IT&C Organizations Particularities

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Abstract – In this paper we introduce the concept of organization and we refer to the particularities of IT&C ones. For a better understanding of the the complex concept represented by IT&C, it requires to understand the terms like: information, technology, communication and information technology.

The organization may consist of "two or more persons and their activities in order to achieve common objectives". An organization has managers who set goals and coordinate efforts to achieve those objectives.

Keywords – organization, IT&C industry, information, tehnology, communication, information technology

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1 INTRODUCTION

THE organization may consist of "two or more persons and their activities in order to achieve common objectives".[1]

Although presented in various forms, more or less formalized, organizations have several common features:

- they pursue some goals;

- they draw up a plan for achieving the proposed goals;

- they have certain financial, material and human resources;

- they are led by managers.

Any organization has certain objectives, which may vary from one period to another. Beyond the existence of certain objectives, the organization would have no reason to be created or to operate.

An organization must have a plan to achieve the objectives within the meaning of necessary activities to take place in certain time intervals by specialized persons using specific methods and techniques.

Achievement of objectives requires the allocation of certain human, material and financial resources.

An organization has managers who set goals and coordinate efforts to achieve them.

Organizations need to be created by many justified reasons, including:

- organizations represent different individuals that coordinate efforts to achieve common goals which alone would be very difficult to achieve;

- organizations store knowledge from the past that are very necessary for the next generations;

- organizations represent the headquarter where people can create a career for themselves.

2 IT&C CONCEPT DEFINITION

For a better understanding of the the complex concept represented by IT&C, it requires to understand the terms like: information, technology, communication and information technology.

The notion of information is designating the new elements in relation to current knowledge, contained in the structure of a message, in the meaning of a symbol or a group of symbols.

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The concept of technology has a double meaning. On the one hand, technology is the science of methods and tools used for processing materials and raw data. On the other hand, technology is the group of processes, methods, procedures and operations used for obtaining a particular industrial or commercial product.

Communication is the channel, the connection between two different points, and the technical system used to transport an instance of communication.

The concept of information technology designates the technology that contributes to production, handling, storage, transmission and dissemination of information.

Considering all the above definitions, we can say that IT&C is a generic term that describes a range of technologies used to collect, store, playback, process, analyze and transport the information.

An information society is the kind of society in which production and consumption of information is the most important activity, information is recognized as the main resource, information technology and communications are fundamental technologies and informational environment, together with the social and ecological one form an environment in which people live. In other words, the information society is the kind of society that relies on the Internet.[2] This type of society has become a reality in the last decade of the 20th century, with the revolution of Internet.

3 IT&C SECTOR FEATURES

IT&C sector is the most dynamic and competitive sector of the world economy. IT&C market still has a dynamic and high growth potential.

This market is dominated by specialized global players. According to the Fortune 500, the segment with the highest growth rate of the IT&C industry is that of telecommunications equipment, with 22.6%. This is followed by telecommunications segment itself, with a Compound Annual Growth Rate (CAGR) of 12.2% and the segment of PCs equipment, with an increase of 9.9%. France Telecom, Vodafone, Nokia, Motorola, Cisco Systems, Ericsson and Alcatel – Lucent are some big companies'

names that provide telecommunications equipment. Software giants Microsoft and Oracle are also on the list of major players. At the same time, on this list can be found equipment manufacturers such as IBM, Hewlett-Packard, Dell, Asustek Computer, Lenovo Group and Xerox. In the IT&C sector we also find big names in the sector for electronic component manufacturers such as Intel and Flextronics.

In the IT&C industry innovation is everywhere. This industry is a vital factor in achieving globalization by stimulating creativity and competitiveness in the economic environment.

Also, the IT&C sector can be regarded as having great potential for creating new businesses. The main feature of the information society is to use large-scale information processing tools and instruments of communication in all areas of economic and social life.

Meanwhile, the IT&C industry is one factor that affects the daily life of people. The new information technologies have a great impact on how we are provided with information, how we communicate and on education.

