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The Challenges of the Networked Enterprises: A Conceptual Paradigm

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Abstract. This article attempts to examine the networked business as a partnership strategy in a very complicated competitive context. At first, we focus on the design, characteristics and the different strategic objectives undertaken by the forms of cooperation. The second part of the article is devoted to determine the decisive factors such as trust and transparency as well as shared interest adopted by the managers to build a sustainable partnership network.

Keywords. Networked Enterprise; Partnership; Business Environment

Introduction

Today in an increasingly complicated world, companies are under increasing pressure, striving to be creative, methodical and dynamic. To cope with, the emergence of business groups integrating under different forms of partnership is established, giving birth to a networked business. This is part of an efficiency logic by which the company develops through a relational strategy in order to assert its competitiveness in a chaotic environment. Through its systematic characteristics, the network makes a decisive contribution to the competitive capacity of companies in order to maintain and consolidate their competitive position. However, this partnership strategy which has developed at an impressive rate often remains fragile and subject to a great instability, with a high failure rate reaching high records (Alberto Ferraris et al, 2019; Donald M. DePamphilis, 2018). In this context, we try to assess the prospects for the development of the networked business as a competitive strategy, and to give an explanation of the complex arrangement of the qualities and weaknesses that require. We also set out to specify that an effective network is dependent on a set of determining factors on which managers must work.

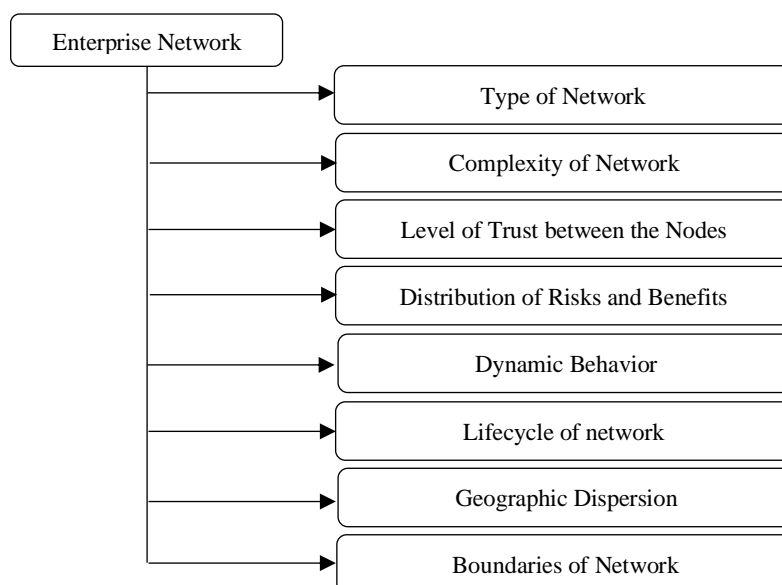
1. The Networked Enterprises

The networked enterprise has been defined by many authors as a company that works in close cooperation with other companies and sharing the same interests. The networked enterprises pool their resources and skills for the realization of the same project through different kinds of transactions and contracts established among them (Hervé Panetto et al, 2012; Koka, Luis M. Camarinha-Matos, 2004). There are also those who consider the network

as a hybrid or intermediate form in which the company becomes a structure with multidimensional variables (Hite, J. M *et al*, 2001). It is therefore a new way of organizing relationships with contacts both inside and outside the company and a moving approach more towards a partnership relationship. The latter is featured increasingly by a virtual organization, a box of contracts, independent partners, occasional collaborators, service providers and technical experts. The network then constitutes a platform for exchange and coordination between associated companies by accelerating the free flow of knowledge and using multiple resources in order to produce more value (Kogut, B. 2000).

Thoben and Jagdev (2001) emphasize the need for an enterprise to be integrated within the framework of a core competency network is to face the market competitive environment. According to them, the networking issue is gradual process taking into account the key competency factors of the integrated enterprises (focused factory based view) and the strategic objectives of the whole network (strategic based view). The two above considerations are set by respecting package of various attributes as it is presented by the below exhibit:

Figure 1. Enterprise network related attributes.

