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The Transfer of Knowledge in Intra-Organizational Networks: A Case Study Analysis

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Background: In today's business environment, a company is able to maintain its competitive position if it constantly generates knowledge and disseminates this knowledge within the organization, as well as transforms it into new competences. The ability to transfer knowledge becomes one of the key factors in the improvement of a company's competitive position. This hypothesis is applicable particularly in the case of cooperation within networks, as they are an excellent opportunity for mutual learning between partners.
Objectives: The purpose of the paper is to analyse the process of knowledge transfer in intra-organizational networks.
Method: Due to the specificity of the research object, the case study method has been chosen. In order to make an in-depth analysis of the case study, we selected a group of several criteria based on the theory which we believe to be fundamental to the effectiveness of knowledge management in networks, and compared them with the situation in the ArcelorMittal Group.
Results: Our research show that ArcelorMittal Group has met almost all the criteria of effective knowledge management in its intra-organizational network. Some exceptions, albeit merely to an extent, are mostly the result of historical circumstances, , i.e. the process of growth through acquisitions, and the acquisition of companies at different stages of organizational development, as well as organizational culture.
Conclusion: Based on theoretical assumptions, the study analysed in details the components of knowledge management applied by the corporation in question. Therefore this study might be utilised to formulate a refutable hypothesis and verify them on a larger group of companies from different sectors of the economy. The main limitations of the paper are mostly related to the inherent approach therein.

Keywords: knowledge, knowledge transfer, knowledge management, network, case study analysis

1 Introduction

In recent years, many strategic management scholars have paid close attention to knowledge management, both at the organizational level (e.g. Spender and Grant, 1996; Argote et al., 2003) as well as in terms of inter-organizational cooperation (Powell, 1998; Ingram and Simons, 2002; Lake and Erwee, 2005; Eunni et al., 2006). The concept of knowledge management goes beyond the single-discipline, covering the areas of strategic management, economics, information systems, psychology and sociology. This diversity has contributed to the rapid progress of knowledge in various areas of organizational learning and knowledge management. Knowledge-oriented concepts which had previously

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been little known, such as "organizational competence", "organizational learning", "intangible assets", "organizational capacity", or "tacit knowledge", have become widely used; and key competencies of organizations are thus based on the finding and creation of knowledge.

It is claimed that companies which do not actively manage knowledge as a key resource will not be able to sustain growth and competitiveness (Conradie, 2010). In today's business environment, a company is able to maintain its competitive position if it constantly generates knowledge and disseminates this knowledge within the organization, as well as transforms it into new competences (Nonaka, 1991). The ability to transfer knowledge becomes one of the key factors in the improvement of a company's competitive position. This hypothesis is applicable particularly in the case of cooperation within networks, as they are an excellent opportunity for mutual learning between partners. For example, Goerzen (2007) claims that through participation in networks, companies obtain swift access to knowledge and information which would otherwise be inaccessible.

The paper is structured as follows: first, we review the literature on knowledge and knowledge management in intra-organizational networks. The main sources of theoretical analysis are scientific journals, specifically those publications devoted to knowledge management in alliance networks. Based on this review, we then present guidelines for knowledge transfer within such networks. The following section concentrates on a case study analysis based on the ArcelorMittal Group, which has successfully implemented the Knowledge Management Program. Finally, we discuss the results of our study and draw some conclusions as well as presenting the limitations of our research.

2 Literature review

Knowledge has emerged as the most strategically significant resource of today's business enterprise (Grant, 1996) and a core component of a company's strategic intent. If an enterprise wants to improve its competitiveness, it has to acquire new competences obtained through cooperation with other entities, as cooperative relationships with competitors constitute a potential alternative to the generation of internal knowledge (Richter and Vettel, 1995). Networks between companies are an effective way to create competitive advantage through a combination of the complementary resources of network members (Gilsing and Lemmens, 2007). The structure of the network affects the process of knowledge transfer within the network, and companies occupying a central position in an intra-organizational network are characterized by greater innovation, as a result of better and wider access to knowledge (Tsai, 2001).

