

Synergy within a Scientific Research Centre

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Abstract: *The analysis of the social-economic systems prove us that the whole is distinct from the sum of the parts. The concurrence of the components forming a system produces cumulated effects whose value exceeds the sum of effects of the components considered individually. Interactions at the level of parts help us understand the causes that sometimes generate spectacular outcomes of the system composing them. As a matter of fact, organizations exist because they mean more than the sum of the parts.*

Synergy facilitates precisely this pulling together of the members of an organization around a joint vision. From this perspective, we can connect organizational dynamics to the components of organizational culture.

In this article, we aim at making a summary analysis of how synergy has intensifying effects by cooperation among the departments of CSOL-UB, but also between the latter and other entities: TEAM WORK, AERS, CARO, CAEN, SPHERAA SCHOOL, etc.

Synergy analysis at the level of CSOL-UB leads us to the conclusion that cooperation among its departments generates benefits to the partners as well.

Keywords: synergy, network, intensifying, analogy efficacy, systems

JEL Classification: M00, M19

1. Theoretical perspectives on synergy

Haken states that “synergetics is offered as a physical construct for understanding self-organization. It is a mathematical-physical of studying how collections of subsystems (such as atoms, cells, animals) can produce structures and patterns by self-organization” [10, p. 417]. Such pulling together is also applicable in case of other biological, social, physical systems, etc. and gets materialised by the cooperation of their integrating parts which mutually complete each other in their way to a joint purpose. Synergy acts as a propellant of integration and formation of a unitary whole with joint desiderates.

Synergy is the global effect of cooperation and/or concurrence of the parts and characterizes „the whole distinct from the sum of the parts” or, in other words, the whole is much more than the sum of the parts. Ansoff states that “synergy can produce a combined return on resources that is greater than the sum of individual parts. This has been expressed as $2 + 2 = 5$ to illustrate that the firms combined performance may be greater than the simple aggregate of parts.” [5, p. 657]. The excess comes from the synchronic and concentrated cooperation of the parts. While order in a system refers to levels of cooperation and is static, organization focuses on the rhythms of cooperation, being dynamic. Thus, synergy is produced by the organization-movement ratio, as a result of cooperation action.

Although people have always created connections and made exchanges, nowadays these connections crossed over the cultural borders or those specific to the fields of activity as stand-alone entities. This trend has been also determined by the visible progress of information technology and the diversification

of the communication means that facilitated the achievement of inter-human relationships and concentration of various resources under a joint direction.

The main pillar and factor intensifying synergy efficacy is cooperation. In this regard, Limerick and Cunnington (1993) suggests that “synergy occurs when empowered people are linked” [8, p. 156]. Individuals constituting the parts belonging to a synergic system have to prove involvement, to focus their energy and resources on the achievement of a joint purpose. They should be guided by such an intense intrinsic motivation as to ensure their engagement to attain the pursued goals.

Synergy supposes not only cooperation and /or concurrence of subsystems, but also:

- system over determination as to subsystems, that is subjugation of subsystems by the adjacent hierarchical system;
- order generation from disorder (“determined chaos” - Haken), that is apparition of a visible (manifest) order from the implicated (hidden) order.

Synergy produces emerging properties visible to the outside. Emergence is related both to organization and finality, as to functionality representing the multitude of interactions between system and its environment, and the higher hierarchical system. Therefore, functionality may be considered as system „behaviour to the outside”.

Commoner [2] states that nature teaches us a fundamental lesson of synergism since belonging to a system is a requisite for survival on the planet, while subcomponents should be open to cooperation and collaboration. Life itself learned such lesson on the primordial earth.

Synergy and synergism have as starting points other scientific fields (for instance, engineering, economy, sociology, physics). That is why, synergism is a relatively new border, science of a deep interdisciplinary character. In this regard, P. Corning states that "synergy can be found in the subject-matter of most, if not all of the academic disciplines. In the social sciences, synergy can be found in many of the phenomena studied by economists - from market dynamics (demand-supply relationships) to economies of scale, the division of labour and, of course, the influence of technology" [3, p. 4].

Brant [1, p. 412] thinks that systematic approach is preferable to narrow approach when engineering anything, from simple tools or constructions to human communities.

The antonym of synergy is antagonism, phenomenon where the action of two agents has a cumulated effect inferior to that resulted from the sum of individual effects. The term has been used since 1925.