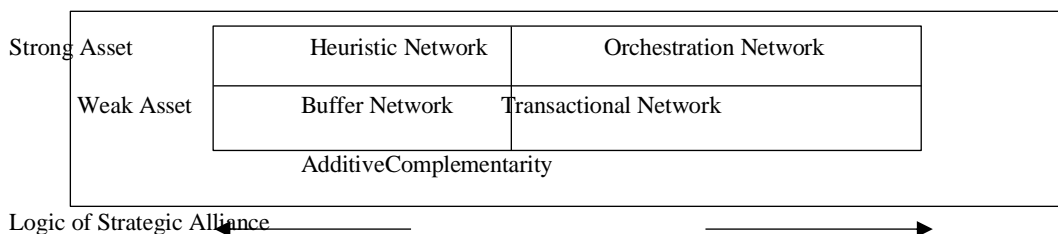


Source. Thoben and Jagdev in *Typological Issues in Enterprise Networks*, 2001, p. 427.

Within the framework of the network, the attributes are parameters for the nodes to be an integrated system which goes beyond the mere technical interoperability between the system components towards the integration and the networking view. This stage is reached through a high level of both cooperation and collaboration through contracts taking into account the minimization of conflicts existed between the opportunism of the partners. In addition to this, the attention is directed toward sustaining the long-term mutual relationships among current and potential partners whose resources are necessary to consolidate the core competency of the whole network. At the partnership based-view level, the network is based upon equal status partnership especially when number of partners is high. Under these circumstances, the partnership may take several forms like co-production contracts, collaborative production, complex marketing arrangement and R&D partnerships (Gianfranco Dioguardi, 2010). In this context, the partners are impacted by the duration of their

commitment to the whole network as well as the manner of the joint decision-making is processed. These two fundamental issues conduct the gradual development of the nodes' integration process within the network and its success to consolidate the general core competency and face the competitive forces. Indeed, to deal with the cooperation efficiently within the network framework, the nodes should coordinate and control according to the attributes of power, dependence and transaction costs. These attributes are strengthened by management norms like trustworthiness, commitment, solidarity, mutuality, flexibility, and integrity of roles. The melding of the commitment paradigm via the duration and the decision making process with the managerial norms should be undertaken within the network framework give result of two distinguished but interrelated kinds of integration aspects according to the asset characteristics and the integration logic as it is represented by the following exhibit:

Figure 2. The Network Types.



Source. The researchers based on Gerry Johnson et al, 2008, pp.300-306.

The characteristics of the assets coupled with the manner of how they are exploited make the networked enterprise qualitatively different from conventional enterprises. This difference is distinguished according to the issue of the businesses complementarity (horizontal integration) and to the contribution at the similar business (vertical integration).

- The alliance between companies whose businesses are complementary (horizontal integration) in which two types of networking are envisaged: the transactional network and the orchestration one. The former integrates companies that come together in order to pool skills and know-how of different kinds, but without necessarily creating specific links between them. It is therefore an exchange of relationships between specialized partners on the value chain, assuming shared resources, but few complementary resources are exploited except those directed to establish the common view of the common network (the network establishment phase). The orchestration network on the other hand represents companies or autonomous entities which cooperate as subcontractors under the government of a pivotal company. Their contribution is therefore complementary: one is interested by production; the other is responsible for the marketing of products, etc. This vision consolidates the possibility to have significant collective resources such as specific knowledge and shared capacities.

- The alliance between companies participating in the same business (vertical integration) which combines in its turn two kinds of networking: buffer network and heuristic network. The former cooperation associates similar or even competing companies have chosen to associate, by pooling their tangible and intangible resources in order to carry out a shared activity or project. These companies have the same vision in terms of needs and capacities. For example, the companies are joined together by sharing different services like

transportation to distant markets and as a consequence they achieve economies of scale or can solve a common problem.

