, <https://doi.org/10.1016/j.egypro.2017.09.530>
- Dedusenko, E. A. (2017) "Hospitality Investment Environment in Russia", *Journal of Environmental Management and Tourism*, Vol. 8, No. 2, pp. 291–300.
- Fink, A. D. et al. (2018) "The Radiological State of the Soil Cover as the Most Important Criteria for the Estimation of the Environment Pollution", *Gigiena i sanitariya*, Vol. 97, No. 2, pp. 113–116, <https://doi.org/10.18821/0016-9900-2018-97-2-113-116>
- Government of the Russian Federation (2016, January 26) Order No. 80-r "On approval of the Strategy for the development of housing and communal services in the Russian Federation for the period up to 2020". Available at: <<http://base.garant.ru/71313950/>> [Accessed: January 25, 2021]
- Kemaykin, N. K. (2016) *Development of a mechanism for the formation of a controlling system of enterprises of housing and communal services of the municipality*, Doctoral dissertation, Moskovskiy gosudarstvennyy tekhnicheskii universitet imeni N.E. Baumana.
- Komov, V. E., Korneeva, V. P., Lyashenko, M. S. (2019) "Analysis of the Current State of the Housing and Utilities Sector and Identification of the Main Problems and Priorities for the Development of Housing and Communal Services in the Russian Federation", *Vestnik Tul'skogo filiala Finuniversiteta*, Vol. 1-2, pp. 140–143.
- Latief, Y. et al. (2017) "Integration of Net Zero Energy Building with Smart Grid to Improve Regional Electrification Ratio Towards Sustainable Development". In: *IOP Conference Series: Earth and Environmental Science*, Vol. 109, No. 1, IOP Publishing, p. 012041, <https://doi.org/10.1088/1755-1315/109/1/012041>
- Laužikas, M. and Miliūtė, A. (2020) "Impacts of Modern Technologies on Sustainable Communication of Civil Service Organizations", *Entrepreneurship and Sustainability Issues*, Vol. 7, No. 3, pp. 2494–2509, [https://doi.org/10.9770/jesi.2020.7.3\(69\)](https://doi.org/10.9770/jesi.2020.7.3(69))
- Menezes, T. R., Souza, J. F. (2017) "Transportation and Urban Mobility in Mega-Events: The Case of Recife", *Procedia-Social and Behavioral Sciences*, Vol. 162, p. 218227, <https://doi.org/10.1016/j.sbspro.2014.12.202>
- Meshcheryakova, T. (2017) "Conceptual Provisions of The Implementation of Energy Saving Measures in the Residential Facilities". In: *MATEC Web of Conferences. International Science Conference SPbWOSCE-2016 "SMART City"*, Vol. 106, EDP Sciences, p. 06021, <https://doi.org/10.1051/mateconf/201710606021>
- Miroshnikova, T. and Taskaeva, N. (2017) "Influence of Town-Planning on Social and Economic Progress of The Subject of The Russian Federation in Aspect of Regional Management". In: *MATEC Web of Conferences. International Science Conference SPbWOSCE-2016 "SMART City"*, Vol. 106, EDP Sciences, p. 08093, <https://doi.org/10.1051/mateconf/201710608093>
- Mirzayeva, G. et al. (2020) "The impact of mega-events on urban sustainable development", *Entrepreneurship and Sustainability Issues*, Vol. 7, No. 3, pp. 1653–1666, [https://doi.org/10.9770/jesi.2020.7.3\(15\)](https://doi.org/10.9770/jesi.2020.7.3(15))

- Nizhny Novgorod region state housing inspection (2019, January 18) “Information on the implementation of state control (surveillance) and municipal control for January-December, December 2019”. Available at: <http://file.gzhinn.ru/04/Result_2019_nadzor.pdf> [Accessed: February 1, 2021]
- Plotnikova, I. A. and Sorokina, I. V. (2019) “Modern Housing and Communal Services Development Problems”, *Problemy razvitiya territorii*, Vol. 6, No. 104, pp. 52–68, <https://doi.org/10.15838/ptd.2019.6.104.4>
- Reizenbuk, K. et al. (2019) “Application of Distributed Computing in Developing Architecture of Intelligent Information System for Automated Stock Exchange Trading”, *Journal of Advanced Research in Dynamical and Control Systems*, Vol. 11, No. 08-Special Issue, pp. 2549–2555.
- Rodnyansky, D. et al. (2019) “Methods to Evaluate Public Administration Efficiency: The Case of the Volga Region”. Available at: <<https://dspace.kpfu.ru/xmlui/handle/net/156822>> [Accessed: March 10, 2020]
- Saralinova, D. S. (2019) “Prospects for the Activities of State Enterprises in the Field of Housing and Communal Services”, *Vestnik Chechenskogo gosudarstvennogo universiteta*. Vol. 35, No. 3, pp. 37–42.