The frequency of contacts between the parties positively affects the quality and speed of knowledge transfer (Uzzi, 1991), and stronger relationships within an intra-organizational network favour the transfer of complex knowledge, while weaker ties prefer the transfer of simple knowledge (Hansen, 1999). In turn, if there are structural holes amongst network members, its innovativeness will be lesser (Ahuja, 2000). Moreover, the more organizational units which are of key importance to the network, the quicker the transfer of knowledge (Tang, 2011).

The process of knowledge transfer is based on the concept of the learning organization which facilitates the acquisition of experience and learning (Hamel, 1991). Companies which want to enhance competitiveness through knowledge management can only achieve this if there is a culture of learning. There is an inter-relationship between knowledge and organizational learning, and learning plays an important role in ensuring that knowledge is created and transferred to promote innovation. The shared values of innovation and learning need to be managed and utilized successfully to sustain economic growth and competitive advantage (Kok, 2004). In addition, this knowledge would be better transferred, absorbed and utilized if the members of the network were more closely related (both vertically and horizontally). This is directly related to the increase in mutual trust and reduction of opportunistic behaviour (Blois, 1990).

A key success factor in the transfer of knowledge within networks is absorption. When acquiring new knowledge, organizational units use their existing skills and knowledge (Zahra, 2002). The level of knowledge absorption in the network is also the result of absorption of individuals involved in the creation of this unit. Therefore the formation of creative and professional teams is a necessary condition for the maintenance of a sufficiently high level of absorption. There are two factors affecting a company's absorptive capacity. One relates to the internal factors, such as organizational structure, size, strategy, prior knowledge base, and organizational responsiveness; the other one is external factors, which include external knowledge environment and a firm's position in knowledge networks (Lee & Chi Wu, 2010).

Equally important to the quality of knowledge transfer is the sender's ability to spread. These issues have received much less attention from researchers, despite the importance of the knowledge sender's disseminative capacity to the success of the transfer. Parent et al. (2007) explain this capacity as "the ability to contextualize, format, adapt, translate and diffuse knowledge through a social and/or technological network and to build commitment forms of stakeholders". Disseminative capacity is related to the likelihood of precise, clear and effective articulation and transfer of knowledge to other members of the network. These capabilities include the transfer of knowledge in conceptual form, and the familiarization of customers with its practical implementation.

It is increasingly stressed that the transformation of knowledge possessed by the sender into value which has value for customers, is needed (Kulken and van der Sijde, 2010). Therefore, the sender should have creativity, knowl-

edge, communication skills and the appropriate personality traits. The knowledge transfer is faster if the sender's ability to disseminate knowledge is greater. This, however, depends on the degree of homogenization of the network and the strategy of its members, as well as on the uniformity and strength of organizational culture (Abrahamson and Fombrum, 1994). However, disseminative capacity depends not only on the skill of the sender, but also on its willingness to transfer knowledge. Research undertaken by Minbaeva and Michailova (2004) show that the disseminative capacity of knowledge senders is greatly increased when there exist both the ability and willingness to transfer knowledge, both of which are crucial to the quality of this process.

Another factor influencing the quality of knowledge transfer is its inherent nature. Organizational knowledge can be divided into explicit knowledge, which is to say knowledge which can be codified; and tacit knowledge which is hidden and difficult to indicate (Polanyi, 1966). No difficulties are usually encountered in the transfer of codified knowledge, but its value to the organization is lower than for tacit knowledge. Although hidden knowledge is extremely beneficial for the company, it is also very difficult to transfer it to partners within a network. The main reason is the fact that understanding and explaining this knowledge requires a significant period of time, and therefore slows down the development of new products or production competences. Johannessen and Olsen (2003) also claim that tacit knowledge can be a barrier to innovation because it is usually part of a long-term learning process in a specific environment. On the other hand, Barney (1991) claims that tacit knowledge is regarded as a basis for the creation of competitive advantage.

In addition, Szulanski (1996) pointed out the danger of multiplicity and ambiguity in the interpretation of transferred knowledge and its relative novelty. Knowledge, especially informal, can be interpreted differently by the recipients according to their perception and prior experience. The problem arises when there is a network in which knowledge transfer is multilateral, and both direct and indirect. In turn, knowledge which has no documentary history causes substantial complications in the transmission and reception thereof, in terms of an intra-organizational network. It requires the parties to develop their own procedures for the reporting, acquisition and exploitation of the new knowledge. One then expects greater flexibility, openness, innovation and the commitment of all network members and their appropriate capacity, depending on their functions both within the network and in the process of knowledge transfer.

