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One approach to optimizing the measures of effectiveness of the university organization

Oktay Nusratov^a, Zeynal Jamalov^{b*}, Hajar Shikhaliyeva^a

^a*Institute of Control Systems of Azerbaijan National Academy of Science, Baku AZ1141, Azerbaijan*

^b*Baku State University, Baku AZ1141, Azerbaijan*

Abstract

The solution of the problem of optimization of the university organization is proposed on the base of using a fuzzy model of nonlinear mathematical programming. This fuzzy approach allows to aggregate the expert estimates of influence obtained at the initial stage and, thereby, to more accurately evaluate the measures of effectiveness of the university organization.

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1. Introduction

The educational market exerts influence on the whole system of higher education, and conducted liberal reforms support new responsibilities and freedoms to universities. In response to modern demands, university administrations have the opportunity to adapt new organizational structures close to those that are traditionally used in the business environment. In the process of adaptation universities adjust the strategic goals of their academic activity and, accordingly, make the necessary changes to their organizational structure. At the same time, the formation of new tasks and substructures, such as “*strategic management*”, “*marketing*”, “*project management*”, “*board of*

* Corresponding author. Tel.: +994-50-322-45-15, +994-70-322-45-15.

E-mail address: zjamalov@mail.ru

guardians”, etc., often occurs spontaneously. Therefore, by Asaul (2007) created new units (departments) of the university become “heavy” and “weakly structured”.

Total computerization and application of modern information technologies in the educational process, radically changing the scheme of knowledge transfer and teaching methods, have initiated the creation of new educational systems that are distinguished by their optimal structures. This allowed to ensure the necessary competitiveness of these systems in the market of educational services. Moreover, in modern socio-economic conditions, university management should not be limited only to academic activities, which undoubtedly is dominant in all cases. At the same time, many unit managers consider themselves fully prepared to determine the direction and methods for improving the management of department activities. Obviously, in modern conditions the university structure must be viable, flexible and dynamic. Therefore, for an effective functioning in the conditions of openness of the information and educational environment, the development of a scientifically based structure for the management of the educational process is a very actual problem.

2. Matrix management of university

In modern conditions, management of some universities is realized through software of leading IT-vendors, which implies the formalization of academic activity, as well as within structural and interpersonal relations. According to Asaul (2007) the starting point for such a formalization is the one shown in Fig. 1 matrix (hierarchical) structure of the university, which includes three levels of management: strategic, dispatching control and operational.

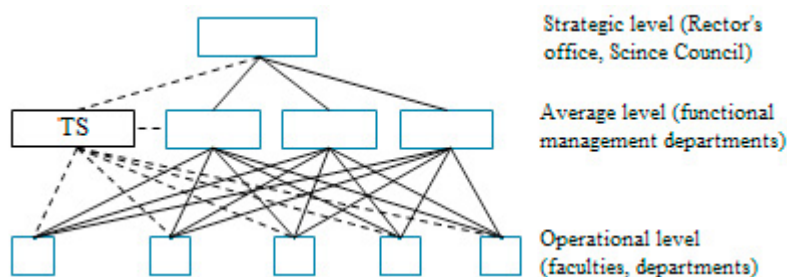


Fig. 1. Matrix management of university.

Assignment to the average level of the element “TS” (technological structure, which includes functional innovative units of the university) has a very conventional nature, because it differs from the components of the average level by character of performed functions, according to the principles and objectives of the applied operation. Departments of the average level perform mainly dispatching control and administrative functions, while the TS-function is to consolidate organizational arrangements aimed at determining the effectiveness of a particular type of university activity and, accordingly, optimizing its organizational structure.

In contrast to the operation of average level units, which is carried out according to the “linear principle”, the basis of TC-actions is the matrix (or program-target) management principle, which implies a network structure built on the base of double subordination of performers. According to Lankin and Gorelova (2011) this means, on the one hand, the subordination of executors to the immediate TS-officer, which provides personnel and technical assistance to the rector’s office, on the other hand, to the management of the university, which is endowed with the necessary mandate to carry out the management process of the university.

The availability of TS in the management structure can become the definitive condition in the gradual transformation of the university into the research and educational center, which will allow it to position and actively act on the educational market and, thereby, increase its competitiveness. Therefore, the main goal of TS-functioning can be formulated as organizational and scientific-methodological support of the innovative academic activity of the university. It should be based on the process of monitoring the effectiveness of the university units, and development of the scientifically based structure for managing the educational process.

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