

COMPLEXITY AND ORDER IN THE TRANSFORMATION OF INTELLIGENCE ORGANIZATIONS

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Motto: *"The only way of discovering the limits of the possible is to venture a little way past them into the impossible"*
(Anthony C. Clark)

Abstract:

To be able to study intelligence organizations, one must first understand the manner in which organizations have evolved in the last decades in parallel with the "revolutions" taking place in economy, technology and society. We can, therefore, notice a shift from the paradigm of the organization as a "machine", whose functioning can be understood through a detailed analysis of its inner mechanisms to the paradigm of the organization as an "intelligence organism", whose functioning surpasses from a complexity point of view everything we have previously imaged, limiting the knowledge we may gather on it. Therefore, this article argues for exploring ways in which intelligence organizations can stimulate and harness better their potential for improvisation, creativity and imagination.

Keywords: *intelligence organizations, intelligence organism, transformation, complexity, order*

Introduction

There is first a need to define the term complexity and complexity theory, which is still a rather new and ambiguous field. Though, one may intuitively associate complexity with complicatedness, randomness or arbitrariness, this is an erroneous manner of looking at this particular concept. To understand complexity it is easier to first understand the contexts in which complexity is brought into discussion. For example, when looking at international relations one found questions such as: Why did the Soviet Union disintegrate in 1989 or why did the Apartheid regime of South Africa collapse

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in 1991? Questions for which no researcher could provide one answer. The reasons was the high number of variables interacting with one another, which needed to be considered in the analysis when attempting to root out the causes, which had led to that particular effect.

Though these questions may not have an easily identifiable answer their relevance and importance for intelligence agencies is undisputable, especially when considering the short and long term international security impact of those two events. These two cases are only examples of the manner in which the security environment has become a complex system, in which survival is conditioned by the ability to *spontaneously adapt*.

In other words the security puzzle is not only formed of thousands of pieces as a result of the information flood plaguing intelligence organizations but the image behind the puzzle is constantly changing.

The background research for these reflections can be found in the field of natural sciences, more precisely studies dealing with brain functions. According to Waldrop, "*organisms constantly adapt to each other through evolution, thereby organizing themselves into an exquisitely tuned ecosystem*" (Waldrop, 1992, p. 11).

Though spontaneous and unpredictable, complex systems should not be equaled with chaotic systems. Quite the opposite, complexity can be defined as a balance between chaos and order, something which is generally called *the edge of chaos*. An organization located at the edge of chaos is one which successfully manages to balance the need for coherence and cohesiveness with that of disorder and spontaneity in such a way as to produce innovation.

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We can, therefore, notice a shift from the paradigm of the organization as a "*machine*", whose functioning can be understood through a detailed analysis of its inner mechanisms to the paradigm of the organization as an "*intelligence organism*", whose functioning surpasses from a complexity point of view everything we have previously imaged, limiting the knowledge we may gather on it.

But what makes and organizations *intelligent*? According to Schwaininger, there are four distinct features: capacity to adapt to external stimuli, capacity to influence the environment in which it acts, capacity to define itself in accordance with the environment (when this is required) and

the capacity to significantly contribute to the viability and development of the system to which it belongs (Schwaininger, 2003, p. 54).

Other authors have used the concept of “complex-adaptive intelligence systems” (CAS) to capture the new paradigm of organizational evolution. The main functions of these new types of organizations are learning and adaptation (Yick, 2004, p. 8).

On the assumption that intelligence organizations aspire towards such an organizational model we can immediately identify two fundamental questions in need of answers:

- *How do intelligence organizations learn?*
- *How must intelligence organizations adapt to the external environment and how to strengthen their resilience to external surprises?*

Without attempting to provide a final answer to any of the two questions, I propose exploring various options available so as to be able to provide a set of recommendations.

One of Yick’s conclusions is that organizations are always negotiating an equilibrium between complexity and order, so that their survival is dependent on their ability to innovate and be creative. To preserve their adaptive character, the organization must be proactive and dynamic, evolving “intelligently” in parallel with the changes in the surrounding environment (Yick, 2004, p. 10). This explains why many of the authors in the field have labelled the 9/11 terrorist attacks in the U.S. as a “*failure of imagination*” instead of a failure of procedures.

A good analogy for the way in which CAS function was presented by Brafman and Beckstrome, in their story on the search for the “grandmother cell”. According to the two authors, for a long period of time scientists have tried with the help of several tests to prove that memories are located inside a single neuron. This effort entitled the search for the “grandmother cell” (the neuron holding the memory of the grandmother). In spite of the fact that they have sensors which were more and more sensitive, they haven’t managed to prove this hypothesis, but quite the contrary they have discovered that memories are not located inside a single neuron, but they are distributed throughout an entire network of neurons (Beckstrome & Brafman, 2006).