The transfer of knowledge in an intra-organizational network requires certain procedures and rules. It has been claimed that each network would be better advised to develop its own programs, depending on different factors such as: strategy, the network structure and specificity of network members, type of knowledge being transferred, etc. The program of knowledge transfer in an intra-network defines the rules regarding the selection of knowledge to be transferred to the different groups of customers at the proper time (Hutzschenreuter and Horstkotte, 2010). The transfer of knowledge is much more efficient when the parties involved in the cooperation processes are similarly trained and educated (Reagan & McEvily, 2003).

It is worth noting that the central unit is the initiator of the creation of knowledge transfer in an intra-organizational network. However, bottom-up initiatives are also valuable. A knowledge transfer program is characterised by substantial flexibility, and varies depending on the nature and needs of the network members; the strategic goals of the organization; as well as its organizational and financial resources. It requires a certain level of specialization from the members of the network. The specialization of companies in the network is associated with the division of labour and tasks between them, which may be more or less intense. Both cases are related to the need for the exchange of knowledge in terms of products and processes, as well as proper coordination thereof (Kotabe et al. 2003). Research confirms the usefulness of both formal and informal relationships between member companies in terms of access to knowledge and its transfer between partners. Such companies benefit from cooperation in that they are then able to improve their core competencies (Lorenzoni and Lipparini, 1999).

We have presented only selected information and data regarding knowledge and knowledge management which can be found in the literature. The chosen works exhibit some common features in that all the authors underline the importance of knowledge, both at the organizational level as well as at the network level. Therefore, knowledge requires proper management; and the process of the transfer of knowledge is especially important in networks due to the following factors: (a) the different members of the network and their specificity, (b) the network structure, (c) the type of knowledge transferred, (d) expertise, and (e) distribution channels. All these elements create a system of knowledge transfer within the network. The quality of this system will depend both on its individual components as well as the system as a whole. On the other hand, a properly designed knowledge transfer system is a prerequisite for the effective transfer of knowledge in the network which can in turn generate a competitive advantage. Table 1 presents a summary of the most important approaches and concepts related to the knowledge transfer in the networks.

3 Case Study Analysis

3.1 Choice of methodology

Welch et al. (2011) claim that the case study has an established place in qualitative international business research. This is not surprising, given its potential to generate novel and ground breaking theoretical insights. Case studies pro-

Table 1: The most important approaches and concepts related to the knowledge transfer in the networks.

No.	Author	Description of the approach
1.	Gilsing and Lemmens, 2007	Networks between companies are an effective way to create competitive advantage through a combination of the complementary resources of network members.
2.	Tsai, 2001	The structure of the network affects the process of knowledge transfer within the network; companies occupying a central position in an intra-organizational network are characterized by greater innovation, as a result of better and wider access to knowledge.
3.	Uzzi, 1996	The frequency of contacts between the parties positively affects the quality and speed of knowledge transfer.
4.	Hansen, 1999	The stronger relationships within an intra-organizational network favour the transfer of complex knowledge, while weaker ties prefer the transfer of simple knowledge.
5.	Ahuja, 2000	If there are structural holes amongst network members, its innovativeness will be lesser.
6.	Tang, 2011	The more organizational units which are of key importance to the network, the quicker the transfer of knowledge.
7.	Hamel, 1991	The process of knowledge transfer is based on the concept of the learning organization which facilitates the acquisition of experience and learning.
8.	Zahra, 2002	A key success factor in the transfer of knowledge within networks is absorption. When acquiring new knowledge, organizational units use their existing skills and knowledge.
9.	Kulken and van der Sijde, 2010	The transformation of knowledge possessed by the sender into value which has value for customers, is needed. Therefore, the sender should have creativity, knowledge, communication skills and the appropriate personality traits.
10.	Abrahamson and Fombrum, 1994	The knowledge transfer is faster if the sender's ability to disseminate knowledge is greater. This depends on the degree of homogenization of the network and the strategy of its members, as well as on the uniformity and strength of organizational culture.
11.	Polanyi, 1966	An important factor influencing the quality of knowledge transfer is its inherent nature. No difficulties are usually encountered in the transfer of explicit (i.e. codified) knowledge. In turn, tacit (hidden) knowledge is very difficult to transfer to partners within a network. The main reason is the fact that understanding and explaining this knowledge requires a significant period of time, and therefore slows down the development of new products or production competences.
12.	Johannessen and Olsen 2003	Tacit knowledge can be a barrier to innovation because it is usually part of a long-term learning process in a specific environment.
13.	Barney (1991	Tacit knowledge is regarded as a basis for the creation of competitive advantage.
14.	Szulanski, 1996	The danger of multiplicity and ambiguity in the interpretation of transferred knowledge and its relative novelty.
15.	Hutzschenreuter and Horstkotte, 2010	The transfer of knowledge in an intra-organizational network requires certain procedures and rules. It defines the rules regarding the selection of knowledge to be transferred to the different groups of customers at the proper time.
16.	Reagan and McEvily, 2003	The transfer of knowledge is much more efficient when the parties involved in the cooperation processes are similarly trained and educated.

