

THE ROLE OF INFORMATION IN GROWTH OF INSTITUTIONAL RESILIENCE

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Abstract

In the age of knowledge that mankind is currently going through, information is the basic element that has led to a paradigm shift in all social spheres. As a neo-factor of production, it is the basis of innovation, an essential element of increasing economic competitiveness.

Continued adaptation leads to increasing the capacity of an institution, with public or private capital, to respond quickly to challenges, mitigate risks and ultimately face change. Thus, the risk management mode that the institution can assume or, more precisely, determine its acceptable level, makes the difference between resilience and collapse.

This approach aims to address information issues, how it impacts institutional resilience, and at the same time attempts to identify various ways to increase their anti-fragility.

Keywords: information, knowledge, risk, institutional resilience, management

JEL classification: D83, D81, G32

Introduction

Mankind is now in the age of knowledge, a time when information is the basic element that has led to a paradigm shift in all social domains. A concept emerged in the late 1990s and used by a part of the academic society as a variant of the notion of "information society," the "knowledge society" was adopted by UNESCO as an instrument in its institutional policies, because it includes, in addition to the idea of technological innovation, a dimension of social, cultural, economic, political and institutional transformation and a more pluralistic, more developed perspective.

The concept of "knowledge economy", popularized by Peter Drucker in his book "The Age of Discontinuity" (1969), refers to the knowledge-based economy, that is, the economy that uses a large proportion of knowledge-based and innovative technologies to achieve economic results.

Peter Drucker highlighted in his work "The Effective Executive" (1966) the basic concepts of the knowledge economy. The author describes the differences between the manual worker who works with hands to produce goods and services and the so-called "knowledge worker", who works mostly with the mind, and who produces ideas, information and, ultimately, knowledge.

He considers knowledge to be a real tool, a basic one, with an essential role, and not a subtle one, and consequently ignored in economic analyzes.

Information and Knowledge and Transition to an Information - Based Knowledge Economy

The concept of knowledge economy is based on the notions of information, knowledge and, implicitly, knowledge. We can define the information by going through the entire logical and psychological chain of signal - sign - data - information as that data that reduces uncertainty. Knowledge is that information which, once received as such, finds in the pre-existing cognitive "deposit" of the receiver a compatible information base (and knowledge) that allows it to be structurally integrated.²⁵

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²⁵ Dinga, Emil, *Cunoașterea, acțiune și ordine economică*, <http://emildinga.ro/category/carti/carti-aflatae-in-lucru/>

Knowledge is made up of all the cognitive domains that are based on cognitive deposits formed in a subject. This is not only the logical sum of the cognitive deposits taken individually, but it also contributes to the synergistic effect produced by the connections between them, manifested by the mutual causal action.

Specialists describe the current global economy as a transition to an information-based knowledge economy, full transformation requiring a paradigm transformation that leads to the same importance of knowledge resources (expertise, know-how, etc.) with the other economic resources.

In our days, huge amounts of information are processed every second. According to a recent report by Cisco Systems, the world market leader and the leading provider of IT and communications networks, global IP traffic will reach 3.3 ZB (zettabytes) by 2021 per year by 2019 by 2021. This is a challenge for technological advancement, which will have to cope with the need to process such a huge amount of data that comes from the traffic of business systems, social networks, portable technologies, or mobile applications.

Table 1

Global IP traffic in 2016-2021

IP Traffic, 2016-2021	2016	2017	2018	2019	2020	2021	CAGR 2016-2021
<i>By Type (Petabytes per month)</i>							
Fixed Internet	65942	83371	102960	127008	155121	187386	23%
Managed IP	22911	27140	31304	35226	38908	42452	13%
Mobile daa	7201	11183	16646	24220	34382	48270	46%
<i>By Segment (Petabytes per month)</i>							
Consumer	78250	99777	124689	154935	190474	232655	24%
Business	17804	21917	26220	31518	37937	45452	21%
<i>By Geography (Petabytes per month)</i>							
Asia Pacific	33505	43169	54402	68764	86068	107655	26%
North America	33648	42267	51722	62330	73741	85047	20%
Western Europe	14014	17396	21167	25710	30971	37393	22%
Central and Eastern Europe	6210	7451	8940	11016	13781	17059	22%
Middle East and Africa	2679	3910	5538	7773	10941	15490	42%
Latina America	5999	7502	9141	10861	12909	15464	21%
<i>Total (Petabytes per month)</i>							
Total IP traffic	96054	121694	150910	186453	228411	278108	24%

