Alliance Networks:
the Case of Multinational Corporations

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The article deals with the problems of cooperation in network organizations. The structure of the text is divided into a couple of parts. Firstly, the increasing importance of alliance networks is described. Secondly, the concept of alliance networks as well as the essence of multinational corporations are presented. Beside theoretical deliberations, two practical cases are presented in the text too. First case relates to the Toyota keietsu and the second one describes the network organization of the largest steel manufacturer in the world, i.e. ArcelorMittal Group. Last part of the text is the comparative analysis of the multinational corporations network vs. networks of small and medium size companies. The similarities as well as differences between both forms were presented. The article is based on the latest world literature devoted to the cooperative strategies as well as the practical business experience of the author from the work in Arcelor Mittal Poland and polish machine industry.

Key words: cooperation, alliance network, multinational corporation, keietsu group, steel industry

1 Introduction

Network approach, as a new form of cooperation among business entities was established in the late 70s. It was mainly the result of technological changes on the market, and growing international competition (Ratajczak-Mrozek, 2009). Nowadays inter-organizational cooperation in the form of alliances and networks is widely used by many companies. In many industrial sectors such as telecommunication we can observe hierarchical galaxies with the group of leading corporations that are surrounded by the satellite-type companies. This phenomenon has been gaining its momentum for the last two decades. In the period of 1980-90 the corporations like IBM, AT&T, Olivetti and Toshiba formed over 100 cooperation agreements each. There are corporations such as Toyota that receive over 1000 alliance proposals monthly (Obłój, 2007: 16). Apple recently announced record corporate profits but it did not act alone. Apple’s portfolio of ties with EMI, Google, Salesforce.com, Microsoft, and other firms was key to its success. These ties enabled Apple to focus on its strengths, such as architectural design, while leveraging their partners’ resources and market positions. (Ozcan & Eisenhardt, 2009). In ten years, Sun Microsystems that was established in 1982 grew to $ 3.2 billion in sales and $ 284 million in profits. This remarkable growth was achieved by the Sun’s alliance network (Lorenzoni & Baden-Fuller, 1995). The stories are not unique, because many firms rely on their portfolios of ties to enhance performance. The aerospace industry is controlled by two networks, those of Boeing and Airbus. Each consists of more than 100 partners (Freidheim, 1999). Most of the major airlines lead networks of smaller, and regional carriers in code-sharing alliances. The pharmaceutical industry is supported by networks of biotechnology firms and suppliers, cross-licenses, and distribution agreements (Child et al., 2005: 145). It confirms the thesis that a scale and scope of alliance existence have a global nature, and it especially relates to the multinational corporations. Taking into consideration this growing importance of inter-firm cooperation, the goal of the article is presentation of two network organizations belonging to the multinational corporations. Those corporations operate in neighboring parts of the value chain, and are leaders in their sectors. The article is based on the latest literature as well as the practical business experience of the author from the work in Arcelor Mittal Poland.

2 Methodology

As a research instrument, two basic methods were used:
– critical analysis of the literature devoted to the inter-firm cooperation, and
– results of pilotage research conducted in the steel industry in Poland.

The aim of research was to identify the scope and extent of network relations in steel industry and they covered three main areas:
1. networks formation,
2. networks management, and
3. growth and development of networks.

The research took place from April to May 2008. Opinion surveys were sent to 50 managers, at least middle-size level, representing 33 companies. Most of them was controlled by the ArcelorMittal as the concern controls approx. 70% of the steel industry in Poland. Due to the specific situation of Polish steel plants, where most of transformations activities took place, the research, except steel plants, covered also companies related to the steel business, connected with the steel plants and each other by means of different relations. Suggestions of answers were given in each of the said areas, asking respondents to take an attitude towards suggested statements, by answering yes or no, or by indicating the proper answer by giving points from 1 to 5 (where 1 – little importance, 5 – great importance), or by giving their own answer. 32 answers were sent, which amounted to 64% of all examined (Sroka, 2010 a).