4 IT&C INDUSTRY COMPONENTS

4.1 Hardware

The term *hardware* designates all components of a computer and programs that provide instructions for using these components. Communication technology includes, in addition to hardware, equipment and devices such as mobile and fixed phones or televisions that are integrated into the electronic communications infrastructure.

4.2 Software

The term *software* is a generic term used to refer to an organized collection of data and instructions for a computer. There are two major categories of software: system software and application software.

The *system software* is responsible for controlling, integrating and managing hardware components. System software consists of an operating system and a few essential utilities for disk formatting, file management, text editing and authentication services.

On the other hand, the *software applications* are used to fulfill specific tasks. A software application can consist of a single program, a small collection of programs (also called software package) operating together to perform a task or a larger collection of independent, but linked in a common user interface, programs (also called software suite).

4.3 Electronic communications infrastructure

Electronic communications infrastructure is reflected by the existence of communication networks, which are the foundation of the information society. As the information society focuses on the user interests, in the context of a free society and a market economy only competition between providers can provide quality services at a discounted price. Thus arose the concept of multi-vendor services, which have their place in an interoperable environment using multi-technology networks. This shows the need for open interconnected networks and interoperable services.[3]

4.4 Web services

Web services are services provided on the Internet, forming a particular case of electronic communications services. Web services have become the most frequently accessed and used electronic services, especially in economic development, due to their multiple advantages. The most popular and used worldwide Web services are: e-Government, e-Business, e-Banking, e-Commerce, e-Tax, e-Health, e-Learning, e-Procurement.

5 LEADERSHIP IN IT&C INDUSTRY

Given how actual is the IT&C industry, most organizations in this area have had a good leadership and vision as the main strengths. Microsoft was built around the concept of "a computer for each one" with Bill Gates as the undisputed leader for nearly three decades. Apple's Steve Jobs has driven the company both at the moment of its creation and after 1996, following the acquisition of NeXT Company and the restoration of Steve Jobs as CEO of Apple. IBM is another example of a company where many leaders and visionaries have contributed to the steady development of the company and the radical changes in strategy (for example, when IBM decided to abandon the manufacture of personal computers and sold the division to the Chinese company Lenovo). Google and Facebook are other examples where leadership and vision of their founders, played a decisive role in developing the company.

The leaders and their ability to maintain a high level of innovation and growth within their organizations are two very important things. In information technology, the technology is dominated by constant change. As such, management plays a crucial role in organizational development. The key to succed is the continuous emergence of new leaders who are able to have the vision concerning the development of the organization.

For organizations in the IT&C industry, the management process must be continuous. Vision and communication with employees, implement new technologies and adapting the organization to these technologies are just some of the development requirements for an organization operating in the IT&C sector.

An organization in the IT&C sector without a leader resembles a rudderless ship. Worldwide, the management of an IT&C organization is more difficult than driving one located in another area of the economy, as this is done mainly by the founders of the organization. Coupled with the failure of the transition to a new generation of younger leaders, the natural process of "aging founders" can lead to big failures in leadership.

6 RECRUITMENT PROCESS IN IT&C ORGANIZATIONS[4]

Recruitment in IT&C field has certain peculiarities and specific challenges due to high competition in the market. The biggest challenges are the high level of effort to attract candidates and identifying a match between the organization and the candidate.

In a field as competitive as the IT&C one, persuasion skills are very important, but so are the needs, culture and the domain in which the organization activates.

The recruitment process is complex and varies depending on the recruited position, consisting of individual and group interviews and technical tests. It evaluates the job – specific knowledge, the matching with the team and the type of work in the organization.