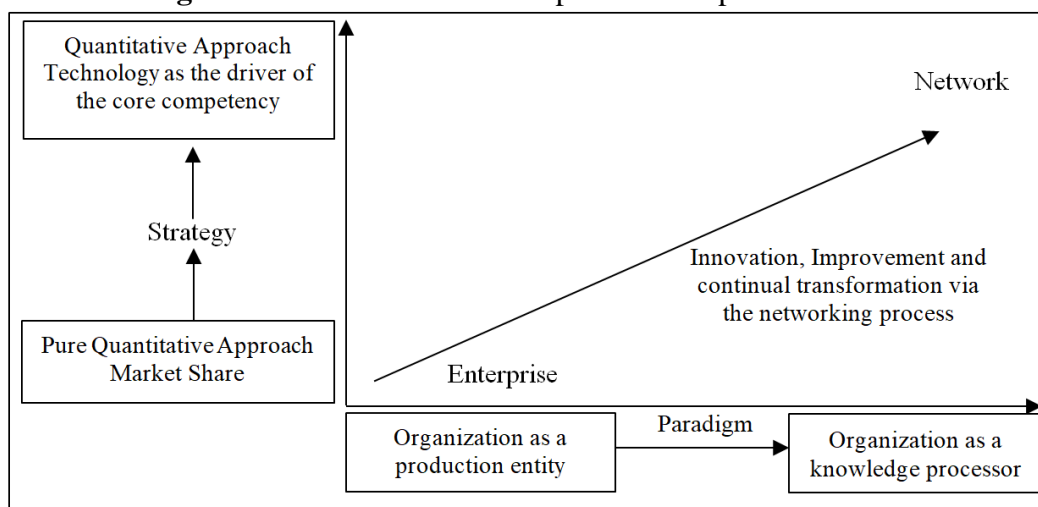
2. The Networked Enterprise as a Strategic Choice

Since the 1960s, the competition has undergone a profound transformation to become nowadays a real battle. As a result, the partnership relations are now a key competitive strategy. According to Nicolai J. Foss (2005) inter-company learning is important for competitive success, and companies often learn through collaboration with other companies. On the other hand, the opportunities offered by both globalization and the new cluster of innovations in information technology lead the partnership network to become the creator of inimitable advantage (Kazuyuki Motohashi, 2015) allowing the companies to operate in the last twenty years according to a basic strategic vision taking different forms:

- The environmental changes monitoring process: networking is a relevant response to the complexity of the environment. This also corresponds to the idea of Hervé Panetto et al (2012) who discussed the network adaptation capability to the new environmental and competitive conditions. In this context, companies that accept the new facts of global competition and changing markets are characterized by permeable boundaries. These companies are supposed to be fully involved in a strong relationship with their environment and be considered as efficient and competitive. It is therefore a new paradigm taking hold and a new sustainable way of working makes it possible in particular to reduce the vulnerability of companies faced with customer demands which the access to knowledge and information is a strategic resource (Shanting Wei et al, 2019)

- The business operations are increasingly relying on collaboration as a competitive strategy to act faster with fewer resources than their competitors. To deal with the vagaries of the market, the network plays an even more important role than all other forms of organization. According to Shanting Wei et al, (2019) the networking is a strategic process which consists in configuring the partners according to the business opportunities that the company aims to satisfy. It is characterized by diverse skills, geographically distributed and with reduced calendar availability, which allows the networked enterprise to respond to new working conditions, especially in a turbulent and highly competitive environment.

Figure 3. The Networked Enterprise Development Process.



