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New challenges in post-crisis management: Competitive or collaborative

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Many scientists tried to describe the characteristics of a network society, seen as the ultimate form of the knowledge-based society. Very few tried to explain which would be the leverages to determine the shift, and detail them on a multidimensional basis. This paper, as a step in a larger research, tries to emphasize the most common conditions which lead to the triggering of the shift above mentioned, some of the ways the companies' management can follow to reach the desired competitive position and some threats and opportunities which occur during the translations from the classical form of organization to the networked economy.

Key words: Network poles, concurrent innovation, personnel leasing, virtual enterprise, unconventional trade systems.

INTRODUCTION

The last three years will probably remain in history as the years of a hard economic crisis, but also as the threshold period when the relations between the different actors of the economic world changed dramatically and the way of doing and selling goods and services was reinvented. All the plans of economic reality need to be dealt with in a total new manner, but, first of all, it consider how it was proven once more that the actual managerial approach of "one against all" is obsolete and needs to be reconsidered. More than other concepts which emerged as a result of the social and economic research, the network of enterprises, linked enterprise and agent-based organization showed their validity both in the area of Small and medium enterprises (SME) and in multinational firms, in developing countries and in developed regions of Europe, Asia and other continents. The transformation and aggregation of the economic environment in interconnected networks is not a new phenomenon, but the speed these things happen after the second quarter of 2007 and the characteristics of this shift show us that it is the right reaction to the turbulent environment witness these years.

As mentioned in the paper, the authors consider that,

speaking about the origin of the crisis, it is a set of well coordinated moves, made by important players, in a zero-sum, multiplayer game. This is why the efforts to survive of many companies can be seen as an alternate move in the same game, having the purpose to maximize their own payoff without knowing in advance how the opponent will move. Like many other players, a SME re-realizes that its only chance is to be temporarily integrated in an alliance, with other players, in order to reach a "critical mass" which can determine the evolution of the game in a desired direction.

LITERATURE REVIEW

The theories concerning a new economic and social environment structured in a network manner have had important adepts even at their first appearances and, definitely, that was long before 2008. It will not consider the incipient visions and the general, philosophic ones, but it will focus on the modern approaches based on the new technological concepts connected with the Knowledge-based Economy.

The notion of "network" is used to characterize any set of recurring ties (for example resource, friendship, information ties) among a set of nodes (for example individuals, groups, organizations, information systems and

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so on) (Fombrun, 1982). Recurring buyer–seller relations among a set of organizations in a market therefore, qualify as a network phenomenon as to do with the interactions among the members of a firm. The transition from the industry-based economy to the new, network-based economy was sensed long before. In '90s, specialists predicted that the competition will be among value chains and production networks rather than enterprise (Quinn, 1992; Agility Forum, 1996) and agreed that networking is a new phenomenon.

In "Digital Economy" (1996) Tapscott shows that, speaking about the infrastructure of the new economy, one could compare information networks to highways and the power grid of the industrial economy and emphasizes that the state-of-the-art electronic infrastructure is the key for success for every country. The information age extends the concepts linked with the networked economy and creates a network society- a specific social structure, which characterizes the new age in the same way the industrial society was characterized by the social structure of both capitalism and statism during the last century (Castell, 2000). It permeates most societies in the world, in various cultural and institutional manifestations. The network structure came out as a solution for the increasing complexity of the economy and it is demanded by the dynamics of the markets and by the continuous and fast changes in customers' preferences. As shown further on in this paper, the new concept starts and develops different new approaches in different areas of the company management; for example, in human resource management where it speak about personnel leasing, or in accounting and financing where the modern barter gets a new shine. „The next layers of value creation- whether in technology, marketing, biomedicine or manufacturing- are becoming so complex that no single firm or department are going to be able to master them alone." (Thomas Friedman, 2005).

Tapscott and Williams (2006) described the network economy as follows: "A new kind of collaborative enterprise- an ecosystem of peers that is constantly shaping and reshaping clusters of knowledge and capability to compete on a global basis." The network architecture is even considered a fundamental feature of the new economy. Castell (2000) shows that this economy has three important characteristics: it is informational (it generates knowledge), it is global (its core, strategic activities, have the capacity to work as a unit on a planetary scale in real time or chosen time) and it is networked.

