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ANALITICAL SYSTEMS OF MAKING DECISION SUPPORT UNDER STATE POLICY REALIZATION

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The main task for the State management Bodies at the present moment of the development of Ukraine is procedure development, which will provide a new role of the government, as most of the state departments and committees don't understand clearly the proper state policy and its analysis. Nowdays, to our great disappointment, the state lacks purposeful intelectual activities involving the analysis of the process for the making and assessment of policies, which causes the poor quality of the government activity and as a resalt it leads to decreasing of the living standards of the Ukrainian citizens. [1]

Politics as a process is known to be viewed as components of such scheme [2]:
1. Making decision on the problem;
2. Foreseeing/forcasting;
3. Defining prospectives and priorities;
4. Alternative analysis;
5. Politics implementation monitoring and control;
6. Assessment and reconsideration;
7. Carring on or stopping of the politics realization.

On the point of project management, politics can be viewed as megaproject (sum of the state purposeful programms) which are realized under condition of unstability. And though the project management [3] possesses the effective methodology of changes management, although it doesn't provide a systematic set of methods and devices for creation of the effective system for training and controle of realization of the state purposeful programms. It is connected with

1. impossibility to take into account most fully the initial external conditions and unique prehistory, external requirements limitation concerning results, time, resources, echology and so on, that in its turn leads to the complisity of definition of the clear priorities, Ceriteria, requirements and real initial conditions and also subject sphere, its real limits, the stuff of participants and interested in persons.
2. social significance of the programm, which is rather difficult to be expressed in digital dimension.
3. it is also necessary to take into account historic, cultural peculiarities of envirenment and mentality and also provide publicity, objective assessment of the results, of public views in the process of the whole living cycle of the megaproject.
4. assessment necessity of expecting consequence of realization or non-realization of megaproject and also complicity of objective assessment and simple interpretation of intermidiate and final results.

The suggested approach to the formation and accompaning of the state purposeful programm is based on the theory of indistinct degrees of indistinct integral numbering, which in great measure, generalizes known attitudes to the description of indefinity and allows to create effective applicable providing for practical tasks of planning and forseeing, so as for development and fullfillment of the state purposeful programs [4].

One of the first steps of formation of the state purposeful programs is a step of key prospective definition of the program which coincides with national interests of the state in the sphere of politics, economy, ecology and so on, and which suits the situation.

Let $\mathbf{M}= \{\mathbf{m_v}\}$, $\nu=\overline{1, N_\upsilon}$ the sum of discovered interest researches on the initial step, which should be taken into consideration under formation of the state program (SP) at the present of situation. The system of the national interests gives rise to some reasonable need in the creation of the SP. Let $\mathbf{Z}=\{\mathbf{z_i}\}$, $\mathbf{i}=\overline{1, N_i}$ sum of the program purposes, which can potentially suit SP needs.

To make the sum of the program purposes, the task of the ranged purposes defined and solved of $\mathbf{Z}$ in relation to the satisfaction of the national interests $\mathbf{M}$. Examining the power of the purpose advantage $\mathbf{z_i} \in \mathbf{Z}$ over $\mathbf{z_j}$

$\in$ **Z** relatively to meeting each of the national interests $\mathbf{m_v} \in \mathbf{M}$ in the way of expert assessment the function of the kind of defined

$$\mu_v(\mathbf{z_i}) = \mu(\mathbf{m_v, z_i}): \mathbf{M} \times \mathbf{Z} \rightarrow [0;1] \tag{1}$$

Proceeding from the actual simulation of the state at the moment of SP formation in the way of expert poll of the function of unclear limit of macro purpose importance is defined $\mathbf{g_m(\cdot): 2^m \rightarrow [0;1].}$

The degree of importance to fulfill the purposes of the SP taking into account the real needs of the state can be introduced through the formulated interests and are defined in the way of the function integration $\mu(\mathbf{m_v, z_i})$ in measure $\mathbf{g_m(\cdot):}$

$$\varphi(\mathbf{z_i}) = \int_M \mu(m_v, z_i) : M \times Z \rightarrow [0;1] \tag{2}$$

Further, function $\varphi(\mathbf{z_i}): \mathbf{Z} \rightarrow [0;1]$ is viewed as desired function to meet SP purposes.

To concretize SP the structure of some subprograms and projects must be defined and they are linked in the tasks which are formulated in the SP. The points solving of the tasks in the frame of certain projects must provide reaching of the purposes defined for SP excepting their parallelism and doubling. In addition it is necessary to part SP in such a way to provide sufficient measures and integrity of the subprograms.

Thus, to achieve SP purposes a number of tasks must be formulated $\mathbf{P} = \{\mathbf{p_j}\}, \mathbf{j} = \overline{1, N_j}$. Further P will be

meant a sum of all possible tasks of subject of SP sphere, their solving helps to achieve the purpose **Z**. Each task is being done, provides some level to achieve purposes of **Z**, however differently. To formulate some subprograms and projects correctly inside the subprogram, it is necessary to group the tasks P properly. So to solve the task of receiving (on the level of formulation of the certain tasks) it is necessary to solve the task of the effective clusterization of the tasks.

As a result of the carried out expert assessment, the degree of the purpose fulfillment is defined under the task solving and Σ function is defined and they help to express this degree. This family of functions defines fuggu cover of the plurality **P**.

On the basis of the given family one can make binary relation R_Σ

$$R_\Sigma(p_j, p_i) = \mathbf{max_i\{ min (h_i(p_j), h_i(p_l))\}} \tag{3}$$

How to check easily, this fuggu relation (3) one can rather easily turn into equivalence relation in the way of the transit locking of the relation R_Σ. Let this relation be denoted through $\mathbf{F(p_i, p_j).}$

Thus, choosing a-level we have a chance to receive clusters of the tasks, which will define subprograms and projects of SP.