Following this argument, it becomes clear that organizations should not try to place particular skills inside one single unit, but skills should be distributed evenly throughout the organizations, thus increasing its overall resilience. When it comes to putting this idea into practice, several pragmatic problems appear. One is that there are cases when the integration of

resources in one or several centers is preferable, facilitating the accumulation of expertise and limiting the inefficient use of resources.

A good example for such a situation from within the intelligence community is the institutional structure behind SIGINT production. Producing signals intelligence is costly, requiring a large quantity of human and material resources. Therefore, in order to save costs and because of the complexity and sensitivity of the task at hand most countries have opted for building national SIGINT platforms.

Other intelligence types are most suitable for the network model, such as OSINT capabilities, which can be easily distributed evenly inside the organization. The issue of decentralization v. centralization is further addressed in Section 4.3 of this thesis.

Another important feature of complex-adaptive systems observed by Brafman and Becksrome (2006, p. 75) is that once people are placed in an open system they will automatically desire to contribute to its development. From an organizational evolution perspective, this is especially important as it provides the basis for the organization's learning process.

CAS and leadership

Leadership has been another dimension often researched in CAS analyses. There is an emerging trend arguing for the replacement of the CEO-type of leader (who stands at the top of a hierarchy) with the "catalyst-type" leader, whose role is to use his creativity and innovative abilities to support the creation of a network necessary for solving the organization's problems while allowing individuals to develop freely (Beckstrome & Brafman, 2006, p. 75).

The idea of a "catalyst leader" is also to be found in the work of Chinese philosopher Lao-tzu who said *"A leader is best when people barely know he exists, when his work is done, his aim fulfilled, they will say: we did it ourselves"* (Harrison, 2010). This is again a very provocative fact if we are to apply it to intelligence organizations, especially the military ones. Military organizations are by their very nature highly hierarchical and highly centralized, heavily relying on command lines and procedures, which makes such a transition in leadership very problematic.

When it comes to intelligence one could argue we can notice the transition from the CEO leader to the catalyst leader in the form of the project manager, whose role is to build a team, bring new ideas and disappear when the project ends and the HR expert. The project manager should benefit from

increased autonomy and should have the ability to bring together the necessary expertise to solve the problems encountered by the organization. This would mean bringing together individuals outside the limits of a single department.

If intelligence organizations aim to become competitive-adaptive systems they must engage in a process of “looking ahead” (intelligence transformation), often having to deal with the systemic effects produced as a result of such a process.

The first element to consider are the *unexpected outcomes*, which frequently emerge when the change is “constructed” as a linear top-bottom process, such as is the one under analysis in this article. The main caveat of this approach is that when the “*solution*” devised at the strategic level interacts with the complexity of the local circumstances, it does always behave as predicted (Burns, 2007, p. 29).

The other element, which needs to be considered are the *consequential outcomes*, namely the measure in which the changes affect the system’s ability as a whole to conduct its activities. According to Stacey (2003) both of these effects can be better understood when employing chaos theory, which challenges the fundamental tenets of organizational change theory, by undermining the idea of linear causality. Chaos theory mentions interrelationships and spontaneous self-organizing, which imply the organization is characterized by intrinsic unpredictability.

What the theories on complexity do is to provide a framework for seeing and understanding the world, leading us to a new paradigm focusing on the simultaneity of action and decision-making, which challenges the old one, which states that planning and formal decision-making are the prerequisites of effective action.

However, one of the main challenges when dealing with organizational change in a complex environment is the *imagination gap*, summarized by Arthur Schopenhauer in the following statement: „*everyone takes the limits of his own vision for the limits of the world*”.

Therefore, to achieve efficiency in this constantly changing environment we may see ourselves forced to move from planning and anticipation to improvisation, creativity and imagination (Weick, 1995). The general rule in organization theory is that an organization only hears what it expects to hear, or in other words it pre-filters the structures information it receives through a framework of beliefs and values already constructed, which reinforced the existing context and supports a pre-defined goal.

However, it is the information which is left outside the structured framework which has the potential to disrupt and more often than not to inspire and foster growth.

Therefore, this article argues for exploring ways in which intelligence organizations can stimulate and harness better their potential for improvisation, creativity and imagination. Though many people are tempted to confuse imagination with creativity, the two are actually distinct concepts. On one hand imagination is "*the ability to form images and ideas in the mind, especially of things never seen or never experienced directly*" (Manu, 2007, p. 9), while creativity can be defined as "*the ability to use imagination to develop new and original ideas or things*" (Manu, 2007, p. 10), usually driving the desire for innovation.