Ken Thompson (2009) emphasizes the shift from the managerial approach of individual enterprise (firm-centric) through supply chain management (supply-chain centric) to the actual network approach (virtual enterprise-centric). He shows that the competition evolved from competition between companies to competition between supply chains. The next step is predicted by Professor Marco Iansiti (Harvard Business School) as follows: „future business competition will not

be between companies or even supply chains but between networks". Ken Thompson even presents a roadmap for incubating a virtual enterprise network, speaking about 7 steps to follow: selection, incubation, mobilization, market testing, viability, differentiation and sustainability.

Another term based on the networked enterprises philosophy is Business Collaboration Network (BCN). A BCN is composed of a set of customers, partners and suppliers involved in a certain business, who communicate and collaborate to drive positive business results for all involved. It consists of all the relationships in the company's value chain, which can be extended with any other organization from the environment who wants to share resources with anyone within the ecosystem, irrespective of external considerations (such as IT issues, boundaries, chains of command) in the pursuit of a common business goal. It consider this vision on BCN a hybrid one, a sort of extended democratized supply chain where the management challenges are not taken into account in a serious manner. Not many of the scientists who developed researches on both social and economic aspects of the networked economy gave significant importance of the major change brought by this new concept in the field of human resources management. Speaking about employment in the new society, Castells (1996) showed: "The promises of productivity, flexibility and creativity offered by the new techno-economic system should have generated a climate of reasonable optimism in economies throughout the world. And yet, the dominant feeling is one of malaise, with the important exception of a number of tigers, elephants and dragons, in the rapidly industrializing Asian economies.

An important reason for such defensive reaction to structural transformation is the deep-seated myth that new technologies, overall, destroy more jobs than they create, thus plunging economies and societies in an era of mass unemployment that undermines the financial basis of the welfare state." In the last years much attention has been devoted to R&D alliances and inter-firm networks focused on innovation. The connection between the innovative capacity and the network architecture is clearly emphasized in some very important works; such as "An entrepreneur cannot innovate alone; networks of enterprises are required" (DeBresson, 1996) or, the more classical „networks of power" (Hughes, 1983). DeBresson underlines that networking in innovation is not a new phenomenon, but it has been a fact for a long time. What has changed, he said, was the conceptual capacity to recognize what is going on, the understanding lagging, because of conceptual myopia, behind real experience. He concludes that "innovation is the emerging property of a network of firms".

METHODOLOGY

The scientific approach of the shift from classic economy to the networked one, specific for the knowledge based economy, has some

particularities which demand research methods emphasizing the qualitative aspects rather than quantitative ones. One of the features of this article refers the differences between the visions of different specialists concerning the meaning of the networked economy, which are underlined in the Literature Review paragraph. In this case, the authors assumed a specific image of the future by empirical observations, interpolating different opinions and adapting them to the reality of Europe as it is in 2010.

Another particularity was that in most of the works on this theme there was no clearly described target of the transition by different dimensions, so next step was the analysis of the concept and finding of the dimensions of the phenomenon. This was fulfilled by comparative observations of different cases and synthetization of the conclusions drawn in each of these. The possible causes and effects, as they come out after a factorial analysis, were emphasized by generalization of the cases studied on the conditions predicted for Europe and Romania for 2010 to 2015.

Some of the dimension discovered and detailed in the paper were illustrated by quantitative evolutions and the trends were interpreted due to the actual and predicted conditions, as, for example, the barter exchange as one of the old methods which comes back in the networked economy. As the trends were identified, the current conditions were checked for Romania, starting with the legal frame and ending with the economy status, and this lead to conclusions concerning the possibilities for implementing the main features of the networked economy in this country.