The task of the effective clusterization of the task sum leads to the choice of a-levels which would allow

1. to provide the cover of the function $\mathbf{f(z)}$, that is to provide the purpose performance of the whole SP;
2. to minimize the crossing lever (doubling) of the task of subprograms and projects;
3. to provide minimum disperse of financial cost and its amount as a whole at the expense of quantity minimization of subprograms and projects.

The next step is the functional connection of the certain task groups of the program, as certain tasks can influence upon the tasks performance in various clusters.

With this purpose, it is necessary to make the task distribution as to urgency and the functions of the unclear degree is known, according to, one can make the distribution of the projects by steps of subprograms performance dependently on given means.

After the main tasks of the subprograms bering formulated and distributed inside, from the range of projects, available to performers, the projects are chosen which fully meet the formulated tasks and provide investment into them. Practically, the formulated above system of the tasks is investment strategy of the state institution which is responsible for the formation and accompanying of SP.

The choice of the necessary SP projects is made on the expert basis which involves receiving of quality and quantity assessment from expert side and their next mathematic treatment. It is worth denoting that group experts for project choosing is most often used and this involves additional requirements to the expert information processing. As a whole, the main essence of expert procedure accomplishment foresees two main steps:

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1.   preparation step, it includes the choice of the expert group, preparation automatized job places;
2.   this step involves projects expert and their including into SP.

In the process of the preparation step the task solving is carried out , which provides the correcting of the set for the projects assessment criteria, invitation of specialists and formation of the expert group on this basis. Plurality of criteria in accordance with depth and generalization of the starting conditions on the projects is broken on regulated itself, factor-plurality. The point is each next criterion is generalization for the former. It is necessary for decreasing of the research amount and projects expert as a whole, as some part of the projects will be refused at the first expert steps. At this step to increase conformity of the expert group accomplishment the terms of one SP task cluster, experts will have to be assessed as to their competence. It can be done either by expert leader or by the procedure of mutual assessment.

Further in the terms of the preparation step the task structuralization and initial project distribution are carried out, and this step is finished by preparation knowledge base for expertizing can be introduced as follows:

$$<\{\Theta_{\upsilon}|_{\sim}\}, \{x_i\}, \{A_i\}, \pi(a|\upsilon,x), \xi(x, \upsilon), g_{\Theta}(\cdot), h_E(\cdot)>, \tag{4}$$

where $\{\Theta_{\upsilon}|_{\sim}\}$ criteria pluarality , according to which the project is assessed. $\{x_i\}$ - characteristic pluarality which describe the project and which take their meaning in pluralities $\{A_i\}$, $\pi(a|\upsilon,x)$ – conditional unclear degree, which reflects the importance of indicator x_i under project assessment in criterion $\upsilon_s \in \Theta$, $g_{\Theta}(\cdot)$-. criteria importance under SP project assessment, $h_E(\cdot)$ - degree, which defines expert P competence from plurality of expert group E.

Thus, the choice of projects from above chosen into the group for cluster **K**; must be accomplished on the basis of their economic treatment like investment project. The point is the main criterion is worth viewing as criterion connected with conformity of the investing project strategy of the state organizations activities and the state as a whole (tasks and purposes on cluster K) project effectiveness, project risk, project realization and so on.

The step of expert group work envolves receiving on the basis of unclear process using unclear filter ranging of the coming projects for the contest, which allows to view the most reasonable on assessment projects.

Before chosen projects will be financed it is necessary to calculate the economic effectiveness of the projects, as calculation is done by certain mathematic dependences, but they have unclear forseen character because of objective and subjective indefinition it is necessary to raise unclear numbers, under which we will understand destribution of the function density of the unclear degree on pluarality of real numbers.

Thus, application of the given treatment is useful and sometimes only possible in tasks solving which requires allside consideration of various, not fully defined information, that has not only statistic nature. The analysis of existing expert analytic tasks of the strategic planning showed, that existing methods and attitudes to formalization is worth using independently only in that case when exit information about model objects has expert character. In this case formalization of exit unclear data is carried out on the basis of indistinct degrees.

References

[1] Стратегія економічного і соціального розвитку України (2004-2015 роки) "Шляхом Європейської інтеграції" / Авт. кол.: А.С.Гальчинський, В.М.Геєць та ін.: Нац. ін-т стратег. дослідж., Ін-т екон. прогнозування НАН України, М-во економіки та з питань європ. інтегр. України. –К.: ІВЦ Держкомстату України, 2004. –416 с.

[2] Evert Vedung. Public Policy and Program Evaluation. Transaction Publisher. New Brunswick (USA) and London/ 1997

[3] Управління проектами Р.Б.Тян, Б.І.Холод, В.А.Ткаченко Підручник –К.: Центр навчальної літератури, 2004, -224 с.

[4] Бочарников В.П., Свешников С.В., Яцишин Ю.В. Fuzzy Technology: Математическое и программное обеспечение целевых программ в стратегическом менеджменте. –К: Ника-Центр, 2005. – 264 с.

[5] Лысенко Ю.Г. и др. Модели управления проектами в нестабильной экономической среде/ Белый А.П., Гнатушенко В.В., Левицкий С.И., Руденская В.В., Слепцов А.И., Стасюк В.П., Тыщук Т.А., Черкасова Т.А. – Донецк: ООО «Юго-Восток, Лтд», 2003. – 292 с.