

INNOVATION TENSION INTO POLYSTRUCTURAL OF SYSTEMS

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The system finds the essence only when functions, that is when it has dynamics. The structure represents certain single-step fixed mask of system. If we consider the temporary period of functioning of system, we derivation polystructure of system on this temporary period. Suppose polystructural organization Ps (in the further P-system) represents dynamical, compound, heterogeneous system consisting of several subsystems, generating in itself diverse on a nature resources. Each of subsystems has a set of resources (active means), essentially influencing on results of activity of P-system as a whole. The quantity of energy, which has the P-system, depends on presence of active means, represents potential function and called as resource potential γ_{ps} . Suppose consider, that the P-system is in some consistent (harmonious) state, at which the distribution of active means of subsystems which are included in P-system, is based on a structural proportion. The structural proportions reflect ratio between separate elements of system. In the equilibrium condition the structural proportions equals 1 and the resource potentials of subsystems are equal. As soon as the balance of P-system is broken, for example, at transition of system from one "harmonic" of a status in the following through intermediate "disharmony" of a status, the balance of resource potentials of subsystems is broken, arises innovation tension. Innovation tension creates the conflict between subsystems expressed as some law of structural tension $W(\gamma_s)=\delta_s$, which causes reorganization of all subsystems, forcing them again to come to an equilibrium status. The law of structural tension can be formulated as follows: Between two subsystems, which potentials γ_1 and γ_2 are equal, the equal opposite directed forces work. At change of one of potentials of a subsystem, the balance of forces is broken, and the gradient of forces represents innovation tension. The direction of change of a structural status of subsystems is determined by a rule innovation of choice $C_w(d) \subseteq D$, which defines set of the most preferable actions of elimination them disharmony of a status. Innovation of choice is distributed in continuum from introduction of innovations in subsystems up to active resistance to changes. Dynamics of reorganization of subsystems is defined by a rule of reaction $R_{ws} = (\gamma_s(t))dt$, which determines speed reaction of all subsystems on internal-structural of change (speed of convergence to a harmonious status) depending on internal potential of a subsystem.

The measure of stability of system is served by size of the moment of structural pressure resulting in change harmonious of proportions of system. Until then while harmonious of proportion is not changed, even if inside system there is a redistribution of proportions of potentials of subsystems, the system is considered steady.

The genera task of management of P-system formally can be formulated as follows: to generate allowable innovation tension, by change of a structural proportion of resource potentials of subsystems, for achievement of a steady harmonious status of P-system as a whole.