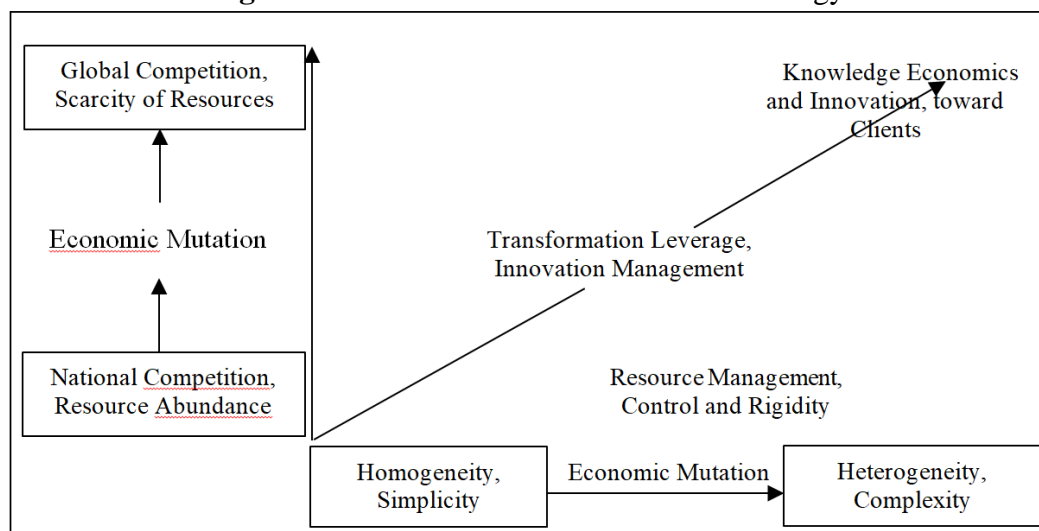
Source. The researchers based on Alain Verbeke, 2009, pp.151-159

Gianfranco Dioguardi, (2010) suggest that companies can stabilize in an uncertain and turbulent environment through cooperation agreements. It is therefore a question of creating a pole of competence, a space for constant dialogue with many of the partners, producing a rapprochement between conceptions and taking action. For this purpose, a professional group can intervene in different projects and create a force for reflection and action that easily promotes any restructuring process vis-à-vis the external environment. This strategy allows networked companies to react faster, thus leading to the exploration of new solutions. The more so as information circulates quickly and the means are diversified, the more possible to distinguish the networked enterprise from the competition and to increase the long-term value of the shareholders.

2.1. *The Network as an Innovation Strategy*

Due to the fierce competition, innovation has become strategic. The issue then is no longer a question of adapting but rather of changing the rules of the game. It is therefore widely accepted that the partnership network is designed to meet this imperative. In this sense, the company can build partnership relationships that give it the key skills to innovate (Sharath Sasidharan, 2019). This confirms Shlom Maital et al (2007) who advocated the crucial factor of innovation to overcome the market hurdles: “Organizations that fail to bring to market innovative products that create value for their customers will quickly find that their competitors have done so, and that their own existence is in danger”(p.43). Likewise, the knowledge of any industry is now very complicated and the sources of expertise are extremely dispersed; the fact that leads the dynamics of innovation be based on fundamentally on learning networks, rather than the sole companies taken independently (Sharath Sasidharan, 2019)

Figure 4. The Network as an Innovation Strategy.



Source. The researchers based on Gerry Johnson et al, 2008, pp. 296-305.

At the same level, Sharath Sasidharan, (2019) found that, in some industries, more than two-thirds of innovations come from the initial ideas and suggestions of customers. In other industries, the majority of innovations come from suppliers. According to Shlom Maital et al (2007), the network is a concept of social innovation that allows lasting success. With

effective skills and knowledge transfer mechanisms between partners, it becomes possible to bring more innovation to the company; and as a consequence, it tends to accelerate the release of a new product to keep its subcontractor. It is then a gradual moving process from the capacity subcontracting to the subcontracting of intelligence as the entity on the track to develop shared knowledge and information. The network is therefore a universe in which by sharing resources specific to each business, by stimulating the processes of all types of innovation and it is the cornerstone of the business-to-business partnerships through which the companies can fulfill their main objectives of integrating innovation in a complementary and systematic way.

2.2. The Network as an Internationalization Strategy

Many factors have in fact contributed to the outsourcing activities outside traditional workplaces. In the last few decades, the globalization of markets has come to the fore. The latter has profoundly changed the business environment. They had to adapt, forced to work in partnership in order to respond as best as possible to this growing competition. It is therefore a question of cooperation between companies to face up the global customers, demanding heterogeneous products and better value for money.