3 The concept of alliance network: idea, evolution and advantages

There are many definitions describing the network organizations as well as classifications of this organizational form (Sroka 2008, c). Economic sociologists define a network as a form of organized economic activity that involves a set of nodes, e.g. organizations or individuals linked by a set of relationships (Gulati, 2007: 2). Acc. to Jarillo (1988), a network organization is an intensional, long-term agreement between different organizations aimed at profits, which allow them to reach (keep) advantage vis-à-vis their competitors outside the network. The companies in the network are independent, and mutual relations between them are fundamental to their competitive position. In this concept Jarillo considers the ‘hub firm’ as an essential factor: this company sets up the network and takes a pro-active role in making sure that the network functions well. Network members can be linked by many types of connections and flows, such as information, materials, financial resources, technological support etc. Connections may be informal, and totally trust-based or more formalized, as through a contract (Provan et al., 2007).

Another definition of alliance network describes it as the group of companies linked by ties that vary in formality, but are stable and significant enough to create reasonably persistent inter-firm structures (Rowley et al., 2004). Gomes-Casseres (2004: 43-52) treats alliance network as a set of firms that cooperate with each other in a multilateral relationships and also competes in a particular competitive domain. The firm relationships are looser than if they were merged through some kind of ownership structure, but tighter than if the firm’s would have only short-term transactions among each other. Network organization can be then defined as a relatively durable link of independent and specialized units or enterprises aimed at the achievement of a common target (Brzeziński, 2002). The essence of the network is that independent entities, with support of information technology create voluntary and loose configurations (Pietruszka-Oryt, 2004).

Strategic networks evolve over time and space. Butler and Hansen (1991) presented a model of entrepreneurial network evolution, in which a firm goes through three phases. In the first, pre start-up phase, a firm is in the process of opportunity identification. The dominant role is played by the social network. The second phase which is treated as the business start-up, the process of business formation takes place. Links to individuals and organisations that directly serve the more immediate start-up needs (suppliers, customers, capital providers) are prominent. The third phase is the ongoing business phase, i.e. the period where the firm expands its links to other organizations and becomes a part of strategic network.

Engagement in networks has several advantages (Greve et al., 2010; Child et al., 2005: 147-148; Sroka & Kubicka, 2009). Network structures provide a source of opportunities that help network members arrive at favorable outcomes. These opportunities are related not only to the network’s structural features but also to its content and nodal properties. Past networks offer actors a combination of experiences, knowledge access, prominence, and power that can open opportunities and create inducements, which in turn can influence the evolutionary pattern of network structures (Zaheer & Soda, 2010). Strong international competition and rapid technological development urge firms to produce new products, develop new processes and access new markets. Participation in the network enables a firm to concentrate on core capabilities, and provides access to the resources such as specific know-how, technology, products, assets, markets in other firms. Additional advantage a firm can gain from being a member of an interorganizational network is becoming part of a specialized group. This advantage is especially important in the construction industry where there can be many specialists ranging from architects, plumbers, carpenters, salespeople, and environmental specialists that cooperate in order to offer solutions to complex problems. Firms can also share costs of communication, and marketing to their buyers. These promotion activities can be very expensive. Joint marketing is one way to perform these activities more efficiently. For example, shared websites make communication and promotion with buyers more efficient and effective. Firms gain access to a shared logo, brand names and other partnering based legitimacies from the interorganizational network (Haahi & Yayas, 2004).

Cooperative strategies, usually in the form of networks, are more beneficial than other forms of external growth due to the existence of many regulation mechanisms in developed countries. These mechanisms preclude too high level of concentration (monopolization) of the economies. It is especially observed in the EU countries, and United States. Global networks, treated as “relations enterprises” are more favorable in such circumstances. They operate as single companies and enable for business consolidation. Telecommunication sector is considered as one of the most „networked“ branch. For example, Philips began its activity as an independent firm, and in the next years its growth was based on alliances. It allowed him to build up a wide portfolio of cooperative agreements. Such a growth model is a natural evolution of the firm. They state that companies compete first as independent entities, then create dyadic alliances, and the next stage is the formation of alliance networks (Sroka, 2010 b).
4 Multinational corporations