Managers can be taught to get synergy. They change the visions shared by organizations into facts and, consequently, any increase in synergy or in combined actions can trigger several benefits.

From this perspective, organizations exist because they mean more than the sum of their parts. If personal interest prevails upon the corporative one in various companies, synergy constitutes a concept that needs to be stressed since it leads to some positive attitudes from the part of all involved parties.

The operation synergic model has not yet been entirely recognised as organizational policy, though it has major implications for the organization and management of the companies. That is why one of the problems most frequently faced within an organization

is represented by the absence of synergy and of the feeling that employees may rely on each other.

Synergy supposes presentation of decisions for collective debates and encouraging of the organization members to discuss them. Synergy gathers all the members of the organization so that they share a joint vision.

Synergism emphasizes the increase in system efficacy ("efficient synergy", Haken) by optimising the operation of the whole due to the contribution of the internal mechanism of cooperation of its elements.

2. Methods of Synergism

As regards the methods of synergism, the following can be mentioned:

- the synthesis which allows correlation of some dissimilar results, from the most varied and farthest field.
- the analogy which allows application in various fields of activity. Synergism integrates a series of principles focused on perfection of self organization at system level: the principle of non-linear casualty, principle of interaction, principle of efficacy, principle of domination, principle of optimum self-organization, principle of optimized cooperation.

The principle of domination requires the selection of a low number of variables that should correctly and completely describe system behaviour, when unstable variables dominate the stable ones. By a series of successive transformations and assessments, system variables are classified in dominating and dominated variables (the dominated ones will be removed as non-essential). The principles of optimum self-organization and optimized cooperation determine the change of a synergic system into a system of systems.

3. Principles of Synergic Economy

The sustainable and entrepreneurial economy of the current millennium may only be achieved by the synergic effect of its technical-economic, social-political, ecological systems, etc. In a vision specific to synergism, such synergic economy should be based upon principles such as:

- principle of responsibility;
- principle of competition and free initiative;
- principle of efficiency;
- principle of efficacy;
- principle of innovation;
- principle of efficient use of intellectual capital.

A synergic technical-economic system may have the meaning of:

- firm, institution or any other organization whose activities have a minimal negative effect on the environment and are carried out on an innovatory basis of maximal use of intellectual capital;
- product, modern technology, machine-tool, engineered equipment;
- several firms and institutions interrelated by connections, relationships and interdependences which may form a cluster-type innovation system promoting scientifically advanced technologies.

In the 1980s, the concept of synergic technical-economic system was defined as the system that ensures the progress of a firm starting from the technical base and the financial means of the same and based upon:

- the entrepreneurial and innovatory spirit of the business management and employees;
- the promotion of economic-ecological solutions in the technological development.

From the organizational perspective, synergy may be summarised by the colloquialism „there is a crowd“. The results of an organization or of a team of the same do not account for the algebraic sum of the results of each and every individual member, as the control of the activity of each member does not mean control over the entire organization/team. That is why modern organizational management pursues controlled construction of a systematic cohesion of the collective/team/group by various techniques and methods such as “team building”.

At organizational level, synergy lays at the base of creation of competitive advantages. This has a multiplicative effect of all abilities, resources, capacities and knowledge held by certain parts integrated into and used within a system. According to Harris, “a high-synergy corporation is one in which employees cooperate for mutual advantage because the customs and traditions of the corporation or organization support such behaviour. In this non-competitive atmosphere the individual works toward his or her betterment as well as that of the group” [7, p. 363].

Synergy arises from the combination of subsystems and system resources. Besides the revenues pursued from the activity of a system, undesirable, additional effects, both positive, and negative, may arise as well. The synergic effect arises only by combining the parts of the system. But sometimes, a major problem is faced with when complex systems are built without fully understanding the consequences of their creation.

4. Effects of Synergy at the Level of the Firms

The first synergic role of the manager is to create a vision, then to attract people who

may help attaining the organizational goals, approaching the vision as being theirs and accepting the responsibilities to get organizational performance. This process of aligning personal vision to that of other people represents the organizational vision.

There is a close interdependency between leadership and synergy from the perspective of the capacity to institute a shared vision and to consolidate the feeling of people belonging to a group, team with a joint objective. In this context, Gaggiotti mentions the benefits provided by a synergetic manager "whose ultimate desire is to be able to make synergy effective in practice, to attain the ability to integrate innumerable and diverse business processes and phenomena into a unified comprehension, and to create a situation of unity in diversity" [6, p. 267].