Source: Cisco VNI, 2017

In his speech at the Davos Forum in January 2016, Klaus Schwab, Executive Chairman and Founder of the World Economic Forum, said that “the changes are so profound that, from the perspective of human history, there has never been a time of greater promise or potential peril. My concern, however, is that decision makers are too often caught in traditional, linear (and non-disruptive) thinking or too absorbed by immediate concerns to think strategically about the forces of disruption and innovation shaping our future”. Also on this occasion, he reveals that „ believes that we are on the verge of a revolution that will fundamentally transform the way we live, work and interact with each other. Participation in this fourth industrial revolution has to be integrated, comprehensive, multilateral, involving the public sector, private sector, academia, civil society”.²⁶

Information and Risk in Decision-Making Process

A real challenge is not only to process the huge volume of data, but also to record, store, analyze and distribute them. This process of information circulation is not free of risks, and data can be trafficked into more or less obscure interests, representing one of the dangers of the fourth industrial revolution.

At the same time with the development of human society, management emerged and developed a science that self-imposed as a process of guiding human activities in order to achieve the desired goals.

²⁶ Schwab, K. (2016). *The fourth industrial revolution: what it means, how to respond*, World Economic Forum, Davos, January, 14

For a long time, managers have considered decision-making as an art, which they have mastered by learning from trial and error. A decisive role played creativity, reflection, intuition and experience, and less quantitative methods based on a scientific approach.

The huge amount of information, a defining feature of the knowledge society, makes today's management evolving continuously, being in constant change. The ubiquitous, non-intrusive and proactive electronic environment helps managers in a personalized and context-sensitive way in their everyday tasks. The economic, social and political environment in which management decisions are currently taken is characterized by a pronounced and continuous dynamics, so that the risk of achieving an unwanted or different result than that anticipated and taken into account when choosing the variation as a result of the application the decision is quite high.

Institutional resilience is the ability of an institution to prepare itself to resist and recover after major disasters or other circumstances that exceptionally obstruct, in part or in full, the conduct of current activities.

Crises can lead to disruption of the institution's activity, damage to reputation and / or the creation of a negative social impact.

The state of crisis arises when it is convinced that a misfortune can only affect others. This conviction automatically leads to ignorance, negligence, and, most of the time, lack of inspiration. All this is reflected in the increased vulnerability of systems and an exposure to possible shocks caused by the occurrence of unwanted events.

The crisis refers to undesirable events triggered by human and / or natural factors that cause strong emotional trauma and material damage at individual, institutional and social levels.

Experts from various fields analyze situations and continually try to find answers to questions such as:

- when and where a crisis occurs;
- which is the magnitude of the events that can be considered by the systems to be able to maintain their operating state;
- are we ready to deal with?

The crisis itself leads to the deterioration of human, economic, political, social and human relationship systems and may lead to disruption of activity, damage to reputation and / or the creation of a negative social impact.

If anticipation of any type of crisis or any catastrophic event is very difficult, information on identifying the potential for the occurrence and spread of undesirable events is vital. Information and communication play a pivotal role in formulating the plan for continuing work and returning to normality.

Technology helps identify and understand potential risks, so its input is the first step in the process of developing a crisis and response strategy.

At this level of responsibility comes the resilience that has the mission of setting up the specific response strategies for each type of unwanted event by involving as many decision-makers as possible.

Building the resilience of an organization / institution implies:

- developing a specific regulatory framework;
- material and human resources allocation as well as the necessary funds;
- designing a portfolio of procedures and working rules;
- developing the perception of the importance of building resilience and adopting measures that increase social synergy between all the actors involved;
- promoting and implementing at all levels the culture of anticipation, prevention and risk preparedness;
- elaboration of post-crisis plans and return to normality, etc.

Relationship between Information and Institutional Resilience

Information helps the institution adapt to changes of any nature (climate, economic, political, social and even technological) in a timely manner and at a lower cost.

An organization or institution can achieve its objectives only when it identifies the risks of any nature as accurately as possible and assumes them and controls them.

Information requires searching and finding new innovative solutions through:

- cultivation of the desire for professional development, knowledge of the new technique;
- discovering new products (medicine, ecology, biology, physics, chemistry, etc.);
- developing rules and methodologies for improving the working process;
- adapting internal and external communication to solve the created situation;
- taking the right decisions under uncertainty;
- insurance of goods and calculation loss coverage.

The manager must do his best to obtain the information he needs to ensure the quality of the decision. At the same time, he must adopt participatory management, involving people in charge of making the decision at optimum time.

The evolution of technology and new research in various scientific fields, even under stress, are tools that a manager needs to use in his work.

Anti-fragile refers to stress resistance, shock, whereby a system gets better, using resistance and innovation as the main engines of growth and development over time, in unknown, uncertain conditions. This is why most of the time, building an anti-fragile system is a lengthy process that requires major efforts from the entire staff of the institution and in particular, from the managerial staff.

