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АСПЕКТИ НА ИНФОРМАЦИОННАТА ЛОГИСТИКА В „ОТВОРЕНИ“ СИСТЕМИ

ASPECTS OF INFORMATION LOGISTICS IN “OPEN” SYSTEMS

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Abstract: References about the condition of information processes and information streams in the input entrance and in the output exit. The information logistics is considered as a capability of finding a solution of the assigned task when a priori is known only the demand result. Such tasks are “open”. They could not be solved by algorithmic methods of approach because it is impossible to compose algorithm without knowing the way it works.

Investigation of objects of different order is presented. The infinity of the external and internal environment is put into analysis.

Key words: information logistics, logistic object, open system, input/outlet object

The definition of information in its phenomenon – logical meaning permits the realization of elementary act of knowledge (or management) in triad “subject” – “object”. The intellectual system arises when during the process of knowledge these components change their roles periodically – the subject traverses to a condition of “object”, and the object becomes respondent source of activity, i.e. transfers into condition of “subject”. This means that (in the meaning of such communication) there is a realization of process of creating systems, which acquire the possibility for manifestation of its individuality, with their own concept for the corresponding matter and are in condition to realize “incalculability”. In this way the theory and the practice receive enough reason to deal with intellectual information-searching system upon the understanding of information as a procedure for building an unlimited multitude of contexts of perceiving the incoming message and the intellect as a rational choice in this multitude.

Information interaction of logistics objects with the environment is determined from characteristics of the objects, including their physical possibilities and their goals of

existing. The meaning “goals of the logistic object” can be determined as general purpose of the actions of the object for insurance of its necessities in the broad sense. Long terming suspension of the necessities leads to ceasing the existence of the object as such. The complete lack of necessities leads to submission of any activities of the object. In this way, the necessities of the logistic object constantly changing them and in conformity with this the goals of the object that direct its activities also get changed. The structure of the goals of the logistic object depends on its own structure and can be very simple or very complex. The complex structures represent hierarchy in which the reach of the goals in lower level leads to reaching goals on higher level. In its respect they can be sub-goals of still higher level. The existing goals determine the inner necessity of actions of object, which are realized during receiving information from object, that is interpret from them as a presence of opportunity for achieving the expedient result.

The process of the evaluation the choice of object operation, its approaching to the corresponding goal, may have different nature depending on the characteristics of

the object, but in its base is juxtaposing with the build information templates of operations. Information templates of operations of the logistic object can be static and dynamic (build as a result of preceding acts of information interactions). The ability of building information templates of operations is determined of the presence of that kind of information that brings to needed result.

In that meaning the concept of intelligence as a matter of fact means capability to find solution of the set task, than a priori is known only the demand result. Such tasks are "open". It is obviously, that with algorithmic method the open tasks can not be solved, because it is impossible to create algorithm, if it is not known how it work. Considering with this, could be formed four variants:

1. Entrance: object of 1 /first/ order. Exit: object of 1 /first/ order.
2. Entrance: object of 1 /first/ order. Exit: object of 2 /second/ order.
3. Entrance: object of 2 /second/ order. Exit: object of 1 /first/ order.
4. Entrance: object of 2 /second/ order. Exit: object of 2 /second/ order.

It is obvious, that in the first variant of is required to build device, which transforms outlet object from 1 /first/ order in dependency of the condition of the input object from 1 /first/ order. Otherwise said the demand is to be build object of 2 /second/ order. But in this case the observer needs to know in advance in which way must be connected the condition of the input and outlet object. It seems that this can be described with third object from 1 /first/ order. However, questions arise, in which way could be extract this information and to be used during the working process of such organisation? The answer is clear: only with the help of some object of 2 /second/ order. In that case it has to be integrated into it at the stage of its building. At the end it becomes that way, that the connectuon does not do anything on its own and do not facilitate and make any easier to its creators in the process of building an object of 2 /second/ order.

The 2 /second/ variant is also unacceptable because of the impossibility object of 1 /first/ order to describe object of 2 /second/ order.

In the last two variants at the entrance are objects of 2 /second/ order. But in this case, what has to represent of its own the interaction to be able to manipulate objects of 2 /second/ order? It is perfectly obvious, that can not be object of 1 /first/ order. It can not be object of 2 /second/ order either, because when the object of 2 /second/ order has in the entrance object of 1 /first/ order heterogeneity, but not the process of transforming the heterogeneities. This means, either the reciprocal action is impossible either it is an object of next 3 /third/ order.