MANAGEMENT: CENTRIC APPROACH VS. NETWORKED APPROACH

The transition between the managerial philosophy of the late '80s and the networking approach has started long before the financial and economic crisis it have been witnesses in the last three years. Networking, as shown in many of the works in the bibliography, is a phenomenon triggered by the evolution of the ICT and the deterioration of the economic situation of the recent years only accelerated different reactions who lead to it. From the point of view, even the difficult economic periods are catalysts of different actions (as, for example, founding of barter organizations, as shown in one of the next paragraphs, or passing different laws to reinforce personnel leasing) the transition process started in a certain level of development of the information and communication technology.

As a matter of fact, the globalization itself is one of the engines of the transition from self-centric to collaborative management. This is because the main characteristics of the global world, the connectivity and the flexibility of informational production is based on a new form of economic organization, the network enterprise, a concept different of network of enterprises", meaning a network made from either companies or segments of companies, and/or from internal segmentation of firms. Large corporations are internally de-centralized as networks and SMEs are connected in networks. These networks are dynamic and project oriented, which they connect among themselves on specific business projects, and switch to another network as soon as the project is finished. The model of the transition mentioned is, in the opinion, a multidimensional one and targets the positioning of the

organization in an environment and inside a set of relations, more than a redesign of the business or the way it is lead. In order to settle a correct view of the relations between the recent economic recession and the process of transition from centric management to the networked one, it is important to emphasize two opinions which it adhere to, seen as two main hypothesis of the approach.

- i. The assembly of phenomena named "economic crisis" is, in fact, at least from the point of view of the causes which generated it, a succession of moves made in a correlated manner by a set of economic entities (for example, trade or financial alliances, supply chains, multinational companies), having a common target, in the frame given by a zero-sum, wide scale, game.
- ii. In order to maximize the gain, a player must act and play in correlation with other players, achieving different alliances, on different time horizons and different objectives.

Thus, it witness a global scale game between large and powerful teams, instead one between skilled and well trained individuals. For being „in business" one need first to be in a team, to be able to interact and, especially, to build in common with other team mates, even that, until some time ago, the actual mates were competitors. The transition is, as it has been already stated, a multidimensional process. The study says that, it means there are five concurrent plans of evolution which must be taken into account in order to access the networked economy and the networked society. They can be assimilated to a set of dimensions, coordinate axes, determinant for the overall evolution of a society or organization. It speaks about:

- i. Innovative dimension
- ii. Informational dimension
- iii. Decisional dimension
- iv. Trading dimension
- v. Social dimension

The approach has a multidisciplinary character, situating the theme at the border between economic and social fields of knowledge, between economy (focused on the study of the market relations) and management, concerning the internal relations which occur inside an organization. All the dimensions are of equal importance, and in Romania, achieving a correct level for each of them is not the same for first three and the last two. Even that the legal frame is evolved enough, due to the necessities of aligning the national legislation to the European one, only the Trading dimension has a practical

The innovative dimension

The innovative networks are now central to the understanding all contemporary economic processes –not just

innovation. In the industrialized world, recently it was learned from the first representative surveys of innovative activity, that one out of two firms (50%) introduces new or improved products or processes every three years (DeBresson et al., 1997). Speaking about the innovative dimension, it was shown that the new perspective is, in the opinion, the concurrent innovation. This term was used to nominate a research and development process, started independently in several network locations, focused on the same target characteristics, which has, as a main objective obtaining of superior products, services or methods/techniques, by organizations (nodes) built for R&D. Unfortunately, in Romania the research capacities and abilities were not developed in the last 20 years, this is why this type of activities cannot be done, in a competitive matter, excepting a reduced number of domains.