Source: own elaboration

vide the research framework within which an observation and analysis of behaviour in relation to both structure and mechanisms can be conducted (Klonoski, 2013). They are generally constructed to explain the mechanism contributing to a described event and to interpret its social, cultural and organizational meanings rather than to create predictions about future events (Wynn and Williams, 2012). Given these considerations, the case study method has been chosen due to two main reasons. The first was the specificity of the research object. Another reason was in-depth local knowledge of the authors of the object analysed. As Fenno (1986) claims, if the researchers have this local knowledge they are in a position to "soak and poke", and thus to offer reasoned lines of explanation based on this rich knowledge of setting and circumstances. This knowledge is the result of the author's work in the object in question. Case studies are analyses of persons, events, decisions, periods, projects, policies, institutions, or other systems that are studied holistically by one or more methods (Thomas, 2011). Yin (1981) indicates that the case study method can be employed if "it attempts to examine: (a) a contemporary phenomenon in its real-life context, especially when (b) the boundaries between phenomenon and context are not clearly evident". Our research object fulfils both conditions.

Case study research can be used to generate and test theories within a positivist paradigm (Eisenhardt, 1989). Furthermore, a recent review of articles published in four core international business journals over a 10-year period found case studies to be the most popular qualitative research strategy (Piekkari et al. 2009). An analysis of the complexity of the network (including the transfer of knowledge) requires a comprehensive approach, which is supported by case study research. The case presented in this paper is more descriptive than explanatory or exploratory (Yin, 1994), in which the key issue is to describe the phenomenon, together with the circumstances of its occurrence (Mitchell, 1980). This, however is also an another advantage of the case study presented, as the readers will have an opportunity to learn about the problems with knowledge management which they may encounter. Therefore it may be also useful for the companies operating in a variety of industries.

On the other hand it should be noted that there are indeed both advantages and disadvantages of this research method. The advantages of the case study method include its applicability in such cases when the research object is difficult to examine through quantitative methods, or when it is relatively new (in other words when a lack of previous studies exist in the literature). This method is also flexible and creative (Patton, 2002; Marelli, 2007). In turn, the weakness of this method includes the emotional attitudes of researchers to the object of the study, which may affect the objectivity of the conclusions (Smith, 1990) and the requirement for a high level of analytical abilities and writing skills. Welch et al. (2011) also observe that literature on case studies has tended to focus on the methods of data collection and analysis rather than the methods of theorizing from case studies. Therefore, as has been stated by Tsang (2012), the theorizing potential of case studies has not been fully realized in the field of international business research.

3.2 Description of ArcelorMittal Group

The case study analysis concentrates on the steel industry, and more specifically on ArcelorMittal, the world leader in this industry. The research object was selected because of the following reasons:

- ArcelorMittal is a wide capital group which crates the network in international scale. This geographical dispersions requires a constant shaping the effective transfer of knowledge within the network;
- previous research confirmed the existence of network connections in Polish steel industry (e.g. Lisiński et al. 2012; Sroka 2012) and ArcelorMittal controls approx. 70 percent of Polish steel sector capacity. It can then be assumed that the network connections can be applied to the whole corporation;
- in the frame of its intra-organizational network, the group has developed the original solutions related to processes as well as structures of knowledge transfer (e.g. Sroka, 2010 b). This is unquestionable and influences the market, organizational, as well as financial results of the whole group;
- successes and failures in the process of knowledge transfer are not a specific feature of this corporation only. They have a universal nature and can be applied by other corporations with a similar geographical scope and/or branch relationship. Growing globalization causes that the experiences of some corporations can be analyzed and utilized by the others.

