

## SURPRISES OF SYSTEMS AND MANAGEMENT

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«Wood may remain ten years in  
the water, but it will never become a crocodile».

*Congolese byword*

**Abstract.** This paper deals with correlation between theory of systems and the management. Noted that emergence of systems that are ready to synergy, and fractality must have the significant influence on the strategy and the tactic of management. It is possible to make the positive impact on the business results. However, in practice it does not happen. It is hypothesized that the reason is fear of management to lose control. It is proposed to discuss this hypothesis.

**Keywords:** theory of systems, goals, emergenceness, synergy, fractality, fear of management.

General theory of systems exists for a long time. The first «modern» publication appeared in 1914. This was the «Tectology» by Alexander Bogdanov. He was ahead of time by 2-3 decades and was not recognized either in his homeland, in Russia, or aboard, although he published his book in Berlin, Germany. He died tragically, conducting himself a risky blood transfusion. He was a man of bright temperament, encyclopedic knowledge and active work in many fields [1]. Therefore, the Austrian biologist Ludwig von Bertalanffy turned out to be the actual creator of this theory [2, 3]. By his own admission, he was the first who expressed these ideas in public in 1937 at a seminar on the philosophy of science in Chicago, USA. But the outbreak of World War 2 forced him to postpone it all. Only after the war he returned to this topic and his work [2] was one of the first. Almost immediately the rapid development of this direction began, which was accompanied by the rapid growth of «Operations Research» developed during the war in Great Britain [4], cybernetics [5], systems engineering [6], game theory [7], and a number of other related areas, for example, [8]. A more detailed bibliography can be found, for example, in Ref. [9].

I took your attention to these, in general, well-known facts, to proclaim that what

will now seem to you as «surprises» has been well known long ago. Managers manage organizations that can certainly be interpreted as systems, are often quite complex. They cannot manifest system properties. Meanwhile, the overwhelming majority of managers at any level cannot see them at close range. Why? I have no answer, but there is a hypothesis, and I invite the reader to discuss it.

Not surprisingly, there are lots of definitions of the term «system». It seems to me that the basis of such a definition is to put the property of the system. E. Deming believed that the main property of any system is existence of a goal: there is no system without a goal. From here follows: «A system is a combination of some elements (parts, subsystems, etc.) subordinated to a common goal.» This determines «the integrity» of the system. Every system has special properties. One of the important properties is indicated by the word «emergence», which essentially means that some properties of the system do not apply to its parts, and, above all, it refers to the goal. The presence of any goal as a part of the system, if it does not coincide identically with the goal of the system, always and inevitably leads to a decrease in the efficiency of the system, no matter how we

express it. How does management work in this situation? It gladly transfers the balanced scorecard [10] to the organizations included into the holding, and even to structural units of one organization. It creates a meaningless artificial internal competition that can even destroy a business. Moreover, the management instills and maintains the KPI – system of individual indicators of employee performance, and this approach indicates a mechanistic Newtonian deterministic model of organization, the failure of which is beautifully shown, for example, in [11], and in numerous publications by E. Deming [12].

The meaning of the creation and existence of any organization is to take advantage of «the synergistic effect» that the total result of the work of a collective of people (team) is usually much higher than the sum of the results of the same people working individually [13]. E. V. Kondratiev uses the term «resonance» to describe this mechanism. When resonance condition arises, it seems to me that an important role is played by associative thinking, which is used, for example, by Japanese when searching for consensus using the «ringi» technology [14]. Of course, synergy is a great blessing, it provides the very possibility of the existence of human society. But at the same time, it creates obstacles to the «fair» wage. It is synergy that does not allow measuring the contribution of an individual to the common results. And management still loves piecework – an insurmountable barrier to quality products. And again it is leading to creating artificial competition, destroying

moral and undermining business. «Fair» payment of the individual in collective labor does not exist. It remains subject to a contract between the employee and the business owner. In a joke they say that only the saints in icons are satisfied with the salary.

In the literature there is an idea that the systems have the property «fractality» [15]. The word «fractal» was coined in 1975 by Benoit Mandelbrot, who two years later published the book [16]. After that, the fractal, that is, structures whose complexity does not depend on scale, began to appear everywhere. It came to management. However, it is not clear to me how the emergence is connected with the fractality.

So it is clear that the properties of systems are important to use in management. The properties themselves, as we know, are pretty well understood. Their use in management is more or less clear. But with rare exceptions, they are practically not used in business management. Now you can discuss my hypothesis. The fact is that there are some universal obstacles to the widespread use of system features in management and it can be defined as loss of control, which means, as is commonly believed, the loss of management power. There have been many examples in the literature lately of what the adherence to system principles may lead to, but we will limit ourselves to just one, rather eloquent reference [17]. Everything I said above means that we all have a hard and long job ahead to change the management mentality. What do you think?

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