While creativity is used to improve the condition of the organizations by finding new variables to solve existent problems, imagination is used to discover new capabilities, existing behind latent behaviors and needs.

The value of imagination for preserving the organization's competitive edge has been illustrated yet and yet again in the business sector, with the emergence and success of new tools and technologies such as smart phones, Amazon, Facebook, Twitter etc. To be able to harness imagination to its full potential, one must start by mapping the current limits of knowledge, as well as the limits of people and the environment, something which Alexander Manu defines as „the imagination challenge" (Manu, 2007, p. 19). One of the ways to overcome the imagination challenge is by introducing the idea of play in the workplace.

Play is a concept, which only seldom applies to adults, and which is rarely if ever associated with the workplace. However, in the context of this thesis, the concept "play" is a reference to the creation of a space free of boundaries of common logic and other constraints, where people can employ their imagination and creativity freely.

Intelligence organizations and serious gaming

For an organization to evolve into a CAS, constantly learning and adapting, it must create a *temporary play space* – a platform for the exploration of imaginative possibility. Traditionally, the idea of play (as

understood in this paper¹) has been absent from the intelligence environment, either because of time constraints or as a result of the organizational culture.

Lately, we have noticed a return of *play* inside intelligence organizations with the introduction of serious gaming into training programs dedicated to the intelligence community. The concept *serious games* refers to situations where gaming technology is used to support traditional training in real world problems (Zyda, 2005).

Already by 2002, the U.S. Army was using serious gaming (e.g. the game *Americas Army*) to promote its recruitment policy. The military used serious gaming in training for a wide variety of tasks, such as medical training, driving in convoys through hostile areas, language and cultural learning. Though the military has been one of the main clients for serious gaming, especially in the U.S, in the last years the list of users has expanded to include other governmental agencies such as universities, law-enforcement agencies and even the intelligence community (Harz, 2005).

By 2015 we witness several notable evolutions in this field, ranging from the organization of dedicated events (e.g. *The International Conference on Exercises, Gaming, and Simulations for Intelligence and National Security* organized by Georgetown University in March 2015) to research funds allocated for building capacity in this field (e.g. the European FP7 PANDORA project).

The main advantage of complementing intelligence training with serious gaming is that it allows trainees to learn from their mistakes without having to face real world consequences. Users are even encouraged to make mistakes so they may benefit from a truly experimental learning of the various consequences their actions may have.

Depending on the purpose, we can distinguish between different types of serious games, which can be used to stimulate imagination. The first and most common type of game is the simulation. In simulation games, real life situations are imitated in order to allow the trainee to learn certain procedures or acquire skills needed in real world actions. This type of game is ideal, when replicating high risk situations. In the case of intelligence training, these types of games are especially suited for training in the field of counterterrorism, surveillance and crisis management.

¹ Ones cannot argue that intelligence organisations are engaged in a continuous game with their challengers (e.g. terrorist organisations), but this is not the meaning attributed to the concept in this thesis.

An alternative to simulation, when it comes to intelligence training is the *Serious Sandbox Game (SSG)*, a creative tool with the potential to create a free open space in which new perspectives on complex issues can develop. These types of games enable the players to briefly escape from reality with the purpose of returning with a fresh take on how to organize reality (STT Netherlands Study Centre for Technology, 2012, p. 4).

The main advantage of SSGs is the way it stimulates out-of-the-box thinking and experimentation, being especially suited for training intelligence analysts.

Nevertheless, studies have shown that using serious gaming in training comes with a downside, which organizations should be aware of:

- a. It stimulates "Lazy thinking – it shortens the attention span of users;
- b. It encourages wrong types of motivations – All games include extrinsic rewards (you play for the score), thus shadowing the more important issue of intrinsic motivation;
- c. It may make trainees to lose sight of the main goal – Even serious games can be turned from learning tools to becoming a distraction (Noodle. The Social Intranet, 2013).

If intelligence organizations aspire to become complex-adaptive systems they must include improvisation, creativity and innovation as key pillars of their organizational model.

According to improvisation theatre, improvisation does not simply appear. It needs to be founded on three main dimensions:

- *Identifying opportunities and accepting the challenge (saying yes to new things)* (Burns, 2007, p. 50)

❖ In the case of the Romanian Intelligence Service, a good example of such a behavior is has been its willingness to participate in competitions for European grants. This is certainly not traditional for an intelligence organization, but it did bring benefits (in terms of both material and intellectual gains), that could not have been acquired differently.