As the dominant force shaping the world economy at the beginning of 21st century, globalization also shapes the structure of a business enterprise. The key question is: how can a company achieve a global leadership position? The answer is very simple and short: be global, set world standards and be local. A company must develop certain capabilities in each of these areas (Freidheim, 1999). Generally, a global company is considered as the entity that possess global brands of products and sells them globally, as well as operates in a variety of countries (Whitwam, 1985). Another definition treats the global company as an entity that operates globally, is globally managed and implemented a global strategy. The common feature of different definitions of the global strategy are two elements: activity on a global market and global management system. Therefore the companies have to look for the new sources of competitive advantage (Morden, 1991). Possession of a global strategy is the necessary condition of development and growth of a company, especially in a turbulent environment (Yip, 1996: 22). In the frame of global strategy there are at least two separate approaches to its implementing and adaptation:

- separate strategy on many markets,
- global approach (Porter, 1996).

The practical example of global strategy is the case of Japanese automotive companies. Their global strategy is based on a couple of elements:

- building up the automotive factories abroad, mainly in the USA, UE and in emerging markets.
- forming strategic alliances with companies from different countries, e.g. Mazda and Ford.
- searching the cheaper suppliers of parts and components especially in Asia.
- permanent rationalization of production processes (Kobayashi, 1988).

Japanese firms focused on increasing profitability by reaping the cost reductions that come from experience curve effects and location economies. The R&D activities, production and marketing were concentrated in a few favorable locations. Some companies used their strong cost advantage to support aggressive pricing in the markets. It finally allowed them to achieve leading positions on the most important markets.

5 Networks of selected multinational corporations

5.1 Toyota keiretsu group

Toyota was founded by Kiichiro Toyoda in 1937 as a spin-off from his father’s company Toyota Industries to create automobiles. At the very beginning it was dealing with the manufacturing of textile machines (Stewart & Raman, 2008). The activity of Toyota is deep-rooted in the tradition. A specific feature of economy in Japan is occurrence of keiretsu groups that are some type of network organizations. They exist in all sectors of Japanese economy. Keiretsu groups are treated as one of the source of Japanese economic miracle after the World War II (Dennis, 2000), and the logic of their existence stem from the functioning of the Japanese family (Bhappu, 2000).

In keiretsu there is a leading company in the center that is surrounded by the satellite-type companies which play the role of sub-suppliers. Personal relationships between employees are the base for its functioning. They have to cooperate in all phases of production process so that it was possible to create new, good quality and relatively cheap products (Dyer, 1996 b). Those relationships are enhanced by financial ties that are equally important. One of the most important features of keiretsu is the approach to solving problems. Large companies which play the key positions in the network usually assist their members to solve operational problems (Hagen & Choe, 1998). It favors the cooperation among partners, develops trust and diminishes the area of potential conflicts.

Japanese keiretsu operate in accordance with certain standards. The strong financial organization or a bank as the strategic investor of keiretsu group is the first rule. The main task of the bank is granting credits and emission of debt instruments. Every bank has a great control over the companies in the keiretsu and acts as a monitoring entity and as an emergency bail-out entity. Additional effect of this structure is to minimize the presence of hostile takeovers, because no entities can challenge the power of the banks. Secondly, the internal financial flows among the keiretsu members should be negatively correlated. If the export sales collapses, the main banks provide with cheaper production means for the necessary adjustments and the satellite-type companies being the regular sub-suppliers radically reduce costs (Romanowska et al., 2000, 99-106). It is also worth adding that there are capital links between particular keiretsu groups.

Toyota keiretsu is similar to the other groups existed in Japan. It is based on two rules:

- dual labor market is not violated by integrating suppliers into Toyota,
- supplier capabilities are improved through the transfer of competences to them (Kogut 2000).

Over time, Toyota subcontractors were reorganized into tiers through concentration of orders, intensified specialization and increased dependence on particular customers (Fruin & Nishiguchi, 1993: 225-246). In the tiered structure, approximately 180 first-tier suppliers contract to several thousand lower-tier subcontractors that, in turn, contract to tens of thousands third-tier suppliers (Kogut, 2000). First-tier suppliers have the highest portfolio of orders. Such a structure has several advantages, e.g. allows for differentiating of resources possessed by particular sub-suppliers. To participate in the first tier, suppliers are required to prove, codify and share their competence with each other.