Synergy means optimal integration of certain independent components of a company and refers to the increase of net benefits attained by parts interaction to a joint goal.

Synergies may become essential incentives for the accelerated growth of schools and universities and for the development of the activities of research and development in the federal government, in economy.

Financial difficulties force the higher education institutions to implement management practices, while the professionals' efforts will be directed to the achievement of the organizational objectives, but also to the natural increase and personal growth.

Synergy is the most important operation consisting in coordination and synchronization of all actions and processes in the achievement of the same scope. Operations, methods, structures cooperate in a synergic way and, thus, increase the organizational efficacy. The succession of events is achieved

so quickly that it gets into simultaneity: concentration and coherence of all the forces operating synchronically. Any synergic cooperation of some components (of a system) should hold a central component, a nucleus around which all the other components are organized; this centre is a kind of "director" or a kind of coordinator. Diffusion, "communication" among components is very fast in the synergic systems.

Due to unity between movement and organization, information transmission between components or various "local cooperation" is accelerated. According to Prigogine [9], each part of the system becomes able to "feel", "perceive" what is going on in other parts. This favours proliferation of the combining mechanisms amplifying the creative potencies of components. We can talk about a new type of coherence based upon an original mechanism of communication between parties as a result of dynamic, accelerated self-organization. At any time, "a local cooperation", in a group of components of a certain area, by an extension of the operating fields (operational transfer) can be transformed into global cooperation, communication in all the areas of the system.

Synergism is the global effect of cooperation and/or concurrence of the parts (elements, internal components) and represents their "subjugation" to the whole. Synergy is produced by the organization-movement ratio, as a result of interactions operation, of invariant "skeins" of interactions where, besides the energetic issues, informational effects also take part.

Dreikorn argued that "if an organization does not have the characteristics of integrated business processes and synergy in action, then it is generating significant waste

and sub optimizing the creation of value for the customer" [4, p. 15]. Synergy should not be seen only as a result, but also as a complex process gathering all abilities and capacities of the composing parts for getting competitive advantage, being based on collective effort.

Synergy also supposes, besides cooperation/concurrence of subsystems achieved by horizontal "communication", over determination of the system as to subsystems, therefore subsystems subjugation by the adjacent hierarchical system; over determination appears precisely by this domination process (by "orders" of the new system) and „behaviours" of subsystems.

Cooperation of subsystems, internal components of the system should be and can be induced, stimulated.

5. Synergy within the Centre for Organizational Strategies and Leadership of the University of Bucharest (CSOL-UB)

This is an institutional structure of the University of Bucharest (UB) aiming at creating and developing: training and consultancy programs in the field of organizational strategies and leadership, researches in the field of organizational strategies and leadership, cooperation with similar organizations in the academic and business environment, events specific to the field of organizational strategies and leadership involving some famous personalities from various environments (academic, business, political, social, cultural, etc.). Moreover, CSOL-UB also aims at supporting the development process of interaction between the academic and the business environment, in order to improve the

organizational managing modalities.

On a longer term horizon, CSOL-UB pursues the development of a network structure at the level of Romania, since there are 41 counties that may become 41 network knots. National network pursues the creation of an educational system in the field of organizational strategies and leadership addressing the pre-university, university and post-university education, as well as other social-professional groups.

Another goal of the centre is set by defining clear directions of training in the field of organizational strategies and leadership. Moreover, it aims at sustaining the creation of necessary competences and qualifications in the field of organizational strategies and leadership by providing some training and consultancy programs in these fields for: students, teachers, other employees of the UB, employees of public entities and of the business environment.

CSOL-UB will organize on an annual basis an international conference in the specified fields to which university professors, students, researchers, consultants, entrepreneurs, politicians, etc. will take part. The goal is that an interdisciplinary research group formed of economists, psychologists, sociologists, mathematicians and other specialists should be configured at the level of UB.

Besides, this aims at ensuring general information and consulting on the progress of researches in the field of organizational strategies and leadership and presenting concrete situations of manifestation in the public entities, in the business, political and social environment.

CSOL-UB will provide training and consulting services, will work out studies and will carry out activities of design, analysis,

assessment and development of policies and programs in the fields of organizational strategies and leadership, upon public grants, sponsorships, research or consulting contracts. CSOL-UB will edit periodical or occasional field-related publications.

The financing sources used by CSOL-UB will be personal incomes, revenues from the development of training and consultancy programs addressed to the business environment, from research contracts at national and international levels, from grants, donations or sponsorships.

