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Social engineering: challenges and opportunities

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Abstract

Social engineering as a field of science has undergone a stationary period, after which it has spread with new power in educational activities. The article analyzes the status of social engineer, combining its positions of an engineer and a sociologist. Within the framework of socio-engineering activity it is necessary to mention several directions, such as, management consulting, social construction (design, programming and planning), social engineering studies (analysis, diagnosis and examination), organizational and technological activity. They present the main ground in the field of management of social processes for the qualification of future employees. The authors suppose that socio-engineering activity in enterprises should be an integral part of functional management system, along with economic and technological control of production activity.

Keywords: engineer, social engineering, modelling, humanization, ethical function

1. Introduction

In the last decade social engineering reinforced its positions and became topical in the field of practical knowledge. With the improvement of social institutions in Russia gradual training of specialists is carried out for the field of engineering [7]. The profession of social engineer is becoming more and more popular.

But new trends in socio-engineering activities require appropriate education and training. The most popular of them are the organization of social work, management consulting, management team building, scientific and technological support etc.

In this article the authors hold the interpretation of social engineering as a practical activity, correlated with the implementation of engineering approach to old system transformation and new system creation (including social institutes, committees, and regional management systems).

Thus, it helps to avoid the monosemantic interpretation of the subject area and to take into account the diversity of views on some issues of social engineering. Future social engineer should possess such important characteristics as the ability to analyze problem situations, high intellectual ability, creativity, high personal and moral qualities, and the ability to interact.

First of all, professional activity of social engineers should be focused on specific social problems solution. Talking about the professional status of a social engineer, it is necessary to note that a specialist should combine the qualities of an engineer and a sociologist.

As an engineer, one should possess an engineering style of thinking as well as of activity. This presupposes the following characteristics: the ability to carry out engineering analysis, ingenuity, general specialization, expertise in the field of engineering, the ability to make decisions in a context of uncertainty, mathematical skills, knowledge, technology, and ability to transmit information about results obtained.

As a sociologist, he should be able to explain and analyze a variety of social processes and phenomena, to use the methods and principles of analysis, synthesis and processing of sociological research data, to organize the activities of sociological service, to develop software - methodical support of the research process.

There are four areas within the framework of socio-engineering activity: project - design, social engineering research (social engineer system analysis), consulting - managerial and organizational - technological activity.

In a narrower sense, some authors consider the socio-engineering activity, limiting its scope of activities of practical sociologist who works at the enterprise. Thus, its content is becoming narrower.

2. Social engineering

Social engineering is a more advanced and sophisticated form of practical activity of a sociologist, who is fully responsible for the management system of an organization [2]. Social and engineering research should be considered as a special form of socio-applied studies. First of all these studies are aimed at management and technology problems solution.

Socio-engineering research can be illustrated with projective, diagnostic, expertise and innovative research examples of social systems. Thus, they correspond to four types of research tasks:

- 1) The description of actual state of social object, social contradictions and issues definition, social diagnosis definition;
- 2) The determination of structural properties and parameters of social object, and possible ways of their practical use;
- 3) The identification of ways and forms of social projects implementation and social innovation introduction;
- 4) The expert examination of approved projects and solutions.

For the realization of above-mentioned tasks the methods of social objects and engineering analysis modelling are commonly used. [4] The content of these engineering methods can be specified with the help of the following procedures: description of a problem situation and justification of a problem; the formulation of goals and objectives of study; the construction of a model (normative, analytical, experimental or prescriptive) of social object; empirical testing of hypotheses; optimization and refinement of social object models, the presentation and delivery of practical recommendations.

With engineering - research training a specialist can work in different companies and organizations as an expert on social issues, the diagnostician or analyst. The qualification of social engineer-researcher corresponds to these criteria, that is to say, an engineer who is focused on the study of social systems and objects in terms of their possible transformation and creation under given conditions can control the situation in general [1].

The order of the second direction of social engineering specialization is design- engineering activity - includes changes in the existing social objects or in the creation of qualitatively new

systems [6]. This kind of socio-engineering activity differs from previous socio-engineering research in terms of form and content.

In the context of formal goals and objectives this sphere of activity contains not only practical implementation tools, but also the development of objects of social systems.

Social construction as a form of socio-engineering activity is directly included into management system. Mainly it is carried out during the stages of preparation of management decisions, and it can be expressed in different forms (planning, programming and social engineering).

The development of technologies and social projects and their implementation present the highest requirements to professional designers and constructors. According to intellectual content engineering - design activity is very similar to scientific activity.

Constructor-engineer is someone who is endowed with vivid and creative imagination, proclivity for innovation, aesthetic sense, variability and flexibility of thinking.

According to social construction the activity is aimed at the accomplishment of three important functions - aesthetic, economic and moral-ethical. The function of aesthetic social construction is to create the aesthetic appeal of social structures which forms the sense of beauty.

In the course of social projects development, constructor engineers are obliged to develop and awaken the sense of the people, who are their consumers. Social design experts are engaged in aesthetic design of social projects [8].

Economic function is responsible for the creation of new production of high quality, which has the properties of commodity and differs from all other production. Social engineering is subordinate to the accomplishment of this function, due to the creation of abundance, in order to meet different demands and needs of people in new resources and services.

Moral and ethical [3] function of social engineering is oriented to the humanization of social relations. It is formed between the employees in the process and as a result of project activities. It is also aimed at the prevention of social conflicts that arise during the implementation and creation of new things.

The moral and ethical meaning of social construction is manifested through the activity of organizational structures formation of management and staff on management systems implementation analysis. Organizational and technological activity includes the implementation of social technologies, projects and social innovations introduction.

Social technologists are mostly the specialists who work in the field of socio-engineering activity. Most often, social technologists play the role of main users of technology and design tools, created by constructor engineers.

But in order to have the ability to use these tools, they are required to have extensive scientific knowledge and qualifications. An engineer as well as a technologist, is required to have skills in business and organizational communication [10].

Apart from this, a specialist in social engineering is required to have the ability to follow the patterns prescribed by technological standards and to submit to technological discipline [9].

Such qualities as engineering skill and professionalism are obligatory. The most numerous group of professionals working in social engineering is a group of social technologists. For example: plant sociologists and psychologists, HR-managers who work in the divisions of companies.

Due to the decline in production and economic crisis burn out [5] in Russia the majority of these professionals started to work in other sectors of economy, mainly in commercial organizations, consulting companies, academic institutions and government agencies.

3. Conclusion

As a result, it can be concluded that for the effective development of social engineering in our country it is required to hire highly qualified social technologists who can participate in the process of management in enterprises, organizations and corporations.

The authors suppose that socio-engineering activity in enterprises should be an integral part of functional management system, along with economic and technological control of production activity.

In our country, the future of socio-economic transformation will largely depend on high professionalism of social engineers who work in various spheres of industrial and scientific activities.

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