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# SUPPORT SYSTEMS FOR DECISION AND NEGOTIATION PROCESSES

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### Editors:

*Roman Kulikowski*

*Zbigniew Nahorski*

*Jan W. Owsiniński*

*Andrzej Straszak*

Systems Research Institute  
Polish Academy of Sciences  
Warsaw, Poland

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Names of first authors: A-K

## Decision Making by Innovation in Project Management

Sergey Bushuev

Kiev Civil Engineering Institute  
31, Vozduhoflotsky Prospect  
252037 Ukraine

The transition to the market economy in Ukraine is one of the most important projects of our time. The successful realization of this project is closely connected with the presence in the country of the critical mass of managers, having deep knowledge of the market mechanisms, the skills to find the effective strategy of transition for the enterprise to the work in the conditions of the market.

The spectrum of project management models is very broad and includes the models of operations research, innovation processes, decision making, data and knowledge bases. The completeness, which is inherent to the integrated models of project management defines the use of hierarchically regular structures of known model classes - nets, Petri nets, nets of service and so on.

The realization of demands as to the adequateness of the model, the simplicity of description, the mobility, the economical efficiency of their application in project management with the constant innovation and development of realized systems (projects) define the problems of the automation of synthesis and the detalization of object model and the process of management, following the current state and knowledge about the possible variants of project solutions.

Innovation is considered in the dialectical unity with the development of the user's creative abilities in decision making, the developed scheme of analysis and synthesis for the designs if the start-up, and the skills in argumenting the adopted solutions.

The considered scheme of computer decision by innovation is used as:

- the means to learn methods of system analysis and search for solutions;
- the means of managerial command forming, having the synergetic effect;
- the method for knowledge transfer and activation;
- the decision making tool;
- the method for group learning organization to the solutions getting;
- the scheme of creative task solution;
- the method of activation of transition and adaptation of knowledge.

The outlined computer system for production decisions by innovation is based on following ideas:

- the process of innovation in the defined problem area is connected with the structure of knowledge about this area and the methods of new decision search on this groups of experts (generators of ideas) structure; the composition of the chosen problem area knowledge structure and methods of decision search is realized by the aid of navigated system, provided the flexible technology of decisions producing;
- the flexible re-constructed system of known criterions is used for the decision choice. This system is tuned by the groups of analytics and used for the choice of decisions and methods of its realization by the further construction of models by the project management.

One of the approaches to the expansion of decision making systems application sphere is based on the using of artificial intelligence elements, which get the development in connection with the creation and application of expert systems.

During the learning of experts in the conditions of transition to the market economy the knowledge base and expert systems may be used effectively for:

- the search of outcome from crisis routs;
- the choice of coming on market strategy;
- the definition segment of market, concurrent area and so on.

The systems of knowledges engineering are represented the program complexes, in which the functions of deductive proofs, realized by algorithms, which allowed the automatization are united with the relatively simple functions of memory management for the knowledge base saving and about the functions of dialogue input-output.

To provide the demandable descriptive efficiency of knowledge base, it is necessary to create preliminarily the full conceptions enough inside descriptive region, which will be respect, as it possible, to the various, really existed structures of problem area in it. With this aim the multilevel model of problem area is included to the producing expert system. Based on the multi-level representation of model, the data and knowledge structurization of productive system is pessed by the connection of each element of model with its description as the multitude of facts and some set of system knowledge base productive rules.

The method of limits on generation of rules multitude set is used for the control of output, by which the possibility of rules application is used in define situations, belonged only to the some category.

The providing of new knowledge outcome possibility is realized on base of inductive proofs in the system of knowledge processing, used for learning.

To form the skills of work with the means of knowledge by user the CALL-interface is included in the expert system, which provides the interaction with programs, written on the different program languages. It is allowed to write such part of applied system, which possesses the expert discourses by the aid of CALL-interface commands, other problem — depended sub-programs may be written on the one of modern program languages.

The considered shell of expert system MISS-EX is designed on the learning of knowledges engineering with their application for the processing of flexible program complexes in the innovation region of project management.

The efficiency of expert system at the point of view of knowledge representation is defined in many respects of the ability to describe unnecessary knowledge till the solution of concrete tasks with the providing of knowledge base relevancy. It is provided by the structurization of knowledges and practically excludes the combinatoric blow.

As example using decision making system by innovation will be consider integrated system of learning MARKETING is realized as instrumental means of intensive training in the region of marketing and buiseness. The system allows to construct the different models of enterprises (firms) and consumer's market management and may be used by the non-professional user.

The system provides the realization of different methods of market systems models producing learning, their analysis in the different conditions. It contains the learning course, the automatized vocabulary, the builder of advertisement, tested, innovated and expert systems, is allowed to transform all complete procedure of imitated experiment producing to the minimal multitude of stages, produces the most hard and needing in special training part of experiment.

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