In this way it becomes clear, that the creators of system of that kind had walked on previously drawn wrong way, trying to realize interaction on the basis of the first two variants. It is obvious in the reality. All of the programs, on which arbitrary and over-wearing it is ascribe and impute to them "content" and "substance" of the process, do not generate new algorithms. They only manipulate the data based on the algorithm put into them, no matter how complicated and complex it is, it is still an algorithm. All of them are variety of the compiler, which transfigure the text of the program into machine code, remaking one stream of bytes into another and totally does not "understand" the meaning nor the first stream or the second. At first sight, this can be treated as reason for fading and stopping the investigations, admitting the impossibility of existing of the interaction intelligence. Objectively this is not true. It is deserved to accent the attention upon an important moment. This moment is the objectivism in the necessity of perception and investigation of the living nature in giving a proof capacity of existing of objects of 3 /third/ order.

The only way to receive intellectual resources is from the external environment. Intellectual resources, the knowledge, simply said, can be either object of 1 /first/ order or object of 2 /second/ order. Let

admit, that they are objects of 1 /first/ order or objects of 2 /second/ order, i.e. this is physical heterogeneity. But in this case in the general way they can not be accepted properly and correctly because for the arrangement of the preserved information in object 1.1 is needed an object of class no less and low than 2.2. So, it is imperative to insert universal object 2.2 in such way, which is capable to accept in proper and correct way all kind of possible objects of 1.1. This is impossible. The knowledge means have to be objects of 2 /second/ order. More precisely – objects 2.2. The way of working of that mechanism is as follows: what kind of information is preserved in the objects 1.1 (A and B) can not be known. But still can be determined in which way the conditions of the objects A and B changes reciprocally. In this way can be received completely determinate information. It can be record in some object of 1 /first/ order (without forgetting to build an interpretation to allow this information to be extract from there and to be used).

On the basis of this presentation appear three methods of receiving knowledge and data:

1. All necessary knowledge in principle can be obtained through their random review.

2. The demand knowledge already exists in the environment of functioning as modes like objects 2.2. Only skills are necessary for their finding and using. The distinguish limitation here is this, that knowledge has to be in open (patent) form, i.e. with correspondence to the principle “take and use”. In this case the system uses knowledge by analogy.

3. The demand knowledge exists in the environment of functioning, but in non-open form. In this case is necessary to be received as much as possible knowledge from the environment of functioning, and after that on the basis of its joint analysis to be made logical conclusions. The gained conclusions are already as demanded knowledge for reaching the goal, in open form.

If the demanded knowledge can not be received by random and occasional way and do not exist in outlet environment in open or indirect (oblique) form, the goal can not be achieved.

During the examination of the objects of 1 /first/ and 2 /second/ orders the terms and conditions of their existence have being arranged, as a matter of fact that the conditions for existence of the object of 2 /second/ order accumulate themselves in the functional environment requirements, in addition to the requirements of existence of the object of 1 /first/ order. By the transition to object from the next 3 /third/ order a new requirements (as addition to the old) occur and take place. The aroused requirements should ensure the resolving of open tasks.

The creation of an object of 2 /second/ order means finding a way to impact on the object of 1 /first/ order Y, as consequence of the condition of the object of 1 /first/ order X. Applied to the problem, the objects X and Y can be unspecified in general, and in their role could be all kind of physical heterogeneities. The input object of 2 /second/ order contents the objects of 1 /first/ order A and B, that are also unspecified physical heterogeneities. Therefore, to arrange the thread of management from A and B to the X and Y a physical connection between them has to exist. Because A, B, X, Y could be demanded in every area of the environment of functioning of the object of 3/third/ order, means that all objects of 1 /first/ order have to be in physical interaction each other. Should not exist objects of 1 /first/ order than on its condition can not be affected and should not exist objects of 1 /first/ order, that changing the condition of them will not influence on anything.

This is absolutely new characteristic, which do not have analogy in the field of the objects of 2 /second/ order. It can be defined like universal interface. The universal interface imparts to the environment functional unity. With the reservation that the universal interface do not manifest entirely whether every object of 1 /first/ order is connected directly with

each other and that is why with the help of every else object can be controlled the condition of everyone other object. The universal interface speaks only for the existing of influence upon that object behind the side of the rest objects. The realization of that influence could be straight and indirect, through changing the condition of the objects which are directly connected with the given object of 1 /first/ order. Substantial addition is the apprehension by the principle of “super-position”, according to it, the condition of every object of 1 /first/ order is determined by the actions upon it from multitude of other objects of 1 /first/ order.

The universal interface is a necessary condition for creating an object of 3 /third/ order, but it is not enough by its own. Figuratively, it is not enough to have a ship available for reaching to any island. There is a necessity of an engine and a navigation system that could give the opportunity for moving and especially toward the right and correct direction. “Navigation system” may become the reverse connection giving the opportunity to know how close and near is the target goal. With the engine the problem is more complex. That exactly block build the wanted object of 2 /second/ order directly. Like it was mentioned already, the object of 2 /second/ order consists of two multi-type components – objects of 1 /first/ order and interpreters. In this way, with the maximum of its possibilities, the block for “movement” should be “skillful” to transform and reorganize, to generate objects of 1 /first/ order and interpreters as well.