The structure of the recruitment process varies depending on the recruited position as we show below:

- **Internship** – an interview with several stages (HR interview, test technical writing, technical interview, interview with the training program coordinator);

- **Specialist** – two interviews consisting in several stages:

    o a HR interview, written technical test and / or practical technical interview;

    o an individual interview with four members of the team in which the direct manager is attending most of the times. At this stage, each interviewer has a different area to evaluate - technic, culture fit, consulting skills, leadership skills (team management / self management);

- **Manager** – three interviews with several steps and check references:

    o a HR interview, knowledge checking interview with a person of the same position or a higher position;

    o an individual interview with four members of the team in which the direct manager is attending most of the times and / or role play with some scenarios;

    o 1 – 2 phone conversations with those who lead that department at global level.

Positions for which suitable candidates are found with difficulty:

- Positions for juniors – lack the necessary knowledge even at this level almost exclusively theoretical knowledge is evaluated;

- Positions for specialists – limited technical knowledge compared to the years of experience and salary level that does not correspond with

skills, many of the candidates overrating themselves;

- Managerial positions – these positions are the most difficult to fill, whether it's about project or department management. There are major culture differences between the style of the organization and the clients one on the one hand, and that of the candidates on the other hand. In general, organizations in the IT&C industry have a very flat hierarchical structure, and the preferred management style is servant leadership (a philosophy of management that generally involves putting the needs of others in the foreground and which helps people to develop and reach their full potential).

The three most popular types of qualities in any candidate for a job in IT&C are:

- Technical skills (theoretical knowledge, practical experience, passion for technology);

- Teamwork (sociable, responsible and respectful people);

- Client facing skills (experience or skills in working with clients, very good skills of communication and persuasion, problem solving skills, adaptability, flexibility).

Key – employees are motivated to remain part of the company on long-term by several methods – competitive salaries, professional development opportunities (visibility and challenging projects with high complexity, training, coaching) and promotions.

7 TYPES OF RESEARCH AND DEVELOPMENT IN IT&C ORGANIZATIONS[5]

The research and development process includes creative activities that are carried out systematically in order to increase the knowledge base, including sociological, cultural and social knowledge, and use this knowledge base to create new applications.[6]

Research and development management, as a process, can be defined as "the exercise of management functions (provision, organization, coordination, training, control - adjustment) for the specific activities of conceiving, designing and introducing new within the organization and transform it into useful information"[1].

Research and development management is operated by a number of specific notions, among them being:

- *scientific research* that consists of a systematic nature original investigation, conducted by specialist staff, based on a program, which aims to fund expansion of scientific knowledge and applied fundamental research, development and improvement of used methods;

- *technological development* creates the conditions necessary to ensure systematic application of scientific results and investments, resulted in assimilation into production of new products or new technologies;

- *innovation* is an achievement that shows novelty nationally, ensuring progress, economic and social benefits in a particular field;

- *invention* represents an intellectual creation that shows novelty internationally, resulted in an idea, a sketch or model for a product, process, new or improved system;

- *discovery* is the identification, establishment, formulation and explanation of laws and phenomena from the material and social world that exists objectively, but which were unknown until the time of their highlight;

- *creativity* lies in the ability to give rise to new realities, to establish new values on the ground in existing or novel areas.

According to specialists and researchers, about half of the companies in Europe don't develop innovative research and development activities. However, they become innovative mainly by using information received from suppliers and competitors. On the other hand, companies with research and development divisions should use information from customers, universities and other research institutions, or buy patents to implement these innovations.

Besides the innovation itself, there are at least three additional ways to develop new products and services:

a) realization of small improvements of existing products and services based on creative skills of professional staff within the company;

b) imitative reproduction, which does not require research and development for the adoption of certain innovations;

c) combining scientific and technological knowledge in a manner that implies a design engineering.

Innovative activities of companies without specialized research and development departments are very common and represents over 52.2% of the total number of companies.

The general ability of companies to finance and manage innovation depends on their size and capacity. Unlike small companies, large ones have increased ability to generate funds that can be invested in research and development, with a relatively high degree of risk. Large companies have more opportunities to engage in research than smaller ones, which require increasing investments. Small companies do not have adequate financial resources in most cases, and therefore, they need policy measures and micro – finance research and development.

Generally, companies with research and development departments have a greater capacity for innovation than those acquiring new technologies developed by others.