The increased reliance by Toyota on first-tier suppliers generated important organizational innovations. Through repeated interactions between firms in the network, a series of innovations emerged that supported the acquisition of skills specific to the relationships. These innovations included joint price determination based on objective value analysis, joint design, profit sharing rules, subcontractor grading, quality
assurance through self-certified subcontractors and just in time deliveries based on bonus-penalty programs. Through monitoring and supplier qualification requirements, Toyota selectively develops relationships with its suppliers. They are evaluated according to how well they have performed on earlier contracts. All types of suppliers have to develop some skills and competences, other than purely technological capabilities, if they want to maintain the relation to the core firm. Often, partial ownership is sought in the suppliers that rank the highest in terms of performance and potential capabilities (Kogut, 2000). This dynamic, permanent process allows for costs reduction in Toyota and performance improvement of the suppliers. Cooperation in the network and transfer of knowledge among particular members is linked with effectiveness improvement of the suppliers (Kotabe et al., 2003). Toyota also gives its partners a possibility of trainings and assistance in terms of expert knowledge on components manufactured (Lorenzoni & Baden-Fuller, 1995). Knowledge diffusion occurs more quickly within Toyota’s production network than in competing automaker networks. Suppliers do learn more quickly after participating in Toyota’s knowledge-sharing network. Toyota’s network has solved three fundamental dilemmas with regard to knowledge sharing by devising methods to: 1. motivate members to participate and openly share valuable knowledge (while preventing undesirable spillovers to competitors), 2. prevent free riders, and 3. reduce the costs associated with finding and accessing different types of valuable knowledge (Dyer & Nobeoka, 2000). Moreover, the keiretsu companies that cannot identify the source of their problems can always count on the assistance of specialists from the group (Liker & Choi, 2006). Simultaneously Toyota offers cheaper and better quality vehicles than its rivals (Kobayashi, 1988) and has the highest profitability (Dyer, 1996 a). Generally Toyota has a core competence in the manufacturing of cars, especially in the production technology and work organization. It is able to manufacture high quality, well-designed cars at a lower delivered cost. The skills that enable Toyota to do so reside primarily in its production, material and human resource management. At the same time the results of Toyota are substantially better than its competitors, e.g. in 2007 it generated net profit of $13.7 billion while General Motors and Ford had the loss of $1.97 and 12.61 billion respectively (Stewart & Raman, 2008). Despite the fact that the group made a loss of $4.3 billion in 2008, one should remember that its main reason was the breakdown of American market which is considered as the second main area of company’s functioning.

American Chrysler tried to take advantage of experience of Toyota in the 90s. The concern radically reduced production costs through a fundamental reconstruction of its suppliers base. The number of sub-suppliers were reduced and they were offered more orders. Effectiveness was substantially improved by just in time dispatches (e.g. reduction of inventories) and reduction of defects (Dyer, 1996 a).

5.2 The case of Arcelor Mittal Group

Arcelor Mittal Group is the biggest steel producer in the world. It was set up in 2006 as a result of merger between Arcelor and Mittal Steel. Their merger created the worldwide leader in the steel industry, increasing its bargaining power with suppliers and consumers. External growth is treated as the main strategic direction of the group which is treated as the only, “truly global” steel company. This is because Arcelor Mittal:
- has its own steel plants on all - except Australia - continents,
- is present in 60 countries worldwide and employ 320 thousand of employees,
- is strongly integrated steel producer with coal mines and iron ore factories,
- has its R+D centers located in France and USA,
- makes centralized purchases of raw materials.

The said merger was very important due to a couple of reasons. Firstly, due to the scale and scope. In the 90s there were revolutionary changes in the European steel industry and the merger between Krupp and Hoesch started the last stage of integration of the branch. Beside spectacular transactions such as acquisition of Cockeril Sambre by Usinor and merger between Hoogovens and British Steel, there were over 120 smaller scale consolidation transactions, and in 1997 over thirty (Sroka, 2008 b). However none of these transactions had neither the comparable scale nor scope. Secondly, both companies had comparable potential so it was the merger of equals. Thirdly, both Arcelor and Mittal were relatively young companies. They were also complementary to each other, as Arcelor had steel plants located mainly in Europe while Mittal mostly in other destinations on all continents except Australia. The merger has changed the steel industry in the world. But still, this sector is not as strongly consolidated as automotive industry that is one of the main steel consumers. This means that there is still some potential for consolidation processes in the steel branch.