For transformation of objects of 1 /first/ order is sufficient an object of 2 /second/ order. Still, the question remains, how to be generated these objects is it possible this at all. The object of 1 /first/ order is a physical heterogeneity. This heterogeneity now is innate, “installed” in the middle of the functional environment. By it nature the generating of objects of 1 /first/ order means from initial homogeneous environment to make it heterogeneous or to increase the level of its heterogeneity. It is necessary the conductor that deals with the

very same principal changes to stay out of the environment of functioning (to be completely independent and to watch it from outside) and to be an order and level higher than it. For the objects that are inside the environment such opportunity is not available, because they themselves are part of it and their order could not be higher from the order of the environment from that they originates. The same restriction exists to the attempts of being generated for changing the interpreters.

The interpreters are inseparable part of the environment of functioning because they are in physical connection with the objects of 1 /first/ order. That is the reason why the changing of their features and characteristics will involve (provoke) after it a transformation of the whole environment and changing of it basis. So, for objects of 3 /third/ order, making changes in the environment, from which they are a part themselves, according to the four theoretical possibilities to the moving block is accessible only one. This is the impact upon the functional environment through changing the condition of already existing objects of 1 /first/ order. But even this part owns huge possibilities.

The condition of different objects of 1 /first/ order could be changed. It is unknown to which object and how to change its condition. That is why in the composition of the moving block should take part at least two components: an object of 1 /first/ order, in which the change through the universal interface reflects to the rest objects of 1 /first/ order, and a generator of accidental events giving the opportunity to choose by accident which object of 1 /first/ order should be changed most and in what direction. But only the accident changes are not enough. It is needed a device to remember the successful accident step (it brings closer all to the goal) and to permit a return to this successful condition of the system, if the next accident step is wrong. In such way the enclosing to the goal is gradual, without wandering around the starting point.

In the objects of 3.1 and 3.2 the movement towards the goal is specialized mainly by the help of accident monitoring of the different variants. The dealing with these objects depend a lot from the will of chance – whether will be chosen the right and successful condition of the effectors. As much as bigger is the system, as much as harder is the achieving of the goal in that way. The successful combination of the condition of the effectors become rare, and the unsuccessful, on the contrary, become more often. Something else, some of the accident conditions of the effector's matrix could remove from the goal so far, that its reaching once more to become senseless (a destroying of the object of 3 /third/ order). Except the chance there is another damaging factor – the limitation of the receptor-effector matrix. Its main point is that the current composition of receptors and effectors is not enough for successful movement to the target goal. A modernization is necessary. In the objects of class 3.1 the receptors and effectors does not change at all. In the objects of class 3.2 the receptors and the effectors are forming (mainly) by accident. In the big systems the accident forming is not enough. The probability that the forming casual image of the receptor-effector to satisfies in sufficient degree its task is very low. That is why is necessary a strong connection between it and the impact object.

This can be achieved in two ways: either to create the necessary characteristics in the receptor-effector in advance, either to generate such quantity of receptors-effectors which will take the whole outside world in practical, and in this way to upraise the probability to achieve the goal. The both ways are not useful in 3.1 and 3.2. For this reason the area of usage of the object 3.1 is limited to not huge systems. In the medial ones, and mostly in the big systems, the usage of 3.1 is practically unreal. With a

presence of logistics domains, the usage of the object 3.2 is possible. On the base of memory account that it is used, the object 3.2 could manage to achieve the goals in middle systems according to their magnitude.

The object 3.2 is useful in all of the “end most” systems with fulfill memory. In the “infinitive” systems object 3.2 will be non-able for work. In the frames of 3.1 and 3.2 objects it is not possible to overwhelm so called potential barriers. It is obviously that the improving of the mechanical characteristics of object 3.2 (the capacity and the quick action of the memory, the receptor-effector matrix and other) could not achieve the desired result because the infinity of the outlet world reduces to nothing such issues.

A new way is needed for the decision of this problem in principle. The opportunity for accepting knowledge from outlet world in non-open form remains. For elimination of the procedures for searching routes toward the goals of the object “information logistics” (passing through the infinite labyrinth of solutions) it is not necessary the searching a way or a mode for transformation of the already existing program, but its creating (originating) anew, from the beginning. For this reason could be used the circumstance that some of the global characteristics if the infinite logical domains are attributes only of the group of their composite objects. In similar way to this that the solid body has shape but its components the atoms and the molecules do not have shape. For that reason is possible to be created from the beginning an infinite logical domain with preliminarily assigned attributes and not to be altered the characteristics of the elementary objects from which the information flux is composed of in the object “information logistics”. The new program should be built on the basis of the global characteristics of the infinite logical domain.