The impact of internationalization on businesses then followed the explosion of international business communities operating in cooperative mode. The companies have to be virtually everywhere to effectively manage their resources and know-how. As a result of networking and the appropriate innovation management, they become capable of carrying out the tasks fragmented in multiple places and diverse projects, often at the international level. In addition to this, the new wave of information and communication technologies helps in reducing the potential costs of exchanges and to facilitate the modulated use of skills, time and places of the different managerial tasks. It is therefore for all companies to integrate into international networks to quickly gain new market niches, in synergy with each other, thus initiating mechanisms of increasing returns from the characteristic of the new network economy (Alain Verbeke, 2009)

2.3. The Network and the Access to the Complementary Skills

It is important to note that the interaction between companies in the context of a network is based, among other things, on the need to access additional assets. This is the response generally used to explain the emergence of this strategic choice. More precisely, from the beginning of the 90s, companies which followed this strategic vision became more and more interested in intangible resources, and more precisely, they concentrated on information and knowledge as well as the sharing of ideas and experiences. According to John R. Schermerhorn, Jr. *et al* (2010) and Sanele Daniel Ngcobo (2022) the networked companies focus on external capabilities. Through increasing outsourcing, the companies can access specific skills especially those presenting a lack of expertise in the field of the activity in question. This issue is also related in particular to the easy access to essential finance for innovation and to reduce the risk associated with new projects.

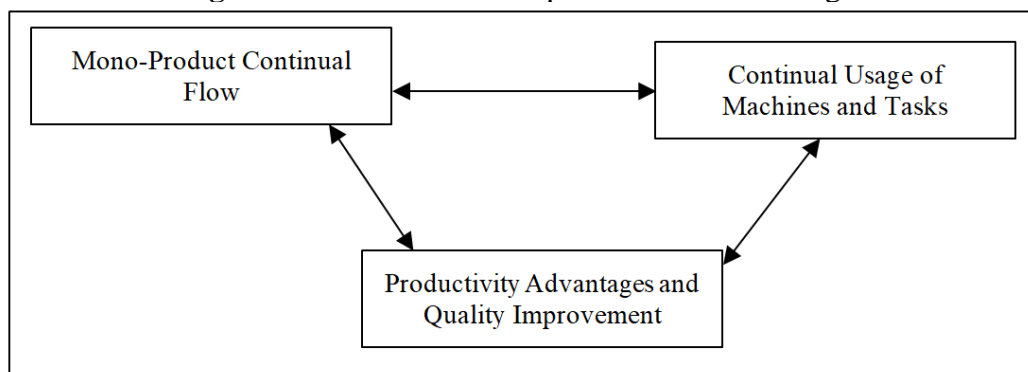
Partnership agreements are particularly favorable to the nascent companies that are entering the market. They allow them to access resources that would be impossible to mobilize on their own and to provide a partial overshoot of their respective markets. The networking process in addition to this enable the enterprises to integrate certain specialized skills or even cope with the daily technological changes which have a strong impact on the

sustainability issue. As a result, it constitutes for SMEs a key element of innovation relating to production and efficiency (Kai Mertins et al, 2016; Muh Rays et al, 2022)

3. The Network and Refocusing on the Core Business

Under the influence of various factors on the markets, the network allows the company to cooperate with partner about the activities not having much importance to the company strategy, or the possibility of carrying out itself. It concentrates its resources only on activities considered as strategic or bearers of values and outsources others that do not directly create a competitive advantage. At this level, the networked company can position itself on a single business angle defined by a set of skills allowing satisfying complicated and differentiated demands (Thoben and Jagdev, 2001; Mostéfaoui Sofiane et al, 2015). These specific skills allow the company to strengthen its competitiveness and differentiate itself from its competitors. These are functions like production, supply, commercialization, auxiliary services, R&D and innovation. In other words, this orientation towards a strategy of specialization, even of hyper-specialization leads the managers of companies to associate with others who excel each in a particular field; this situation allows achieving a better overall performance.

Figure 5. The Triad of the Specialization Advantages.