A robust management strategy should include both risk management programs and procedures that aim at minimizing the likelihood of these risks and potential exposure.

The ability to cope with problems and failures depends on the psychological capacity of anyone. The use of skills, knowledge, strengths helps the recovery process after any shock that has occurred as a result of a special, unexpected event for both an individual and his or her collective or family.

These special events may have a major impact on an entire community, such as natural and industrial disasters, international financial crises, or for an individual through job loss, financial problems, illness, the death of a close relative, etc.

Experts in sociology, psychology, philosophy, medicine etc. studies how people are able to learn and develop specific skills to develop their ability to become resilient.

Information along with communication helps human resilience to focus on analyzes of major risks and threats to human systems.

The competitiveness of an institution is largely influenced by the ability to understand and adapt as accurately as possible to the surrounding world.

The objectives of current research involve identifying the social, economic and policy factors that contribute most to facilitating institutional resilience.

The general aspects tracked in the study are:

- the importance of research for its own innovative development;
- valorizing human resources in terms of motivation for performance;
- perceived self-efficacy in learning;
- social relation in professional contexts;
- the subjective well-perceived state of personnel in the institutional space;
- mediating factors that facilitate institutional resilience: leadership, community, socio-economic environment, policies.
- identifying the context factors that contribute to the manifestation of institutional resilience in the target group of research;

- developing a set of recommendations (at institution level and at policy level) ;
 - designing a methodology for a longitudinal study with resilient and non-resilient subjects.
- Thus, information and knowledge can be used as a competitive advantage to reach the goal at the proposed time.

Competitiveness suggests safety, efficiency, quality, high productivity, adaptability, success, modern management, superior products and optimal costs.

At the institution level, the ultimate goal is to obtain welfare benefits. It can be achieved by using:

- research and innovation programs;
- modern technology;
- products and services newly launched on the market, in other words by making the most competitive technological advantage.

Technological competition requires business resilience and the company's ability to quickly reconfigure and adapt business to changes of any kind (national and international political and economic, climate change, etc.).

The institution or company becomes an anti-fragile when:

- face the crisis and failure;
- keep up with technological developments;
- is able to quickly reconfigure and reposition;
- finds availability for new, innovative solutions to bring benefits and turn it into a performing entity.

The role of macroeconomic policies is to support competitiveness through flexible policy measures so as to enable institutions to cope with international competition in their business segments by reallocating resources to research and development.

In fact, the creative factor must be supported by empowered institutions and policy makers by supporting research and innovation, promoting sound policies to reduce the budget deficit, better spending orientation (improving infrastructure, investing in human capital) and fiscal sustainability.

The fragility of an institution is due to limited access to capital and the use of outdated technologies and equipment.

Resilience requires productivity growth in most economic sectors, risk-taking and investment in research, development and innovation.

Addressing issues such as lower purchasing power, declining unemployment, poor infrastructure, and inefficient managerial activity would help increase the level of competitiveness. Progress is given by vision, competence, responsibility, credibility, enthusiasm and creativity. These are the primary characteristics of the institution, absolutely necessary to achieve the established objectives. Driving skills and leadership need education, new experiences, interaction with people and an effective practice.

The main aspects of assessing the performance level of an institution and defining its overall efficiency and economic performance as a whole are: economic efficiency, planned and achieved performance, product competitiveness, or company excellence.

The competitive strategy of the institution needs to adapt rapidly to any change, so it requires close monitoring of society, collaboration with international institutions, maintaining offensive strategy and defense of results, adapting the strategy to the demands of the current age characterized by extreme dynamism.

Conclusions

The direction of an institution or company is given by its own strategy, while the chances of success are given by the competitive advantages.

In order to increase the company's competitiveness, in order to compete and increase profits, it is necessary for the manager to be well informed with world news in the field, to know the trends in the international market and the prospects for its evolution, including to have information on the programs global competitors.

With the progress, the management model can change and the current manager can no longer confine himself to the strict activity of his institution nor to the old knowledge of the activity in the branch of his country of activity.

For current managers, the number of possible action paths can be very high, and the degree of uncertainty can make it very difficult to predict the consequences of making a decision. Thus, the effects of errors in decision-making may be disastrous due to the complexity of the operations and the chain reactions that these errors can produce.

Analyzing the activity of the institutions, it can be observed that, in order to obtain the competitive advantage, but also to maintain it, they use at least three ways specific to the global strategy:

- costs minimizing;
- product / service policy;
- defining the purpose pursued by the institution.

In addition, the report on institutional capacity building measures, including legislative measures aimed at clarifying responsibilities and ensuring coordination of various governmental institutions for the implementation of the priority sector's investment program, is added.

In conclusion, adapting to change, innovation, affordable prices, faster and quality services are the key to success in any activity.

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