Accelerating Technology for Self-Organizing Networked Democracy

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In the “subject – self-developing reflexive-active system” paradigm (Lepsky, 2015) of cybernetics the networked collective movement is supported by information and communication technologies. For speeding up citizens’ decision making processes we propose to integrate these processes with the work of highly qualified expert groups and use the special convergent methodology of structuring information (Gubanov at al, 2014; Raikov, 2015). The goal of the convergent methodology is to reach decisions faster making sure that the views of all affected groups are included.

The post-non-classical type of scientific rationality covers the new step of cybernetic development and the collective intelligence processes. In these conditions the paradigm "subject – self-developing reflexive-active system (environment)" becomes a key factor of management and cybernetics. In this environment we get the advanced opportunities for ensuring sustained convergence of civil group decision making processes on the basis of using collective artificial intelligence technologies. It is very important, because for a long time representative democracy has separated the citizens from the necessary conditions of their participation in political life, banking systems, and corporations. Now, mass media gives the capacity to communicate, organize and see the world beyond the spectacle, which has been made by different states, banking and corporate groups (Toret, & Callega, 2014). The networked communicative movement is developed, the democracy becomes networked. They appear as practices of citizens’ control in political, social, technological, economic, and communicative spheres. The deployment of socio-technologies for networked collective movement has gone hand in hand with a deployment of information and communication technologies (ICTs). But, in our opinion, these processes have no technology to sustain acceleration of citizens’ decision making. Therefore, they require a lot of time and go beyond the deadlines.

For speeding up citizens’ decision making we propose: 1) to integrate the processes of networked civil discussion with the work of highly qualified experts groups; 2) to use the special convergent methodology to accelerate citizens’ decision making (Raikov, 2015). The methodology is based on the fundamental principles of control thermodynamics, inverse problem solving, a holistic discourse approach, cognitive modeling methods, genetic algorithms, and artificial intelligence. During citizens’ meetings structuring information in a special way helps to get a collective insight very fast. The convergent methodology uses the process of cognitive modeling that consists of creating concepts (factors) and their connections. Cognitive modelling system provides mechanisms to build up relations of the “all to all” kind. Fir intense, matrix representation of the relations is illustrated in the form of directed graph, where nodes represent factors, and arrows represent corresponding relations. This design process helps understand the problem structuring by the decision makers and improves problem understanding by the participants. To verify the cognitive models, we use Big Data analyses technologies. The verification is carried out by mapping the factors and connections into the sets of objects such as documents, messages, comments, etc. The sets of objects help to build the semantic interpretations of cognitive models.

The methodology has been implemented as software, the e-expertise system (Gubanov at al, 2014; Raikov, 2015), and has been tested in the course of decision-making during a Russian e-government activity. The e-expertise system can be used by government officials, different groups of people, policy-makers, researchers, and innovators. They share their mutual concern about how public investment in information and communication technology creates public values. The methodology may be useful for supporting targeted forum discussions and creating effective strategies for group actions across regional, national, political, and other bodies.

Keywords

Networked democracy; Convergent technology; Group decision-making; Collective artificial intelligence

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