MODELING OF INNOVATIVE ACTIVITIES INVESTMENT PROCESS

© 2010 A.K. Symakov*

Keywords: investments, innovations, system, modeling, imitating model.

The article deals with the forming of investments in innovations system (IIS) on a meso-level with the use of imitating model. By changing input parameters imitating model makes it possible to carry out variant business plan accounts of investment project and, thus, to put different course of events in this accounts.

The author of the article developed a conception of IIS forming on a meso-level implementing transition of one region into innovative development way on the basis of source search and rational investment use.

The management structure in IIS should be based on the rational combination of centralization and decentralization. Any regional enterprises and organizations including university complexes (acting as legal persons) and physical persons can participate in IIS.

The idea of new services, departments, bodies establishment is never considered desirable in the process of IIS forming. Provision is made only for delegating new responsibilities to the special bodies, regulation of present services' activities and putting on the concrete functions on active services and organizations.

Long-term development plans of the region, development guidelines are formed in a fundamental strategic way in accordance with the regularities of worldwide civilization progress and aspiration for all-human values achievement. Long-term development strategy should be developed according to sectoral (departmental) directions.

System examination of social and economic, scientific and technical region development longterm strategy demands program and target approach (method). The target tree is constructed with the decomposition of basic aims on the tasks and in the future on the means (ways) of their solving. The scheme demonstrates interdependence of aims, tasks and means, weighting characteristics of which are estimated by experts. The degree of tasks influence on aims and means on tasks are settled. The method is used for efforts, financial funds distribution on various subject directions.

The model of activities in an emerged situation is offered for efforts and funds on various events of scientific and technical development. It covers the preferences, events selection from alternatives, short and long term decisions forecasting and planning. For these aims implementation complex events are provided for the implementation of which aggregate or separate events are used. Moreover, risk and discount are taken into account. The solving criterion for aim implementation is the meaning of clear discount income on one of the graph chains.

In order to implement the calculation of investments size forecasting values to the basic capital, as well as of new basic funds of Saratov region on the basis of system investments innovations the conception was developed: firstly, the tendencies of investments size changing to basic capital and new basic funds during the analyzed period; secondly, negative influence of the phenomenon emerged in connection with the world economic crisis; thirdly, calculations are made with the help of imitative model describing the process of investments in innovations and workers' stimulation for its development and introduction.

In market conditions, especially, in crisis conditions, it is believed to be quite difficult to foresee how the events will be developed: the situation will deteriorate (pessimistic variant), the situation will improve (optimistic variant), the situation will become stable (the most possible variant).

The imitation model, describing capital investments in innovative activities, includes managing parameters: investment growth rate in basic capital; the change in investment rate into new basic capital in investments general volume and perturbation actions parameters: inflation rates; rise in prices.

Calculations implemented with the help of the program "Project Expert" radiating from 3 possible variants of possible scripts of moving

* Artem K. Symakov, postgraduate of Saratov State Technical University. E-mail: fups@sstu.ru.

events in the next years made it possible to obtain the following investments values in innovative development of Saratov Region till 2015:

Pessimistic variant of capital investments in innovative development of Saratov Region

 prognostic value of investments in basic capital of Saratov Region - 50 616 million rubles;

 prognostic value of investments in new basic funds of Saratov Region - 49 604 million rubles;

investment potential of the region -60 points;

investment region risks - 80 points;

- innovative region potential 40 points;
- innovative region risks 90 points;

 the stimulation level of factory workers of the region for the development and innovations introduction;

♦ clear discount income from capital investments in new basic funds -5 466 rubles;

integral index of investment activities 25%;

♦ integral index of investment activities - 25%.

The most possible variant of capital investments in innovative development of Saratov Region (stabilization)

prognostic meaning of investments size
in basic capital of Saratov Region - 59 879
million rubles;

 prognostic meaning of investments amount in new basic funds of Saratov Region -61 502 million rubles;

- investment region potential 75 points;
- investment region risks 60 points;
- innovative region potential 60 points;
- innovative region risks 60 points;

taxation investments preferences - 60 points;

♦ the level of factory workers stimulating of the region for innovations development and introduction - 65 points;

 clear discount income from capital investments in new basic funds - 11 070 rubles;

integral index of investment activities -18 %;

integral index of innovative activities -16%.

Received for publication on 26.04.2010