The steel sector is highly differentiated in terms of strategic orientation. The following normative categorisation can be used as an overall framework for describing the industry (Boston Consulting Group, 2007):

- global players,
- regional champions,
- niche specialists.

Arcelor-Mittal (which was set up in 2006 as a result of about 50 smaller transnational mergers, where Arcelor originated from Arbed in Luxembourg, Usinor in France and Aceralia in Spain) is a true global player in the steel industry. It has a world-wide network with production facilities in each region and a full range of products, producing more than 50 million tonnes, and has backward integration. It is a worldwide leader in the steel industry, a fact which increases its bargaining power with suppliers and consumers alike. No consolidation transaction in the steel industry prior to this merger was of either comparable scale or scope (Sroka, 2010a). External growth is treated as the main stra-

tegic direction of the group, which is treated as the only "truly global" steel company. ArcelorMittal is the leader in all markets which it serves, i.e. the automotive industry, primary transformation, construction, household appliances, metal processing, general industry, packages etc. The revenues of ArcelorMittal reached $105 billion in 2007 and market share increased to almost 10 percent (Granboualan et al. 2008). One year later revenues reached $124,9 billion and total production rose to 103 million tons of steel. The group also occupies a world-leading position in the field of research and development (Wiechoczek, 2009).

A characteristic feature of the ArcelorMittal Group is the network connections between its particular companies. Additionally, the ArcelorMittal Group includes a number of companies situated in former Soviet Union bloc countries (Poland, Romania, the Czech Republic, Ukraine, and Kazakhstan), so the organizing of production activities is broadly similar in each steelworks. Relations between organizational units are horizontal in nature, and hierarchical in terms of relations with headquarters. Intra-organizational coopetition relations include both branch level, and corporate level. Those units cooperate with each other, while at the same time facing internal competition. Therefore, it can be said that ArcelorMittal Group is a prototypical example of an intra-organizational network, with a number of steel divisions located throughout the world. In other words, it represents all the features of such a network.

3.3 Knowledge Management Program

We analysed the assumptions of knowledge management programs within the ArcelorMittal Group, which had previously implemented the assumptions of knowledge transfers internally (ArcelorMittal Knowledge Management Program - KMP). A key component of the program is the participation of managerial staff in the "Manager Academy". The Manager Academy Program was implemented in 2006 and comprises three main blocks (Gajdzik, 2008):

- Fundamentals and knowledge – its purpose is to construct new employee approaches and new organizational culture and goodwill,
- Management skills – covering performance management, leadership, personal effectiveness, and team leadership; generally speaking its purpose is to improve the skills and competences of the management staff,
- Professional skills – consisting of training in innovative and analytical thinking, dealing with stress, decision making, labour law, recruitment interviews, lean manufacturing, value chain management, project management, commercial negotiations and negotiation techniques, business communication, change management, and conflict resolution.

The Program has a long-term perspective and, within ArcelorMittal Poland only, three subsequent editions were undertaken, each for around 300 people. The Program was broken down into four levels: level 1 – top management; level 2- senior management; level 3 – middle-level management; and level 4 – junior management.

This project is part of the Global Development Executive Program. It is assumed that executives will gain new analytical, interpersonal, managerial, as well as leadership skills, which should inspire them to make changes at different levels of the corporate hierarchy. Lower-level employees can use the knowledge available through the system of human resource development (International Corporate Training and Development Program) via the Intranet and the Internet.

ArcelorMittal implemented an e-learning program in which employees have access to, inter alia, the Global English Service (http://www.globalenglish.com), enabling them to learn English; Online Training Center (OTC) Thomson NETg (http://www.netglearning.com) which functions as the training centre for the following departments: accounting and finance, customer service, human resource management, sales, marketing, project management; Business Book Review – literature which is thematically linked to the production processes; and Steel University, an English-language dictionary containing vocabulary specific to the steel industry.