The informational dimension

This coordinate of the transition is about the information and knowledge sharing and about the IT development steps which supports the shift from the classical managerial approach and the networked one. Fleisch and Österle (2000) propose five steps (phases) of IT evolution leading to the networking capability, a sort of a capability maturity model applied in IT development:

- i. First phase: Automation of individual business functions, normally by transferring manual informational procedures into insular computer applications. This level is specific for the '70s and had, as main objective, increasing of the performance for the individuals assigned to fulfill tasks in different areas of enterprise. Degree of integration-0.
- ii. Second phase: Automation of whole functional areas (for example, accounting), by connecting the different application existent at the level of different activities, usually by means of integrating them as functions of larger applications. The goal was the increasing of the overall performance of the departments and 1980, when this trend occurred, marked the development of planning capability at the department level. The integration, within each of the departments, could be situated, on a scale between 1 and 10, at the level 2. In Romania, the starting point of this level was delayed with at least 10 years. The first applications integrated at the function level were available in 1992 to 1993.
- iii. Third phase: Enterprise resource planning applications, integrating all the functions of the enterprise. The philosophy of unique database with discriminated access rights is at the basis of this new approach. Even that the multinational companies present on Romanian market were implementing this new technology in 1990's, the first local suppliers (Romanian companies) of fully adapted ERP's made their first successful implementations beginning with 1995.
- iv. Fourth phase: cross-organizational integration, by

means of electronic data integration. It meant that the management information systems of the firms extended over the company's frontier, integrating, by an open architecture, both upstream and downstream, with clients and suppliers, on an 1:1 basis. It appeared in the US in 1990's, but in Romania only became operational at the level of 2002-2003, and not on a very large scale.

v. Fifth phase: IT systems for Supply Chain Management and Electronic Commerce satisfy the customer's requirements processes of a company's customers are forming the starting point for the design of its own services and processes. It is achieved by inter-organizational integration of information and processes, and thus it represents a step towards the vision of the boundary-less enterprise. The relations become of the "many" type, specific to the networks.

The future (next phase, the sixth) is already a result of the raising of the networked architectures. If the first five phases represent the way the evolution of the information systems of the firms followed the evolution of IT, the next generation of computer systems will have themselves a networked philosophy. It speaks about a concept appeared two-three years ago, cloud computing, which represents a correlated manner in which different computer systems, belonging to different network nodes, resolve tasks imposed by different network members, sharing capacity, applications and data with respect to the intellectual property.

Social dimension

All the arguments lead us to the conclusion that, in the near future, networking is competitiveness. But they also show that its social effects are potentially disruptive and its impact on productivity does present some negative aspects, unless it is combined with new labour policies and training practices, adapted to the transformation of work in the information economy. Castells (1996) shows that „it witnessing a fundamental new trend in labour relations in the information age: the individualization of labour conditions and labour contracts, reversing the trend towards the socialization of labour that characterized the industrial society.”

The flexibility, one of the biggest advantages of the networked economy, has also a price to be paid in the social dimension, where it determines a low labour force stability and may determine the employee commitment. The old system, characterised, in its good times, by the large-scale, salaried system of full-time, long-term employment is going to be replaced totally by different one. In the opinion, it will soon be witness the appearance of specific network nodes, playing important roles in the network and having the characteristic of network poles, replacing the old recruitment companies, which will combine the versatility in finding and recruiting labour force of different specialities with the capability of assuring a

quasi-permanent employment to this force, by distributing them for different periods of time to different job, in different network nodes. They will also assure an important part of the social protection, which the state systems prove they are not capable to offer any more. The personnel leasing is already a reality and it is, in the opinion, the first step to the forming of the nodes of the type mentioned above. In Romania the legislation has started to adapt to this demands, but it still a long way to go.

The personnel leasing is an activity by which a human resource company provides to a firm from another domain that qualified personnel, the second firm needs for a limited period of time (the actual Labour Code of Romania, where this type of employment was introduced since 2004 limits this period at 18 months, plus two more extensions). The working personnel is not employed by the beneficiary firm, but by the leasing company. In the future, the process will probably evolve, the employment being permanent by the leasing company which will probably control the labour force from an area of the network, transforming in a network pole.

Decisional dimension

The decisional dimension is not only about the way multiple governors can technically adopt a common decision. The most important aspect is that in the old organizational approach there was a gap between the manufacturing system and the management system. Now, management is distributed at all the nodes of the network and its main techniques and methods must be transformed into collaborative ones. Even the strategy of each unit must be built in a convergent mode, building the strategy of the network.