The way of organization and financing of the CSOL-UB activities stresses how synergy contributes to the support of the centre, to the proper development and long-term efficacy of its initiatives. Thus, CSOL-UB actions are possible by the mediation of financing by contracts of service provision and research, research grants of MedC, CNCSIS or of other financiers, donations, sponsorships, revenues of the faculties or of the UB.

CSOL-UB also aims at creating some partnerships and cooperation relationships between the UB and other organizations in the field of organizational strategies and leadership. Thus, this centre wants to use and to supply information and to provide the results of its own researches and accumulated experiences to the interested parties, thus achieving a synergic effect capable of intensifying the whole activity of the centre, and that of its partners as well.

Synergy is also manifest in CSOL-UB guidance to the creation of competences and skills required by the field of organizational strategies and leadership. In this regard, it organizes training and consultancy programs in these fields for: students, professors, other employees of the UB, employees of the public

institutions and the business environment.

CSOL-UB aims at ensuring the involvement of the main actors in the business environment with a view to provide scholarships, sponsorships, practice stages, provision of competences in carrying out some trainings in the field of organizational strategies and leadership. This way, synergy appears between the competences and the resources the University and its "actors" benefit from and the business environment facilitating youth access to the labour market. Moreover, the centre aims at promoting the research activity on the development of cooperation relationships and partnership between the business environment and the university environment.

One of the major projects promoted by CSOL-UB has in view the organization of an annual international conference on leadership issues. The second edition of the international conference dealing with the topic "Leadership Perspectives at the University of Bucharest's 150th Anniversary" gathers in some sections and workshops students, professors, business people, consultants, personalities from the political, social, cultural fields. The interdisciplinary activities carried out on the occasion of the events lay the premises for achieving some partnerships with synergic effects.

An academic network has been created by CSOL-UB, and such network is formed by colleges, the academic environment and business environment facilitating concentration of some specific components of the network within some network knots where projects are carried out at a certain moment. Network optimization leads to rendering efficient the process of communication between the components of CSOL-UB, the main knots being

CSOL-UB as a central nucleus, and the other knots: master's degrees, SpherAA, Team Work, academic environment, business environment, colleges. Moreover, an important role within the networks created by CSOL-UB is held by feedback since it contributes to improving the quality of the information sent by various communication channels.

The CSOL-UB partnerships have shown that virtual networks contribute to the best use of time and, consequently, to the completion of projects on due term. By using virtual networks, information transmission within networks is accelerated, thus projects becoming efficient as regards both time and speed of response, and the quality of the activities carried out.

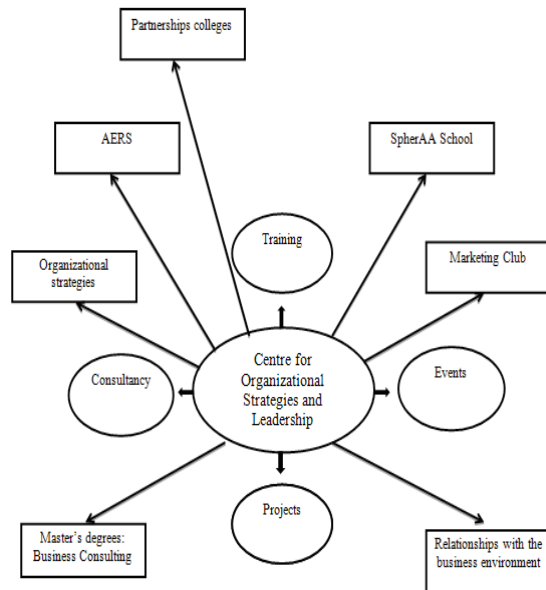


Figure 1 Synergy within CSOL-UB

Conclusions

The organization of some systems (i.e.: CSOL-UB) and the creation of some partnerships with other social-economic partnerships prove by the results obtained that joint effort adds value to individual efforts.

The CSOL-UB experiment leads to the conclusion that researches on the synergy of educational systems with the participation of some specialists from other fields: business, political, NGOs, public entities, etc. are required.

The partnerships created by CSOL-UB become veritable research laboratories where teaching, knowledge, and processing of information are essential marks of individual growth and organizational strategies. Interactions among the knots of the networks created by CSOL-UB increase the quality of the outcomes of the projects carried out by the same, entailing the increase of the added value and facilitating the creation of other educational networks.

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