Another important component of the program is the exchange of knowledge and experience amongst the employees of the corporation as a whole. It is worth adding that such an exchange of knowledge relates to both the senior management level and individual employees, as part of the 'crossing' process. Crossing means that employees in identical positions perform the same tasks in other divisions of the corporation.

The group organizes internal meetings, treating them as part of the exchange of experience; holds meeting with experts and scholars outside its structures; as well as participating in national and international conferences, symposia and workshops. Generally, the group systematically organizes training sessions in order to cover all potentially problematic areas (customer service, industrial safety, SAP rules, legal regulations, etc.). It is estimated that approximately 35 percent of its staff are trained every year, and furthermore that knowledge is distributed via an effective system of communication.

Based on the analysis of ArcelorMittal's activities devoted to knowledge management, it is clear that the sharing of knowledge and the implementation of best practices are integral to its management philosophy. Through its global Knowledge Management Program, ArcelorMittal shares, develops and utilizes its knowledge and experience across all the existing facilities and subsidiaries to accelerate improvement in business performance. The KMP comprises all key functional areas, such as procurement, marketing, logistics, health and safety, steel production and processing, and customer service. The KMP includes ongoing benchmarking, regular technical meetings and information-

sharing at the corporate, regional and operational levels to drive improvement in performance, enabling each business unit to benefit from economies of scale and access to the best practices and experience available within the corporation. Therefore, the KMP contributes to enhanced quality, productivity and profitability across the whole group.

4 Theoretical assumptions vs. case study analysis – comparison

In order to make an in-depth analysis of the case study, we selected a group of several factors (criteria) based on the theory which we believe to be fundamental to the effectiveness of knowledge management in networks, and compared them with the existing situation in the ArcelorMittal Group. The results are presented in Table 2.

An analysis of Table 2 shows that ArcelorMittal Group has met all the criteria of effective knowledge management in its intra-organizational network. Some exceptions, albeit merely to an extent, are mostly the result of historical circumstances, i.e. the process of growth through acquisitions, and the acquisition of companies at different stages of organizational development, as well as organizational culture. This can limit the ability to absorb knowledge; however not excluding it completely, of course. Another issue relates to coopetition, which is mostly a feature of inter-organizational networks. The nature of the ArcelorMittal network, which can be classified as intra-organizational, means that aspects of cooperation dominate the competition; yet some limited level of competition exists, and has a positive effect.

One of the key elements of modern management is knowledge management, a thesis which is borne out by the results of ArcelorMittal operations. It posted a net profit of $2.26 billion in 2011. In turn, 2012 was a very difficult year for the steel industry, particularly in Europe, where the demand for steel fell a further 8.8 percent, and the slowdown in China's economy. As a result, ArcelorMittal posted a net loss of $3.73 billion. The company's sales were also down 10.39 percent to $84.21 billion in 2012.To give but one example, due to overcapacity and reduced demand in Europe, ArcelorMittel had 9 of 25 blast furnaces sitting idle, and in October 2012 it permanently shut down two blast furnaces at its steel plant in Florange (France). However, one expects an improvement in the situation in 2014. The worsening in results from last year cannot, however, change the opinion as to the efficiency of the knowledge management system which exists across the group as a whole.

5 Conclusions and limitations of the paper

The transfer of knowledge between companies in a network is a complex matter, certainly more difficult than in the case

Table 2: Key factors of effective knowledge management in networks: theory vs. practice

No.	Factors (criteria) fundamental to effective knowledge management in a network	ArcelorMittal Group
1.	Knowledge management as part of the company's business strategy and mission, as well as business objectives and processes	Knowledge sharing and implementing best practices is an integral part of ArcelorMittal's management philosophy.
2.	Implementation of the "learning organization" concept	Implemented in the group: constant learning, training on different levels, Manager Academy.
3.	Ability to absorb knowledge	Differentiated, depending on the particular capacities of the member companies (the steel plants are located in all continents; including companies from EU countries, such as Germany, France, Poland, as well as non-EU members such as Kazakhstan, India, Ukraine, Algeria, Trinidad and Tobago or USA). The infrastructure of the companies situated in these countries as well as the skills and competences of the employees are varied. As the result, the ability to absorb knowledge also differs. Generally one claims that the ability to absorb knowledge is higher in the companies located in the well developed economies such as Germany, USA, France.