It comes again into discussion the role of the network poles. The role they will have in the network management will be of a strategic nature, to assure the coherence of the strategy of the other nodes and to permanently communicate with them in order to adapt the strategy to the actual conditions, as a condition of flexibility.

Trading dimension

The management of the modern trade systems has some particularities which could not be covered by the classic approaches and models of distribution channels or exchange systems occurred in the second half of the 20th century. The new challenges which determined both practitioners and theoreticians to look from a different angle at the way the goods and services are exchanged between entities or individuals were of both technical nature (as, for example, the new opportunities provided of IT systems and especially internet based techniques) and of the nature of socio/economic environment evolution for example, the need for security and lack of coherent solutions for avoiding the effects of the World

economic crisis. Methods used for trade in the old times, as reciprocity, natural economy or barter can become strong alternative trade methods if supported by the power of the IT and managed by modern techniques.

Even the alternative trade systems have been used for a long time; there were little or no attention played to them in the last few years by the modern business world. Especially during flourishing times, when the economies of states did well, the classic circuit „money-products-money” was considered to be ideal and, in some ways, it really. But there are situations when the well known trade system mentioned above is not satisfactory in order to keep a high rhythm of the production cycle, and one of these situations occurs when the financial system does not work properly and does not supply the economy with real money. This is why, the years 2008 and 2009 came with a huge demand of management techniques able to avoid the negative influences of the lack of financial resource on the state economies and on the development of different companies. At the level of financial or sales and purchase management there were enabled new types of relations, between company and competitors, banks, exchange organizations and other market actors. Even in normal conditions, alternative trade methods can bring competitive advantage, especially by the efficient use of financial resource and market extension. Gaining new clients by offering them more competitive purchasing conditions or planning the supply chain in a more effective manner are other advantages that barter and other products and services exchange methods can offer.

Supply chain management must take into account both retail and corporate barter. In the case of the Retail barter, small business owners conduct barter transactions through membership in commercial trade exchanges. The first step in conducting retail barter transactions is to join barter exchange- organizations which are usually made up of between 200 and 10,000 members that conduct indirect barter transactions with each other by way of a credit/debit system. Clients of the exchange are simply agreeing to accept an additional form of currency for payment. Members are free to purchase any product or service within the network—they do not have to accept each other's merchandise directly. Most members do business within a short range (usually under 50 km from their residence) and their business revolves around both products and services of various types. It sometimes happens that the organizations involved in this exchange system have extremely broad activity ranges, varying from media organizations, construction companies, dentists, restaurants, attorneys, printers, hotels, ad agencies, graphic designers and plastic surgeons to small consumer-oriented businesses like dry cleaners, flower shops and so on. For example, at the end of 2008, there were 400 commercial barter exchanges in the U.S. and another 200 worldwide (Bruce Kamm and Virtual Barter, 2009). The number of members per exchange ranges from about 200 to about 10,000, with most under 1,000. In total, the business-to-business network

of barter exchanges represents over 450,000 companies. On the other hand, corporate trade means that larger companies trade goods and services through accounts receivable (AR) trading, relying on a corporate barter company to purchase inventory offered for sale with trade credits and subsequently to fulfill the credits by providing goods and services requested by the seller. Like with retail barter, these types of transactions also take place through a third party barter company that acts as a broker. Generally, a corporate barter process can be described as follows: a client – a company which is member of the barter association- identifies an asset that has lost value or is in excess. A barter firm takes a position in the client's excess inventory or underutilized capacity and provides them with trade credits up to the full original value. The trade credits can be used by the company to purchase a wide range of products and services for which a company normally must pay cash, including advertising, printing, travel and entertainment, construction materials, etc. By using the trade credits provided by a barter firm, a much higher value is restored to the client's assets than would typically be the case using traditional liquidation methods. In addition, the assets acquired by the barter firm are sold under terms and guidelines specified by the client.