- *Seeding small interventions into opportunity spaces* – because everything is connected, interventions in response to problems do not have to be direct responses to those problems. Complexity theory has brought improvements to this model, by arguing that small changes may have major effects (e.g. Yick's considerations on the butterfly effect) (Burns, 2007, p. 50).

❖ When applying this to the intelligence field, we may conclude that a full organizational reform process may not be the best solution. An intelligence agency may want to direct more of its efforts and resources

towards adjusting the surrounding environment, instead of its own structure. For example, in the case of Romania, efficiency of intelligence collection could be increased significantly by working more towards educating the population in the spirit of a security culture, by increasing the awareness of what public interest means in the security field, instead of investing in the technological instruments employed for collection or by insisting on reforming the collection process itself.

❖ This also means there needs to be more initiative at the lowest level of action, for small corrections, which may have a significant systemic effect.

- *Re-incorporation* – improvisation does not occur in a blank space, but new elements need to be connected to the old ones, much like in a children's story, where different elements are woven in the storyline from beginning to end (Burns, 2007, p. 50). Therefore, for it to work, improvisation needs to bring different narratives together in a meaningful whole.

❖ This could be translated in the need of committing to a process of retrieving the memory of its non-democratic past, understanding its past and current organizational culture and exerting efforts towards linking its various reforms and projects in a unified whole.

Conclusion

One of the main challenges in stimulating creativity inside intelligence organizations is the "*fear of failure*". The risk that some of the creative ideas when put into practice will fail is something which all organizations supporting the creativity of their employees acknowledge and embrace. This is a normal occurrence as proven by famous cases such as Google, Apple or Amazon, who have had some notorious fails at some point in their evolutions. Nevertheless, when it comes to intelligence, the ideas of accepting and embracing failure beforehand is unconceivable. And to a certain extent this is normal, if we consider the effects of the 9/11 intelligence failure in the US or other similar cases around the world. Intelligence failure is generally accompanied by huge social and economic costs.

The consequences of intelligence failures are also observable inside the organization, where top management is being changed (under the public pressure) and employees see their work patterns being disrupted. This type of *retaliation* makes high level intelligence managers to be risks adverse, which in turn limits the level of creativity inside the organization. To re-phrase a quote of John Rockefeller, intelligence managers are afraid to give up the good

to go for the great. Therefore, instead of stimulating creativity they most often encourage the standardization of work flows, as this has proved successful in the past.

The second main challenge is that often creativity requires time. In order to be creative and come up with innovative solutions employees must have time in which to follow personal projects, independent of their normal task. When it comes to intelligence organizations, time is one of the scarcest resources available. The security evolutions take place with such speed and frequency that intelligence collectors and analysts seldom have the time to do anything else but try to catch up with the events. Though intelligence organizations have a foresight function, the complexity of the security environmental makes strategic surprises inevitable (Mattis, 2014).

Therefore, any strategy for increasing the creativity of an intelligence organization should have two levels:

1. Creativity as a “*must*”. Introducing creativity as a requirement in the recruitment process for intelligence organizations, for both field officers and analysts. Though studies made on the profile of intelligence analysts have long included creativity among the key skills, this has not been extended to field officers (the collectors of intelligence), though there are sufficient arguments to prove creativity is as important in this stage (e.g.: creative solutions for addressing a threat, creative means of collecting information)

2. Harnessing creativity to its full potential. This can only be achieved if the organizational culture of intelligence agencies is changed, by creating a space for new ideas and open dialogue.

One method of harnessing creativity is encouraging analysts to develop a public presence and to engage in scientific research. According to Peter Mattis, senior intelligence analysts who engage in academic work outside the limits of their organizations should be encouraged for this will provoke them to adopt a different mode of thinking. People, would, thus, be free to explore new ideas and concepts, while being required to be very systematic in the arguments they provide in support of their ideas. It also helps build a bridge between intelligence practitioners and outside stakeholders, which can then be employed the intelligence organizations in support of their actions (Mattis, 2014).

Developing key research skills inside the intelligence community is another way to go as it helps connect intuition (which is tightly tied to creativity) with scientific arguments, brought in support of one’s initial idea. The second role of research, according to Mattis is to build “*a repository of*

knowledge", in the sense that the more organized knowledge a person possesses the easier it is for that person to make intuitive leaps. (Mattis, 2014)

To conclude, for intelligence organizations to preserve and maximize their performance they must place themselves at the "*edge of chaos*", by blending an integrated vision of the organization with allowing each department, group and individual from the organization the freedom to define how they will contribute to achieving the objectives, through creativity, improvisation and innovation.

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