Source. The Researchers based on John R. Schermerhorn, 2010, pp.135-136.

The networking process is also a response to the need for a more flexible, leaner organizational structure focused on key business processes. The networked enterprise is therefore characterized by an increased centralization of certain key management functions as well as new forms of relationship between the central structure and the semi-autonomous and even independent decentralized production units. This allows the company, on one hand, to concentrate their scarce resources on their competitive advantage and, on the other hand, to grow quickly with little capital and a reduced managerial structure.

3.1. The Determining Factors of an Effective Network

According to Pradeep Kumar Ray, (2002), the strategic alliance needs to overcome a package of political, legal and organizational obstacles. In this regard, the network is a strategic option formalized by written conventions and agreements embodying in most cases the ethical dimensions such as commitment to honor, non-opportunistic behaviors, and shared interest based on the mutual trust as well that transparency. These elements and many others are taken into account in the partnership strategy. According to R. Schermerhorn, Jr. et al (2010) the trust in the networking process retain two dimensions:

- The moral dimension which represents the elements allowing each partner to have a positive behavior towards the others. It is an ethical dimension of trust (honesty, ability to keep promises, discretion, openness, loyalty). In this sense, we retain the social approach where trust is given by the social fabric within which the actors are integrated.

- The technical dimension which constitutes the qualities relating to the skills of the partners, their knowledge and experience in professional matters, etc. These elements are determined by capacity, which brings together all the skills and competences and expertise that the company attributes to its partners. In this perspective, cooperation and networking can perfectly result from a voluntary contract between managers who have rationally considered that cooperation serves the interests of their companies.

According to Hervé Panetto *et al* (2012) *trust* appears in the literature as an essential condition for the formation of alliances as well as an informal control mode which governs the actors mutually identified. Partners will have strong network connections and will be even more aware of the laws, routines, and procedures that each partner will follow.

Such a social structure can thus allow companies to work hand in hand, without the need for formal and costly follow-up represented by contractual agreements. In addition, it leads to lasting effective partnerships, particularly in logistics functions, transport, deliveries, supply, for which companies tend to form permanent alliances. The continual future collaborations are based fundamentally on the successful past partnerships.

The concept of trust is still crucial in network management because it allows rich exchanges, the development of a common language and above all a culture shared between companies. Xu Jiang *et al* (2013) introduced trust as a coordinating mechanism, along with price and authority. The price hits the market and authority is exercised within the hierarchy and trust helps to organize the network. It is therefore the most effective mechanism for the design, monitoring of results and sustainability of the partnership.

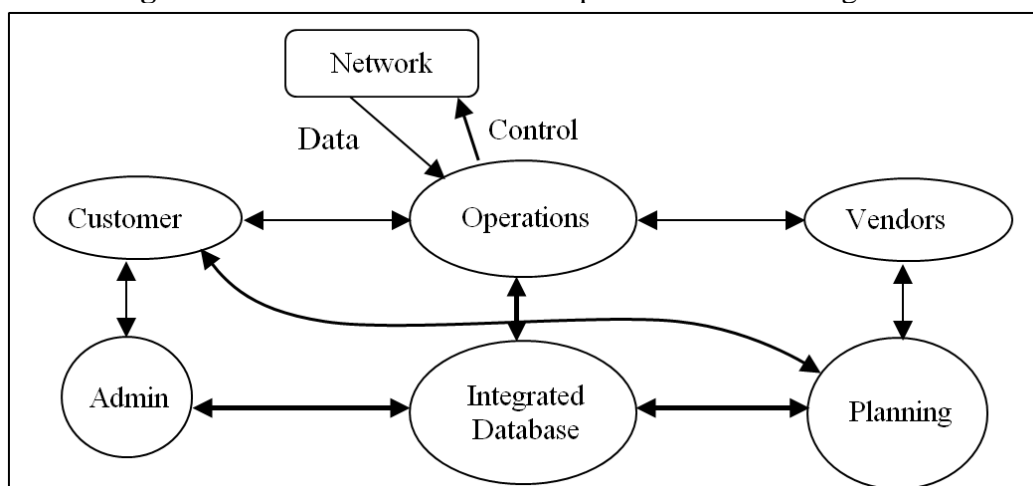
3.2. Communication between Network Members