The corporate barter company controls all the aspects of the barter transaction, buying and selling for its own account and becoming the purchasing agent for clients with regard to the use of their trade dollars. Under the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA), trade exchanges are classified as third-party record-keepers with the same fiduciary responsibilities as bankers and securities brokers. Even corporate barter was first used in the late 1960's, there are few differences between the original form and the way it is used today. At that time, corporate barter was primarily a financial tool – a way for companies with excess or obsolete inventories to recover costs and even full wholesale value for their inventories. Today, corporate barter both remains a profitable alternative to markdowns or liquidation and provides a valuable way to expand a company's advertising and marketing plan using the leverage of a barter transaction. Corporate barter also facilitates foreign trade with countries that have goods and services to exchange but no hard currency. Examples of corporate trade are numerous: unfilled trucking on return trips, idle plant equipment, excess maintenance inventory, years on a lease when a company moves, and even stock in a firm. Privately held companies sell restricted stock for trade dollars to offset marketing costs that will help build name recognition and market share, to build trade dollar reserves or to purchase hard assets such as real estate.

Bruce Kamm estimates that seven to ten corporate barter companies do about 95% of the corporate trade business. Barter is a business solution. No two trade transactions are ever alike. Contrary to some expectations, modern barter exchange appeared in most

conservative countries, as, for example, in Switzerland. The most commonly acknowledged first business barter exchange is the WIR system. WIR—which means in German—was founded in 1934 by businessmen Werner Zimmermann and Paul Enz to help cope with currency shortages after the stock market crash of 1929. Within one year of its founding, the WIR system had 3,000 participants, and today the organization is still growing with more than 62,000 members doing over \$2 billion a year in B2B barter transactions. The evolution of barter exchange volume shows that even it is not a new technique, in the last years it witness an important growth of this type of unconventional trade technique. Table 1 shows the evolution of this trade system in Switzerland, country which is famous for its banking system. As a matter of fact, WIR is organized as a bank, itself.

In Switzerland, it as shown above, the birthplace of modern barter exchange, the turnover, grew, from 1948 to 1999, 1666 times, while the number of participants grew, in the same interval, only 101 times, and the credit increased more than 2600 times. As shown in Table 2, United States recorded a continuous increase of corporate barter transactions. If, in Switzerland, the ratio between the turnover in 1974 and that one in 1995 is about 8.5%, the volume of barter exchange in 1974 represents, in US, 11.8% of that recorded in 1995. The modern barter exchange eliminates the need to directly conduct a barter transaction with another party; it eliminates the necessity of a double coincidence of needs. Additional benefits are that valuing products and services becomes much easier due to the expanded market; transactions can be easily tracked and reported; trade revenue can be banked and stored; and the speed of transactions has increased. Romania has moved in the direction of building a legal frame for the barter exchanges, creating an institutional facility for that. It speaks about the Compensation Service, established in 1999 by a Government decision (685/1999) inside the Ministry of Economy.

The way the service works is the following (it is an electronically provided service): First, the companies send all the bills representing payables and receivables and the compensation orders; the department responsible with the organization of the compensation meetings prepare the records of the meetings and transmits the decisions for releasing the compensation orders; the department responsible with the settlements, together with the compensation inspectors who are empowered to represent the traders on the compensation flows release the compensation orders. The registration and the main dialogue are done by means of online access, using two sites who grant access to a compensation portal (<http://gama.imi.ro> or www.minind.ro). Due to the official site of the compensation service, www.gama.imi.ro, the evolution of the exchange volume done by this mean, is shown in Table 3. It is obvious that, excepting 2005 to 2006, when the volume decreased

Table 1. Barter turnover, number of firms, and credit-on-turnover in WIR-Bank, 1948-99 (in Millions of Current Swiss Franks).