Organizations without an R&D (research and development) department can innovate more through activities that would stimulate creativity.

Product innovation means creating new products or significant improvement of services, while process

innovation means improvements in operations, logistics, information flow and equipment.

Product innovation requires more research, while process innovation frequently involves creative activities (not necessarily require resources for research and development), such as the purchase of modern instruments, hardware, software, patents and licenses or investments in professional training.

The decision to invest in research and development is limited by the company's ability to recover costs as soon as possible or to reduce production costs up to comfortable levels. Meanwhile, research and development strategies should pay more attention, in particular, to patent protection, trademark and trade secret, benefiting this way from a competitive advantage. Although patents are one of the best ways to generate value, organizations can't fully benefit from them. They can be rather used with other forms of intangible assets.

8 TRADITIONAL BUSINESS VS. DIGITAL BUSINESS

A comparison between a traditional and an electronic business is similar in scope to the difference that writers and readers see between a printed book and electronic one. Although a physical store and an online one are just as real, they address various demographic groups presenting their products by offering consumers different methods and different pricing plans, service and comfort.[7]

In the digital world, customer information is easy and inexpensive gathered, stored and analyzed. Managers can track the results of marketing and if the plans are implemented, by receiving real – time reports. However, the transformation of huge databases with significant knowledge to assist strategic decisions is a major challenge.[8]

If the weather is bad, parking is a challenge or the hour is late when inspiration comes to buy something, an online store that is open 24/7 has often prevailed in front of a physical store. Online shopping not only saves time and energy for customers, but it can save them from the payment of sale taxes, it may offer a wider range for

comparisons and also eliminates the feeling of being pressed or followed by sales agents. Many customers, however, prefer the ability to personally inspect goods, to ask for advice and assistance and to be able to take their purchases home immediately, rather than pay transportation costs and wait for their delivery.[7]

TABLE 1
TRADITIONAL BUSINESS VS. DIGITAL BUSINESS

Traditional business	Digital business
Sales through physical stores	Online sales
Physical products selling	Digital products selling
Domestic inventory / Production planning	Estimated collaborative online inventory
Printed catalogs	Intelligent online catalogs
Production based on demand estimation	Production based on orders
Billing on paper	Electronic billing
Printed offers	Electronic offers
Mass production of standard goods	Custom merchandise
Limited commercials and slow spreading	Virtually, affiliated marketing
Linear supply chain	Supply chains with different focal points

Traditional businesses make use of VAN (Value - Added Network) and EDI (Electronic Data Interchange). VAN is a service that acts as an intermediary between business partners which share the data through standards or business processes. EDI is a method of electronic communication, which provides standards for exchange of data electronically. By adhering to the same standard, two different companies or organizations can exchange electronic documents. In parallel, digital businesses make use of the Internet and Intranet.

Differentiation involves providing a product or service that is not available elsewhere. In addition, digital businesses provide customization. Customizing is the ability to tailor a product, service or business content to specific user preferences.[8]

8.1 Similarities between e-commerce and traditional commerce

Electronic commerce includes not only the commercial transaction itself, but all interactions and exchanges of information between sellers and buyers, that appear before and after the respective transaction (advertising, providing technical support for the purchase product, delivery, commercial services). So, electronic commerce meets the same components as the classic trade, but has some specific changes.

Any commercial transaction can be divided into three main stages:

- searching and advertising step;

- contracting stage;

- delivery and payment phase.

All trading activities are covered by the concept of e-commerce. So, e-commerce activities do not differ from those of traditional trade.

8.2 Differences between e-commerce and traditional commerce

Electronic commerce does not differ greatly from traditional commerce in terms of steps required for the transaction. But there are other aspects that separate the two forms of commerce.

The first aspect is the scope or coverage of the two forms of commerce. Electronic commerce is practiced especially by SMEs (Small and Medium – sized enterprises).