The creation of a network climate requires above all the practice of transversal communication, by encouraging exchanges. It is also fundamental to strengthening transparency and trust between the members of a network. It allows everyone to know and understand in real time what other network members are doing. The network by this sense begins with the communication and sharing of documents related to common missions (quotes, diaries, contacts, etc.); it is also ensured by reporting the progress of projects and sharing concerns and thus setting up a collective learning process. In fact, the communication within the networking framework aims at breaking down the barriers of the networked organizations in an attempt to create a synergy between the partners and increase the efficiency magnitude to assume the different tasks. The advent of the information and communication technology mark its far-reaching impact on the organizations cooperate especially at the production industries level. According to Gianfranco Dioguardi (2010), the communication process is the baseline and the cornerstone of the networking process: “*In a very general sense, the network enterprise is an organization composed of an information technology network (computers and robots), guided by a network of individuals whose mode of operation can be captured by the term “self-entrepreneurs”*” p.1. In essence, the collaborative communication aiming at creating a sound network is a core competency in its own right because it directs the different partners towards the strategic objective of the whole network. In the same vein, Nicolai J. Foss (2005) emphasizes the crucial role played by the communication network as a key driver to the success of the organizational networking process. According to him, the communication enables the networked organization to be

efficient in taking the right decisions and distributing the different tasks and operations. In addition to this, the flow of information facilitates the management of the disturbances may occurred between the geographically distributed partners; and as result the network consolidates its competitive advantage over the other rivals. In this regard, the development of the information technology allows restructuring the architecture of the organization in accordance with the strategic objective of the network. This process depends on the flexibility and adaptability of the information circulated among partners. István Mezgár et al (2014) emphasized the crucial and positive role played by the communication process presented by cloud computing (CC) in alleviating the obstacles between the partners in terms of time, efficiency in dealing with the information and its applicability. According to him, the wide and rational adoption of the developed communication process provides many advantages to the networked organizations especially when they are geographically dispersed. These advantages are: more capacity of the network to focus on the customers in real time and more agility to take the right responses to the market trends changes; the communication enables the units of the network to share values, trust, transparency and integrity; the fact that leads to more interoperability between the units.

In addition to this, Pradeep Kumar(2002) presented the key drivers of a successful network in a heterogeneous environment. The components of the network according to him are: a help-desk support staff responsible for assimilating and treating the knowledge with the aspiration of the network, a detailed topology and configuration of the network devices facilitating the treatment of information and knowledge and a sound feedback process permits to relieve the dynamic congestion and the probable obstacles:

Figure 6. Functional model of Enterprise Network Management.



Source. Pradeep Kumar in Cooperative Management of Enterprise Networks, 2002, p.11.

A deep examination of the exhibit above reveals the importance held by the communication in smoothing the network process at two basic levels: level of production and architecture and level data and objectives' design (knowledge). The flow of information by the appropriate devices in a swift, flexible and pro-cyclical manner permits to establish an inside capacity for the network to expand more according the organizational values (trust, confidence and collaboration spirit) transmitted an understood through the communication process.

Conclusion

The paper attempts to present a conceptual paradigm of the networking process as a strategy enabling the companies to strengthen their core competencies and consolidate their market shares. It is by then the most suitable for describing the companies' relationships with their markets. Faced with the growing complexity of the current environment, managers have every interest in coping with it, playing the cooperation game and relying on the skills of their partners. This is undoubtedly one of the most dynamic strategies through which the efforts of the managers must focus if they want their companies to remain on the turbulent and competitive market. Although it is only a cooperative relationship based on shared interest, trust and transparency, which often creates more synergy and advanced management techniques (management by performance, total quality management, etc.) . In addition, it is about enhancing the pleasure of working collaboratively on a common project, by stimulating new fields of change and innovation so that the network is lastingly effective.

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