- Semenistaya, E. S. and Leonova, A. V. (2018) “Approaches to Solving the Problem of Implementation of the Digital Economy (Including Digital Energy) in the Russian Federation”, *Engineering journal of Don*, Vol. 4, No. 51, p. 141.
- Shalbolova, U. and Kenzhaliyeva, Z. (2018) “Main Directions of Smart City Development in the Republic of Kazakhstan”. In: *6th International Scientific Conference on Integration, Partnership and Innovation in Construction Science and Education*, Vol. 251, EDP Sciences, p. 05042, <https://doi.org/10.1051/mateconf/201825105042>
- Skripnik, O. (2017) “Management of Reforming of Housing and Communal Services”. In: *IOP Conference Series: Earth and Environmental Science*, Vol. 90, EDP Sciences, p. 012142, <https://doi.org/10.1088/1755-1315/90/1/012142>
- State Information System of Housing and Communal Services. (a/n.d.) “The Results of the Federal State Sanitary and Epidemiological Surveillance of Drinking Water Quality in the Constituent Entities of the Russian Federation, in Accordance with the Form of Federal Statistical Monitoring No. 18”. Available at: <<https://dom.gosuslugi.ru/#!/map/water-quality>> [Accessed: October 15, 2020]
- State Information System of Housing and Communal Services. (b/n.d.) “Fulfillment of short-term plans for the implementation of capital repair programs”. Available at: <<https://dom.gosuslugi.ru/#!/crp-plans-execution>> [Accessed: October 15, 2020]
- Subetto, A. I. (2018) “The Systemic Problem of The Development of Housing and Communal Services in Russia in the Context of the Law of Energy Value”, *Teoreticheskaya ekonomika*, Vol. 2, No. 44, pp. 66–72.
- Tkachuk, V. F. (2018) “Analysis of the Historical Premises of the Modern Housing and Communal Services of Russia”, *Nauchnye Izvestiya*, Vol. 13, pp. 7–11.
- Urozhaeva, T. (2016) “Problems of Reforming of Housing and Communal Services of Cities of Irkutsk Region in the 1990s”, *Journal of Siberian Federal University. Humanities and Social Sciences*, Vol. 4, pp. 923–939, <https://doi.org/10.17516/1997-1370-2016-9-4-932-939>

- Usmanova, T. Kh. (2018) “Projects for the Development of Interaction between the Fuel and Energy Complex and Housing and Communal Services: Problems of Forecasting and Management”, *Problemy prognozirovaniya*, Vol. 3, No. 168, pp. 67–74.
- Verenich, I. V. and Chelysheva, O. V. (2008) “Object, Subject and Tasks of the Judicial Construction and Technical Examination”, *Ekspert-kriminalist*, Vol. 2, pp. 39–41. Available at: <<https://wiselawyer.ru/poleznoe/32867-obekt-predmet-zadachi-sudebnoj-stroitelno-tehnicheskoy-ehkspertizy>> [Accessed: January 12, 2021]
- Verenich, I. V. (2008) “Interrogation of an Expert and Specialist in the Investigation of Crimes in the Field of Construction”, *Izvestiya Rossiyskogo gosudarstvennogo pedagogicheskogo universiteta im. A. I. Gertsena*, Vol. 80, pp. 36–40. Available at: <[https://lib.herzen.spb.ru/media/magazines/contents/1/37\(80\)/verenich_izv37_80_p36_40.pdf](https://lib.herzen.spb.ru/media/magazines/contents/1/37(80)/verenich_izv37_80_p36_40.pdf)> [Accessed: November 25, 2020]
- Veselova, A. O., Khatskelevich, A. N., Ezhova, L. S. (2018) “Prospects to Create ‘Smart Cities’ in Russia: Classification of Problems and Their Solutions”, *Perm University Herald. ECONOMY*, Vol. 13, No. 1, pp. 75–89, <https://doi.org/10.17072/1994-9960-2018-1-75-89>
- Voronin, P. M. (2017) *Strategic Controlling in The Management of Municipal Solid Waste Organizations*, Doctoral dissertation, Moskovskiy gosudarstvennyy tekhnicheskii universitet imeni N.E. Baumana.
- Wyrwa, A. (2019) “City-level Energy Planning Aimed at Emission Reduction in Residential Sector with the Use of Decision Support Model and Geodata”. In: *IOP Conference Series: Earth and Environmental Science*, Vol. 214, No. 1, EDP Sciences, p. 012039, <https://doi.org/10.1088/1755-1315/214/1/012039>