The group is the leader on all the markets served, i.e. automotive industry, primary transformation, construction, household appliances, metal processing, general industry, packages etc. The revenues of Arcelor Mittal reached $105 billion in 2007 and market share increased to almost 10% (De Smedt & Van Hoey, 2008). One year later the revenues reached $124.9 billion and total production rose to 103 million tons of steel. What is more important, ArcelorMittal plans to reach 200 million tons of output in five to ten years through mergers and acquisitions in developing countries including the BRICs (Brasil, Russia, India and China), Turkey, Eastern Europe countries and other countries in Asia (Kyeong-Chan, 2009). The group also occupies a leading position in the world in the field of research and development (Wiechoczek, 2009).

Arcelor Mittal entered polish market in 2004 by purchase of the biggest steel producer, i.e. PHS which had total turnover of over $3 billion per year. Thus Arcelor Mittal became the owner of four steel plants: Katowice, Sendzimir, Cedlera and Florian. Mittal Group also purchased shares (sometimes majority) in a few dozen of entities operating in different sectors of economy: machines, transportation, coke, maintenance, electrical and power industry and many others, at the same time becoming the group that controlled over 70% of production potential of steel industry. Starting the most modern steel hot-rolling mill in Europe allowed for winning customers (especially those working in the European markets) from sec-
tors that are most dynamically developing, i.e. automotive and household goods sectors.

The issue of the network organizations is the subject of many analyses. Generally it is possible to identify different types of networks, however, from the practical point of view, we usually divide them into dominated networks, where a dominating or leading company is surrounded by satellite-type entities, and equal-partners networks that are connected via alliances in their different organizational and legal forms. As far as the steel industry is concerned, it is necessary to state that a classic operation in the process of restructuring of Polish steel plants was to split out the processes that were not the core business, i.e., the basic activity. This concerned the following areas: property protection, maintenance, medical services, transportation, and others. Almost all steel plants were concerned and the differential factor was the level of outsourcing activity and the scope of activities separated from particular steel plants (Sroka, 2008 a). At the very beginning the steel plants usually were the 100 % owners of the spun-off subsidiaries. Afterwards the external entities, both domestic and foreign, have purchased the shares (sometimes majority) in those subsidiaries, thus becoming their shareholders. Well-established and renown corporations participated in such transactions, e.g. ABB and Air Liquide became the strategic investors of two firms, that have been formerly separated from Huta Katowice. Such network connections still exist in most of the steel plants at present, and they are also observed in ArcelorMittal Poland. Usually they take the form of dominated networks where metallurgical companies are in the middle (a part of global concerns at the moment), which are surrounded by a chain of companies related to the steel business, operating in different sectors. They are all connected by means of capital bonds, although some respondents in the surveys had indicated also the commercial bonds, with no capital engagement of the parties.

A characteristic feature of the ArcelorMittal Group are the network connections between its particular firms. This is because the steel industry in the world is organized in a similar way. Additionally ArcelorMittal includes a number of firms situated in the countries of former Soviet Union bloc (Poland, Romania, Czech Rep., Ukraine, Kazakhstan), so the organizing of production activities is very similar in every steel plant. This also applies to ArcelorMittal’s operations in Poland. The concern includes more than fifty companies in Poland. If possible, the cooperation exists within the group, e.g. supplies of furnace charge from Huta Katowice to Huta Sendzimira for manufacturing of h0l-rolled sheet metals (Slusarczyk, 2009), i.e. between two steel plants. Beside such a cooperation, we can observe business relations among steel plants, and steel-related firms, and between steel-related companies themselves. Therefore the coopération phenomenon can be observed in the group. The relations between depending organizational units have a horizontal nature, and towards the HQ – hierarchic. Intra-organizational coöperation relations include both branch level, and corporation division. Those units cooperate with each other, and face internal conflicts (Cygler, 2009: 31-32).

