

## **Systems thinking and thinking systems**

There are three types of systems: mechanical, organismic, and social. Each of them has been identified and differentiated.

Mechanical systems can be either open or closed, while organismic and social systems are always open. Closed means the behaviour of the system is not affected by any external conditions or events while the open systems are affected. A great difference between the mechanical systems and organismic systems is that last ones have at least one goal or purpose of their own, same do social systems. But, if we have to compare organismic and social systems, the social systems are parts of larger systems that have purposes of their own and at least some of the essential parts have their own purposes.

The paper shows us how the enterprise systems gradually changed throughout the years, from mechanical type of system to organismic and later on to social. We can notice the growth of humans' value, firstly treated as rough machine force, later being valued and taught skills, lastly being treated as individuals that have purposes and interests of their own. There was a number of reasons for this transformation, in the beginning was the high necessity of employees that have skills, increased regulation of working conditions, job security, and compensation. Lastly, heads of corporation became aware of the need to take in account interests of their employees, and they began to think of them as social systems in which people individually and collectively played major roles.

In order to increase the overall performance of social systems, many managers tend to separate individuals of their system and work on increasing individual performance. This type of management is called analytical, but is a totally wrong approach, system is defined as a whole consisting of two or more parts, each of them affects the performance or properties of the whole, and none of which can have an independent effect on the whole. In simple words this means that a system cannot be divided into independent parts. The most important aspect is how the parts interact with each other to affect the performance of the whole. The understanding of the system as whole then revealing its role in the larger system that contains it is called synthesis.

Back in days, over 90% of the employees could not do their job as well as their bosses could, for some obvious reasons. Nowadays, the things have changed, now the job of the managers is to create an environment in which their subordinates can do as well as they know. This is achievable when: there is no job description, as a result people are not limited in using everything they know; give opportunities to employees to develop.

Another damaging misconception is treating problems as objects of direct experience and placing problems into categories. The nature of the problem depends on the angle it is viewed. That is why the best method to solve a problem is to view it from as many different perspectives as possible.

## **Towards a System of Systems Concepts**

The concept system has helped a lot in development of management science. System approach in solving problems is fundamental, especially special type of systems – organizations. The concept of system means two or more elements which are working together as parts of a whole. In this paper, we can find out the most important types of system, their differences and similarities. Furthermore, the author explains us the key terms and concepts of the systems, trying to converge these concepts into a generally accepted framework.

Systems can be of different types, such as, abstract systems, concrete systems, closed or opened systems, static, dynamic, and homeostatic systems. Moreover, systems can be classified according to their behaviour: state-maintaining, goal-seeking, multi-goal-seeking, purposive, purposeful, and ideal-seeking. The elements of these six systems can be similarly classified, but if we analyse in depth the relationship between the behaviour and type of a system and the behaviour and type of its elements, then we can determine rather the system is variety-increasing or variety-decreasing.

Management Scientist were always concerned about the type of system called “organizations”. Sometimes they treat organizations as organismic type of system. There are several differences between these two types of systems, that prove this approach to be wrong. First, organizations have elements that have purpose of their own; even though both organismic and organisations type of systems are, on their nature, purposeful systems, organismic do not contain purposeful elements. Second, all of the elements of an organizations type have a common purpose. Third, an organism can only be variety-increasing, while organisation can be either variety-increasing or variety-decreasing. Lastly, in an organism only the whole can display will, none of the parts can.

In conclusion, redefining concepts is very important, as definitions become ambiguous with the pass of time. The concepts and terms regarding systems are not exceptions. Management science, as well as other scientific fields can develop only on the base of system concepts, that’s why understanding of system thinking is important.

## **On the Concept of a System**

The concept of system is widely used in different areas of research. Scientists were always struggling to define the concept of system, and to place it into a general theory. The main reason for that is the lack of satisfactory general analysis of the concept of a system; systems are defined differently by different investigators and is nearly impossible to give it a sharp definition. The author of the paper thinks that the main reason for this is that we do distinctions only based on kinds of systems, but we must consider the system senses as well.

An illuminating approach is to use set theory in describing systems. The main problem is that it only can be applied in a suitable context. Some of the system examples fail to satisfy the explanation. Furthermore, the general question of what can be constructed as a set is not answered by the theory. Using set-theoretical language in representation of a system could be helpful in several ways. First, the point about precision and explicitness of characterization of the system is not to be minimized. Second, the gross structural features of system are well structured. Finally, it may facilitate in identifying the open problems, hence help with development of general theory of systems.

In conclusion, general system research has a lot of open problems and issues, which are likely to exist forever, but the results of deep research into that directions can be applied in more specific areas of research, such as, general science, biology, political science and sociology, etc.

### **References:**

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