Year	Turnover	Participants	Credit	Year	Turnover	Participants	Credit
1948	1.1	814	0.3	1974	200	20902	73
1949	2	1070	0.5	1975	204.7	21869	78.9
1950	3.8	1574	1	1976	223	23172	82.2
1951	6.8	2089	1.3	1977	233.2	23929	84.5
1952	12.6	2941	3.1	1978	240.4	24479	86.5
1953	20.2	4540	4.6	1979	247.5	24191	89
1954	30	5957	7.2	1980	255.3	24227	94.1
1955	39.1	7231	10.5	1981	275.2	24501	103.3
1956	47.2	9060	11.8	1982	330	26040	127.7
1957	48.4	10286	12.1	1983	432.3	28418	159.6
1958	53	11606	13.1	1984	523	31330	200.9
1959	60	12192	14	1985	673	34353	242.7
1960	67.4	12567	15.4	1986	826	38012	292.5
1961	69.3	12445	16.7	1987	1065	42227	359.3
1962	76.7	12720	19.3	1988	1329	46895	437.3
1963	83.6	12670	21.6	1989	1553	51349	525.7
1964	101.6	13680	24.3	1990	1788	56309	612.5
1965	111.9	14367	25.5	1991	2047	62958	731.7
1966	121.5	15076	27	1992	2404	70465	829.8
1967	135.2	15964	37.3	1993	2521	76618	892.3
1968	152.2	17069	44.9	1994	2509	79766	904.1
1969	170.1	17906	50.3	1995	2355	81516	890.6
1970	183.3	18239	57.2	1996	2262	82558	869.8
1971	195.1	19038	66.2	1997	2085	82793	843.6
1972	209.3	19523	69.3	1998	1976	82751	807.7
1973	196.7	20402	69.9	1999	1833	82487	788.7

Sources: Data to 1983 are from Meierhofer (1984). Subsequent years are from Annual Reports and WIR, public relations department (2000).

Table 2. Volume of Corporate Barter, North American companies, 1974-1995 (in Millions of current US Dollars)

Year	Volume	Year	Volume
1974	850	1986	3200
1976	980	1987	3470
1977	1130	1988	3750
1978	1300	1989	4050
1979	1500	1990	4550
1980	1720	1991	5100
1981	1980	1992	5570
1982	2200	1993	6050
1983	2440	1994	6560
1984	2680	1995	7216
1985	2900		

Source: Barter by North American Companies, (<http://ww2.dgsys.com/~irta/statisti.html>)

dramatically, in 2007 it grew double than 2004. The estimations for 2008 and 2009 are about 50 million, respectively 67 million.

Conclusions

Starting from the ideas stated in this work, the authors

Table 3. Evolution of the barter exchange volume between 2000 and 2007 for the main actors on the barter market in Romania.

