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METHODOLOGY OF CARRYING OUT SOCIAL EXPERIMENTS IN VIRTUAL SPACE

SUMMARY. This article gives a justification of the methodology of social experiments in virtual space, revealing the main alternatives in statement and acceptance of administrative decisions by means of the new automated information technologies, to choose the most effective ones, and to transfer the results of management to real activity in modern society.

KEY WORDS. Social experiment, virtual space, information technologies, sociological information range.

Scientists consider that modern information technology and its basic elements such as computerization and information may be viewed as a kernel of a developed technological revolution. Modern society has already entered an informational stage of development, and is characterized not only by qualitatively new industrial apparatus based on computerized instruments of labor and information technology, but also by new social relations which are formed by social experiments on real people without analysis of their social productivity. Experiments on people on the scales of separate persons, social groups, and society as a whole are actually being done. And no favorable social forecasts of administrative actions by those in power can excuse a deterioration of the basic indicators of life of the population, in particular a decrease in the level and quality of life of people, the implementation of various, frequently inconsistent and moderately effective legislative initiatives.

It is argued that the use of means of information processing, analysis and transfer, i.e. the implementation of new information technology, can put the managerial process on a new qualitative level and will give it a chance to organize the forms of people's living activities effectively, having caused thereby perspective development in the human community.

In turn, automation and management computerization allow to generate a new approach to understanding social processes and social practice in the present period of scientific technical progress. Thus, the field of automated information technologies and virtual information becomes the basis of decision for problems of optimization of the management of any processes and interactions of administrative structures. Using a virtual sociological range with the new automated information technologies of management, it is possible to carry out social experiments imitating the modeling of management in the legislative activity of a city, region, and Russia as a whole, to construct optimum forecast models, to show their productivity, and then to transpose the received results of the experiment, in the form of mechanisms, onto the

real life of the society. The basic characteristics of the category "social experiment" allow the realization of a technology of "virtual social experiment".

Z.T. Toshchenko, taking as the basis of his research works by R.V. Ryvkina and A.V. Vinokur, defines social experiment first as a way of approbation of new forms of social organization and optimization of the practice of social management; second as artificial construction of a situation for the purpose of reception of new knowledge enriching social practice; third as the method of studying social phenomena and processes, carried out by supervision of the change of social objects under the influence of factors which supervise and direct their development [1; 151].

The sociological encyclopedia defines the concept of "social experiment" as a method of empirical knowledge with the help of which, in controllable and operated conditions which are often specially designed, we receive knowledge concerning links, mostly causal, between phenomena and objects, or find out new properties of objects or phenomena [2].

E.M. Babosov underlines that the social experiment is a sufficiently specific method in management, and its realization assumes change in a current situation on the basis of information on quantitative and qualitative change received from indicators of activity of the operated social object as a result of influence on it entered or altered by the experimenter and new factors controllable (operated) by him [3; 66].

V.Y. Elmeev, V.G. Ovsyannikov consider social experiment as a specific way of introduction of theory in practice. Thus, they allocate certain features inherent in it caused by the specificity of social processes and objects. This specificity, in their opinion, is shown first on the higher qualitative level of complexity of social objects; hence, in the diverse causal dependence of changes in these objects; second in ineradicable and special intervention of the experimenter in objects of research when he can take an active part in the experiment; third in the definition of methodological and evaluational installations of sociologists [4].

Thus, any hypothesis in the research of social objects should be verified by a social experiment which actually gives the chance to simulate mentally a real situation of public ability to live with the purposes and problems of its subjects, to reveal the basic communications and interactions between its elements, to estimate conditions and factors influencing its results, to prove those or other alternatives of realisation of the purposes and problems of public subjects, to predict the optimal results of conducted actions. Information technology promotes effective implementation out of social experiments not in public but in virtual space, with the further carrying-over of its results to the real life of a modern society.

In political sociology, which studies interactions of political and social systems in the course of functioning and power distribution, interactions of the individual, society and the state [5], especially relevant therefore is a method of social experiment in virtual space, as it is fairly difficult to make social experiments on real large political and social structures — states, political parties, society, separate persons and social groups. Therefore R.A. Safarov defines social experiment in the field of the state and the law as a preliminary practical check of important socio-political actions to find out their expediency and efficiency and their possibilities of wide application in subsequent practice [6]. Such a check is expedient in special virtual sociological ranges with new automated information technologies and imitative

modeling of the management of the activity of any social object, the construction of optimum forecast models and estimations of their productivity.

It is well-known that the head, making administrative decisions, deals first of all with so-called weakly structured problems. Such problems lean against initial data which is difficult to formalize, the structure of their resolution is not defined accurately and each specific case has its specificity.

The majority of management problems can be referred to such types of weakly structured problems. In this case the actions of the head are unpredictable, draw on creative, heuristic, intuitive components of intellectual work, various variants of decisions thus are mentally played out, the given information is mentally analyzed, the rate of the resolution of a problem is set by the researcher. It is not excluded that decisions are not accepted in general.