Table 2: Key factors of effective knowledge management in networks: theory vs. practice (continued)

No.	Factors (criteria) fundamental to effective knowledge management in a network	ArcelorMittal Group
4.	Trust between network members	The intra-organizational network at ArcelorMittal promotes the existence of trust between its members. The main reason is the type of relationships within the ArcelorMittal network. The nature of the network, i.e. intra-organizational one causes that there is no danger of economic intelligence and information leakage as the companies are the members of the same corporation. Opportunistic behaviour is also limited.
5.	Character of the relationships within the network (strong vs. weak) promoting the transfer of complex knowledge	Strong relationships between members of the intra-organizational network of ArcelorMittal, facilitating exchange of complex technical knowledge on steel manufacturing processes (e.g. improvement of the operational effectiveness of the blast furnace, convertor, steel melting shop or continuous casting) .
6.	The central unit as the initiator of the knowledge transfer	The Group HQ is the initiator of the knowledge transfer, however bottom-up initiatives are also highly welcome; meetings between managers from particular functional areas in different companies and/or subsidiaries.
7.	Knowledge Management Programs and the clarity of rules therein	Existence of Knowledge Management Programs in different parts of the value chain: procurement & logistics, production, sales, etc.
8.	Existence of an effective communication system and infrastructure	Very effective communication system, as well as information infrastructure in all facilities and subsidiaries. Existence of SAP, i.e. an integrated software solution of ERP type that incorporates the key business functions of the whole corporation.
9.	Existence of coopetition, i.e. simultaneous cooperation and competition between network members	To some extent and related mostly to the group's subsidiaries; however, this positively affects the operational activity of the group as some degree of competition stimulates greater innovation.
10.	Frequency of contacts between network members	Often meetings (and benchmarking meetings), teleconferences and videoconferences between managers from the steel plants located throughout the world. Visits of the selected managers in the steel plants belonging to the group to share knowledge and skills.
11.	Creation of the task teams in order to perform certain actions	Widely implemented and utilised; every new acquisition is prepared and managed at the first stage by a selected group of experienced managers from different parts of the value chain: finance, sales, production, accounting, logistics etc. The same relates to the solving problems which are encountered during operation and/or tasks imposed.
12.	Division of labour and tasks	Widely applied; inter disciplinary teams consisting of specialists from different divisions of the group.
13.	Existence of internal procedures and rules associated with knowledge management	Not confirmed in 100 %, however, based on the data presented above, one should assume that such procedures really exist within the group.

of individual companies. However, a properly designed transfer system is a prerequisite for effective knowledge transfer in an intra-organizational network, which can assist in the generation of competitive advantage. It has even been claimed that one of the strategic options open to the steel industry is to engage in strategic networking and knowledge sharing within R&D in energy-improving technologies (Study, 2008). High priority is given to innovation and close cooperation with customers with regard to development.

ArcelorMittal Group has implemented the assumptions of knowledge management program within its corporation. Almost all the criteria of effective knowledge management in its intra-organizational network have been met by the group. Some exceptions, albeit merely to an extent, are mostly the result of historical circumstances, i.e. the process of growth through acquisitions, and the acquisition of companies at different stages of organizational development, as well as organizational culture. For example, there are the companies both from developed as well as developing countries in the group. Algeria, Kazakhstan, Ukraine and some other economies belong to the latter group. This can limit the ability to absorb knowledge; however not excluding it completely, of course.

The case study analysed the particular situation of the global corporation operating in the steel industry. Based on theoretical assumptions, it analysed in details the components of knowledge management applied by the corporation in question. Therefore this case study may be utilised to put the hypotheses and verify them on a larger group of companies from different sectors of the economy. The universal nature of the case presented, i.e. the possibility to apply the findings of the paper in by the companies operating in a variety of sectors is the most important implication for the practice. Thus it could be regarded as our contribution to the existing knowledge about learning and knowledge transfer in networks.

The main limitations of the paper are mostly related to the inherent approach therein. It constitutes a case study analysis based on a particular global corporation, which operates in a traditional sector of the economy. Moreover, the group has successfully implemented the assumptions of a knowledge management program, which cannot be said of every company. Therefore, it is not possible to argue definitively that this concept would succeed in other companies, e.g. in high-tech industries.

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