Development of electronic commerce has been possible because of another very important aspect of the traditional demarcation of electronic commerce, namely the time of trading. E-commerce reduces the time importance by shortening production / sale cycles, allowing firms to operate more efficiently and consumers to participate in transactions at any time.

Another relevant aspect in the demarcation of the e-commerce from the traditional one refers to categories of sold products. Obviously, the traditional commerce offers clients all the goods that are produced, because it plays the role of distributor and services provider for consumers. Instead, e-ecommerce firms' markets: computers (hardware, software, accessories), books, music, financial services, entertainment, electronic, household, gifts and flowers, travel, toys, shows and travel tickets and information, but not food, due to its perishability.

9 CASE STUDY: TRADITIONAL COMMERCE AND E-COMMERCE AT SC ALTEX ROMANIA SRL[9]

9.1 Traditional commerce at Altex

Altex is, by turnover, the first retailer specialized in electronics, IT and telecommunications, with a national network of 51 Altex stores and 15 Media Galaxy stores totaling approximately 80,000 square meters and over 1500 employees.

Altex portfolio includes a total of over 8,000 products under the umbrella of major international brands.

The company's net turnover in 2007 was over 317 million RON.

In Altex company there is a specialized marketing department located in Bucharest that organizes and oversees all marketing activities. Altex company has two administrative offices in Bucharest and Piatra Neamt. These offices make decisions for all sites, eventually having discretion over the development of a promotional campaign, giving discounts or promotional leaflets content.

The transport of sold products from the producer to Altex company own deposits is achieved both by the producing company, as well as by Altex with the potential means of transportation available. From Altex company warehouses to the the workstations in the country the product transportation is done only by the company resources.

Storage is done in the network of available Altex deposits within the main cities, representing regional centers from where stores nearby are stocked. Taking and fulfilling orders from workstations is done at the center or at the closest warehouses to them.

9.2 E-Commerce at Altex

Altex has an online store, www.altex.ro. Compared to other stores with sellers and physically present products in showcases, www.altex.ro has more varied and better structured offer, priced at least as good as in other Altex, or even better for special tenders launched only through Internet.

As eMag, another big online retailer on Romanian market, Altex go on a personalized offer for the site. It has a number of special offers, lower prices and free delivery by courier. Altex send products to the client home for big orders, or in other cases the product can be raised in stores by the client himself. Prices are at least 3% lower in the online shop and 20 to 30 products have lower prices by up to 15%.

In 2013, Altex sold online up to 25 million dollars, a figure that placed at that time the company on the first on the e-commerce market.

Altex Romania has not an end in itself to develop an online sales channel. The websites they develop are complementary sales channels, for community clients who prefer online shopping, which is the main trump convenience. Moreover, for IT, Internet and games passionate, buying online is a necessary thing, because it is part of their way of life. The share in total sales of electronic commerce depends only on clients.

Altex has developed an online platform as a complementary business, on the assumption that only this formula is a winning one.

It is a fact that the number of online stores customers and e-commerce companies is increasing.

CONCLUSION[10]

Technology will become a central element in the growth rate of economies and will play a central role in companies and various institutions activity. That is why they must prepare for a near future in which almost all objects will have smart features or will be connected to the Internet.

Technology is a catalyst for economic growth that improves collaboration, increase productivity and inspire new ideas that fuel innovation and competitiveness. The technology

allows and improves transparency and efficiency in public and private sectors.

The solutions adopted for mobile devices (smartphone, tablet) and the use of cloud platforms – that were previously considered optional by companies when launching products or services – have now become mandatory. Now, using a cloud platform should be the first choice or at least be available. Access to a product or service must be designed primarily for mobile or at least should be optional. Companies need intelligent solutions for data analysis, to be able to deliver predictions based on social data including information from social media.

In "today's digital era" differences from the past between IT companies and other industries disappear. Now every organization has a budget for IT, each company is a technology company, each department is a hi-tech start-up, and each manager is a technology manager. By 2017 a quarter of companies will no longer be competitive because they will not be able to manage digital transformation processes. The change will be a brutal one.

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