To solve weakly structured problems on the computer would imply machine control systems with such creative intellectual functions as parallel (simultaneous) use of memory, training and multilevel decision-making in reply to "indistinct commands" that are not yet available in the present generation of computers, although certain developments in this direction are moving fast. On the other hand, even the future generation of computers will not be able to compete with human reasoning in its universality, creative possibilities and level of intellectual functions.

Certain stages of acceptance of administrative decisions can be studied on the computer in light of the newest developments in this field, using new image recognition technology, heuristic methods in knowledge theory, that is by the development of automated systems of high school management to carry out the statement of administrative problems in created virtual ranges each time for the resolution of such problems. The basis of such ranges will be a database and knowledge among which the analysis, statement and resolution of the problem will be carried out. At the heart of such techniques is the new image recognition technology developed by Novosibirsk school of the scientific mathematicians-theorists, used by Tyumen scientists in the resolution of administrative problems [7].

So, for example, in virtual space it is possible to display a social experiment of city management as follows (Fig. 1) [8]:

The information basis of the experiment is the information base created at the stage of social diagnostics. In such a base the objects of management are presented as sets of social indicators, and indexes formed on them are described. Administrative decisions are accepted further on the basis of these social indicators grouped into indexes. This way the socio-informational range of the initial data of management is created in a control system. This range represents a set of system elements of the object characterized by a set of sociological signs, including socio-political, socio-economic, socio-cultural signs etc. Indexes as a group of social indicators which are used further in the construction of control system forecast models shed light on this range.

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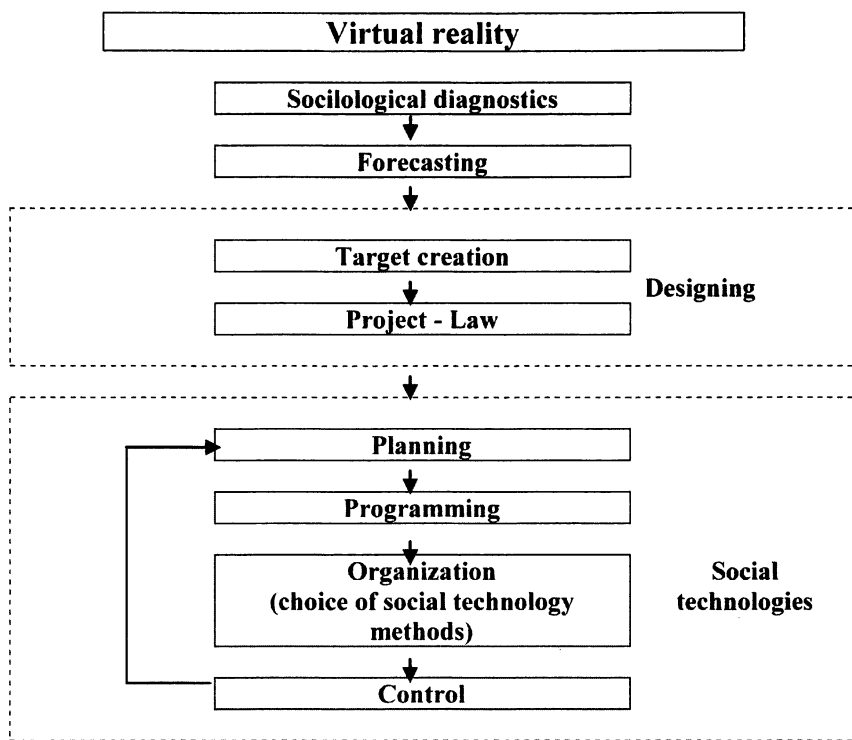
Fig. 1. Social experiment structure

Thus, substantiation of the methodology of carrying out social experiments in virtual space is necessary, beginning with the organization of virtual ranges, carrying out social experiments on them, during which time and management stages will be simulated by social objects up to the acceptance of administrative decisions and control of their productivity and efficiency. At first the management purposes, the general global and private elements are defined, as are administrative problems which need to be solved for the achievement of the goals in view. Further definition of the necessary initial information in an existing databank and gathering of additional information, its formalisation and input into a databank are carried out. One of the means of definition of the purposes of management, for the resolution of administrative problems of the necessary information and its gathering, is the method of sociological research. Then the range on which statement of an administrative problem is carried out is formed.

Computer technologies create alternative variants of the decision of such problems, and depending on the surrounding conditions of functioning process choose the most effective way of achievement of the purposes put before management.

Thus, each time in the resolution of any administrative problem at first occurs a statement of the given problem in a range, and then comes the resolution of the problem in the field of research. Acceptance of the administrative decision is automated, carried out by a choice of the most effective variant of the solution

to a problem from a set of alternative variants defined in a training range in the course of carrying out a business simulation on the computer.