Privatization of polish steel plants and getting the strategic investors changed the situation of networks simultane-

ously. New investors implemented different strategies to their companies linked by networks. Some decided to incorporate spun-off companies (or part of them) to the plants. The specificity of functioning the entities in Poland is different than in their foreign counterparts, e.g. Polish steel entities, to a greater degree than steel plants in other countries, were surrounded by the satellite-type entities, often of weak financial condition, from different branches, even from so remote sectors as medical, just to mention one. This resulted mainly from the residuals after the central-planned economy. In the Western entities it has happened in a different way. Arcelor Mittal Poland chose another option and did not change the structure of the group. At the same time it merged the firms with the same or similar operations.

6 Multinational corporations networks vs. small entities networks: comparison

Alliance networks are not a domain of multinational corporations only. More and more frequently this applies to small and medium size companies too. For example, it is a normal cooperation formula in case of polish transportation firms. The MTS Roch is an example of such a company. It is a small entity with its location in Kleszczowa (south of Poland). It has been operating on the market for almost 20 years and to the group of company’s clients belong leading steel enterprises, e.g. Arcelor Mittal Poland, CMC, and companies from other sectors. The main directions of its operations include transports to West European countries, such as Germany, Belgium, the Netherlands and France. The company cooperates with the group of over 10 transportation firms, creating thus informal network of connections based on mutual trust (Sroka & Kubicka, 2009).

The same is observed in Finland, where a lot of big global companies separated some functions from their structures and vested them with a separate legal entity, and cooperates with them on the network basis. A mother company is in the central position and is surrounded by a network of small and medium companies rendering their services for both the mother company and other external entities. A classic example of such alliance network is the project called PARTNET that is functioning in the Finnish metallurgical industry. The project was initiated in 2002 and includes 7 companies located in the south of Finland (Sroka, 2008 b).

It is also worth adding that the author’s survey (Sroka, 2008 a) also stated that when realizing big projects, satellite-type companies create micro networks including a couple of partners and play the central positions in them. Table 1 presents a comparative analysis of multinational corporations networks and small entities networks.
Analysis of the table allows to say that there are similarities and differences between both cases. They usually result from the network size.

## 7 Conclusions

Inter-organizational cooperation is regarded as a critical aspect of competition in variety of industries. Some companies have a portfolio of bilateral alliances, sometimes as in case of Corning or General Electric including several hundreds of partners. Other firms participate in complicated web of mutually dependent relations. There are corporations surrounded by satellite-type companies, thus having dominated networks and equal partners networks. These complex networks can be large and stable such as Japanese keiretsu or more fluid like mutually linked groups of firms in biotechnology (Bierly & Gallagher, 2007). On the other hand alliance networks are not a specific feature of large corporations only as they are also formed by small and medium size companies. Irrespective of the network size, it generally confirms the thesis that inter-organizational cooperation is one of the key possibilities to achieve a competitive advantage by any company, and especially the multinational corporations. This is because multinational corporations seek growth possibilities on emerging markets, and the companies from these markets want to enter the global economy. In such a case alliances and networks are a very useful tool. There are also some limits in foreign investments existence in some countries, therefore strategies of inter-firm cooperation are sometimes the only possibility to enter those markets. In other countries alliances and networks allow for faster entrance the market and reduce the risk of activity. The cases of Toyota, and ArcelorMittal confirm that alliance networks can be an effective instrument of competition in global scale. Acc.to specialists, because of wide cooperation in the networks, the said corporations achieve the position of leaders in their sectors.

From the practical point of view both networks have the form of keiretsu (with big unit in the middle, surrounded by smaller, satellite-like companies), and the management of such networks is similar to the individual companies. This also facilitates running the uniform and coherent strategy for the whole group. Moreover, the central company has guaranteed sale of its products, and the satellite-like companies may count on support in difficulties. Thus, the company has the possibility to gain an advantage over competitors, which other companies beyond the network do not have (or at least to a certain degree only).

This strategy may also be useful for small and medium size companies since it allows competing efficiently on different, and sometimes bigger, markets. The findings of the study...
References


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**Zavezniška omrežja: primer multinacionalnih družb**


Ključne besede: korporacija, zavezniška omrežja, multinacionalna korporacija, keiretsu skupina, jeklarska industrija