Organization	2000	2001	2002	2003	2004	2005	2006	2007	Total/ organization
Personnel Training Center Industry	0	0	6,372,531,779	18,060,095,475	17,942,314,891	15,203,244,999	13,238,634,485	39,761,501,669	110,578,323,298
Institute of Management Information S.C.	1,911,420,965	9,218,413,766	9,409,897,417	0	0	0	0	0	20,568,924,500
HIDROCONSTRUCTIA S.A.	118,118,341	910,398,176	1,466,133,257	1,491,609,256	2,241,342,531	403,055,480	0	0	6,630,657,042
National Company of Lignite Oltenia S.A.	80,764,340	1,166,059,789	1,533,470,352	1,472,336,174	481,971,193	4,038,835	0	0	4,738,640,683
National Company of Lignite Oltenia S.A.	0	0	0	0	820,925,158	604,828,553	607,007,475	1,345,230,455	3,377,991,641
SIDEX	130,738,810	627,509,222	338,323,519	122,344,087	150,054,234	140,863,746	147,150,789	428,581,640	2,085,566,048
Bursa Transilvana	5,632,868	60,747,563	104,801,553	141,449,460	190,408,500	151,623,211	114,167,084	711,152,253	1,479,982,492
S.C. CISCO SRL	16,187,084	292,057,050	161,017,996	143,435,199	150,841,957	110,293,806	97,280,967	172,364,902	1,143,478,960
S.C. MINERVA COMPANY S.A.	610,635	0	21,290,422	107,700,789	133,288,063	145,019,818	173,005,667	249,883,163	830,798,557
S.C. CASA Information Services Company CTCE SRGALAT	0	0	0	0	7,899,781	484,356,275	25,236,587	166,796,919	684,289,563
EDSAN IMPEX SRL	13,208,677	11,640,020	26,163,202	69,990,068	100,277,205	76,309,258	83,123,688	285,996,512	666,708,630
Software Information Service The CompanyS.	0	0	267,088,904	186,154,308	128,403,988	2,028,134	0	0	583,675,334
Brasov Business Centre SA	0	0	0	0	46,097,513	199,728,516	104,852,621	222,897,969	573,576,618
S.C. OLTCHIM S.A.	11,174,340	16,408,893	52,999,057	60,240,354	61,090,901	37,150,709	31,924,213	271,816,564	542,805,031
Bursa Moldovei	62,374,492	16,633,003	15,990,400	38,136,641	50,310,759	46,264,513	42,878,065	149,596,677	422,184,550
S.C. C.R.C. Consult S.R.L. Sibiu	0	0	4,070,143	7,808,287	97,201,925	44,722,440	67,389,230	193,159,822	414,351,846
S.C. Targu Mures ROMAR HCOM	0	0	0	0	64,516,517	68,797,919	79,649,857	113,700,542	326,664,835
Bursa de marfuri Timisoara	0	0	0	12,664,910	24,624,103	4,033,603	3,435,868	141,662,776	186,421,260
Casa Romana de Compensatie	321,191	1,207,243	254,155	3,279,830	16,366,605	27,216,996	28,664,999	98,860,687	176,171,707
Bursa de Marfuri Generale	11,433,587	18,073,455	43,756,613	63,873,533	11,700,549	0	0	0	148,837,736
Bursa Lemnului	26,154,293	33,919,864	23,393,811	32,619,704	12,988,169	15,270,509	0	0	144,346,351
Societatea de Servicii Informatice TOTALDATA	8,304,036	30,058,200	23,978,063	12,702,412	1,689,375	8,699,488	4,018,884	25,193,797	114,644,255
SC SICO SA CRAIOVA	1,590,936	13,707,586	25,545,996	28,484,823	41,274,184	2,135,204	0	0	112,738,730
SC LOTUS B&B SRL	0	0	0	45,016,307	25,463,407	0	0	0	70,479,714
	2,689,561	3,602,827	6,927,468	3,625,367	377,714	45,575	0	0	17,268,513

Table 3. Contd.

PRO COMPENS	0	0	11,870,695	4,101,264	0	0	0	0	15,971,959
INFO Information Services Company-CARAS	1,085,988	290,878	1,287,814	4,960,966	0	0	0	0	7,625,646
Company Information Miruvi	0	599,496	628,813	113,815	0	0	0	0	1,342,124
Information Services Company	564,437	0	0	0	0	0	0	0	564,437
SC C.D. INTERNATIONAL SRL	396,618	0	0	0	0	0	0	0	396,618
Information Services Company C E C T	282,528	0	0	0	0	0	0	0	282,528
S. C. Soft Powers	0	0	0	0	95,399	87,458	0	0	182,857
S.C. SunSet Trade	0	0	0	0	0	0	0	0	0
Total (RON)	2,403,053,727	12,421,327,031	19,911,421,429	22,112,743,029	22,801,524,621	17,779,815,045	14,848,420,479	44,338,396,350	156,645,894,063

Source: <http://gama.imi.ro>. Observations: 1 Euro=4.125 RON (second half of 2004) and 3.6 RON (end of 2007).

consider than the trend of the world economy is to aggregate in networks and sub-networks which get more and more of the attributes of the previous, geographic based, economies. The growing complexity and economic power of these structures forces the non-networked competitors to adhere to one network or another or to form a new network by their own. These facts change the management style of any organization and orients it from down inside of the company to outside, giving it a strong collaborative character. The phenomenon has started for some years, but it was accelerated by the crisis. The transformation of classical, geographic based economies into networked economy needs changes on at least five different plans (dimensions): innovative dimension, informational dimension, decisional dimension, trading dimension and, last but not the least, social dimension. Analysing the situation of Romana, the study can say there is a lot to be done in all the five plans, especially on the innovative one. Still, the legal and the institutional frame are constituted and the country is on a good trend.

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