In the course of social experiment the knowledge base is created — a base of alternative variants of means of resolution of an administrative problem, taking into account various signs of the management object, surrounding conditions in the functioning of investigated and operated process.

If necessary, when any variant of the base of alternatives does not satisfy the degree of accuracy of achievement of an object in view, managerial process is entered into by the expert — the head.

Social experiments in virtual space are innovative technology in the control system of any social object. By now, as a rule, technologies are used, the heuristics of which are checked against concrete social groups and separate persons in their interaction with the subjects of management. Such a system, working on a "trial and error" principle, is fraught not only with inconsistency of results, but also with lack of trust in such methods on the part of the population of the country. Often in the course of such experiments on "live people", there are considerable financial expenses, structural-organizational changes which do not bring advantages, and rather harm the social processes than help it. Modern technologies allow to perform experiments in virtual space with an authentic check of their positive results, then the introduction of approved, obviously positive techniques causes the potential development of a control system of public life.

In a virtual system, the promotion of hypotheses, the choice of experimental and control objects (or conditions of objects), the definition of neutral, factorial and control characteristics of objects are possible. On the basis of it acknowledgement or refusal of hypotheses of cause and effect, concrete types of innovative social technologies will be reached.

Thus, at the stage of planning, preparation and decision-making, the information-forecast model is created, i.e. statement of an administrative problem in a socio-informational range and its subsequent resolution. The results of execution of the decision are formed at a stage of the organization of execution of the decision. The object condition thus changes, this information on its condition is studied by the subject of management. If an object change is not adequately put by the subject to the purposes and defined problems, the subject corrects the forecast model at a stage of control of execution of decisions. Feedback is observed: not only the subject influences the object, but also the object influences the subject.

The constructed model gives the chance of acceptance of administrative decisions on improvement of quality of management by social objects with the use of computer technologies, to carry out statements and the resolution of an administrative problem in the automated way, to give a choice of various alternative variants of decision-making on the PC on the basis of the developed criteria, that is on a socio-informational range to make possible social designing, social experiments, transferring their optimal results into social space.

At the stage of sociological diagnostics the informational base of a control system is created by a social object, during a prediction phase the information forecast model is created.

The purpose of the creation of a model of management carrying out lies in a fairly broad series of computing experiments with the assistance of experts and head-

experts to choose a well-founded strategy of development or some recommended set of such strategies for persons or bodies making real decisions with practical advantages for subjects of social processes in the conditions of uncertainty. Thus compared, modelling experiments should be qualitatively various, they should play a role in some substantial scenarios.

Now it is possible to organise virtual range in any administrative structure, to a certain degree it being the form of advancing reflexion of a social reality.

Modern information technology, the modern theory of a virtual reality and the occurrence of elements of a virtual civilisation give the opportunity to create a new information society with a new social structure where it will be possible to realize the potential of the person to its full extent, to reach the material and spiritual satisfaction of needs of individuals. We can only reach it when we will organize the management of a society, its functioning in the informational field representing advancing thought on social space.

The information field does not simply fix the specificity of social space, it creates the new parameters of this social space. And the problem of the manager is to transfer these parametres into existing social space. With active influence on social space arises the question of the measurement of all things in a society. It is clear that the person, his/her requirements, interests and acts are considered as this measure. All, that is to the advantage of a person, is positive, and that which is to their detriment is negative. The problem of the management of any administrative structure, in particular an imperious one, also consists in carrying over the positive influence of the information field into the social one having realized thereby an effective control system of social processes.

REFERENCES

1. Toshchenko, Z.T. Sociology of management. M.: the Center of social forecasting and marketing, 2011. 300 p.

2. Sociology: the Encyclopedia / Ed. A.A. Gritsanov, V.L. Abushenko, G.M. Evelkin, G.N. Sokolova, O.V. Tereshchenko. Minsk: Interpressservice; the Book House, 2003. 1312 p.

3. Babosov, E.M. The sociology of management. 5 ed. Mn.: TetraSystems, 2006. 288p.

4. Elmeev, V.Y, Ovsyannikov, V.G. Applied sociology. S-Petersburg: Publishing house of St.-Petersburg state university, 1999. 296p.

5. Bourdieu, P. The sociology of Politics, translation from FR / Ed. N.A. Shmatko. M.: Socio-Logos, 1993. 336 p.

6. Safarov, R.A. Social experiment and problems of the state and the law // Magazine "the Soviet state and the law". № 10, 1964. P. 14-22.

7. Barbakov, O.M, Barbakova, K.G., Gavrin, A.S., Kostko, N.A. The skill of city management: social experiments in virtual space. Kurgan: Zauralye, 2005. 272 p.

8. Barbakov, O.M., Barbakova, K.G., Karnauhov, N.N., Levashov, V.K. and others. Knowledge as the factor of safety of a society. Tyumen: Vector Book, 2008. 320 p.