What is a Networked Business?

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Abstract

Due to increasing competitive pressure in their market, many enterprises are implementing changes to the way they conduct business. These changes range from implementing new IT, to redesigning the structure of the organization and entering into all kinds of cooperations with other enterprises, forming what we call a 'networked business'. In this paper, we try to explain the origin of the networked business from three different, but related, perspectives: resource dependence, transaction cost and IT impact. We also explore some terms that are used to describe interorganizational structures to find their principal components in an attempt to determine relationships between them and find a broad and precise, new definition of the term 'networked business'.

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Chapter 1

Introduction

Modern business markets are becoming more competitive, often due to global pressure. In response, organizations need to use innovations to create and sustain competitive advantage in order to create superior value for their customers and superior advantages for themselves [24]. Over the last few decades, we have seen that more and more companies use information technology beyond purely operational and management support. In particular, with the rapid advance of technology, firms have looked for strategic opportunities that computer networks linking organizations can provide. IT systems that cross organizational boundaries have been termed as interorganizational systems [01, 03]. Such interorganizational systems have functioned to blur the boundaries of today's organizations while they enable the flow of information from one organization to another [14]. With that goal of information flow in mind, *networked businesses* have been created.

But what is a *networked business*? Nowadays, we can find literature analyzing several aspects of the new nascent forms of business organizations. In the literature, we can find definitions of the new interorganizational structures that have both common and different components. That is why we consider it necessary to survey terms that are commonly used to describe interorganizational structures attempting to find a general definition of *networked business* for our conceptual framework in the VITAL[1] project. Additionally, we also summarize literature that tries to explain the origin of collaboration between organizations.

The paper is structured as follows. In Chapters 2 and 3, we will talk about the origin of the *networked business* from resource dependence and transaction costs theory perspectives, respectively. Chapter 4 discusses how the impact of IT on organizations could be a reason for the existence of the *networked business*. Next, in Chapter 5, we summarize some definitions of concepts related to *networked business* to clarify ideas around this term, and Chapter 6 discusses interrelationships among those concepts to help provide a new definition of the term *networked business*. Finally, Chapter 7 concludes the paper.

[1] See http://www.vital-project.org

Chapter 2

Resource dependence perspective

According to resource dependence theory, theory formulated in the 1970's by Pfeffer and Salancik [23], organizations decrease uncertainty and manage their dependence by creating formal cross-organizational structures that formalize their relations with other organizations. In such a condition, organizations begin to collaborate together for a common purpose.

The resource dependence model has its origin in the power-dependence relation theory of Emerson [09], and it is suited within the approaches that study the relation between the environment and organizations' performance.

In [20], Montoro Sánchez shows how resource dependence theory can be viewed as a perspective to explain and design a *networked business*. This perspective emphasizes the fact that no organization is self-sufficient; no organization is able to generate all necessary resources by itself. That is the reason why businesses need to be connected with other businesses to make trade-offs while they assure their survival.

The resource dependence theory analyzes two aspects: the factors that decide the degree of dependence of an organization with respect to others, and the actions taken to address that dependence [20]. The degree of dependence of an organization on others is determined by the significance or otherwise of the resources it needs to perform activities to create and sell its products or services. So, the organization needs to identify those processes it could best perform together with other organizations and to reinvent itself by establishing cross-organizational processes [05].

In summary, this approach holds that organizations must study themselves in relation to the organizations with which they want to share resources. In such a study, organizations need to give special attention to external control which they could face when their processes depend partially, or completely, on other organizations' resources.

Chapter 3

Transaction cost perspective

An additional tool that helps to explain the existence of the *networked business* is transaction costs theory, developed in 1937 by Ronald Coase [07]. The central claim of this theory is that the existence of transaction costs is the cause of the existence of companies.

Transaction costs theory can be contrasted to neoclassical economic theory. Neoclassical economic theory is principally concerned with abstract conceptualizations of markets. Neoclassical economists consider that the price mechanism acts as an instrument to coordinate the efficient allocation of resources. The term 'price mechanism' can be defined as the process by which changes in prices cause and determine changes in the value, and the products and services. Supposing that consumers decide they want to spend more on DVD players. So, more consumers are going to go to the stores hoping to buy DVD players. The stores see the higher demand, increase their prices, and also order more DVD players from producers. Higher profits from producing DVD players induce firms to expand production. Higher prices for DVD players are going to constrain the demand. Thus the situation returns to equilibrium with more production and purchase of DVD players, and less production and purchase of other goods. Thus "prices" act as a "mechanism" that guides the allocation of production resources to different economy actors.

In contrast, Coase sustains that transaction costs, and not the price mechanism, determine resources allocation. He defines transaction costs as costs derived from the necessity to negotiate and to make an individual contract for each transaction. In a simple way, we can say that transaction costs are costs caused by organizing a transaction [33]. Transaction costs are the costs of searching for the right alternative, and negotiating and enforcing a contract for that.

Organizations incur transaction costs when, instead of using their own internal resources, they go out to the market for products or services. In place

of buying a product on the market, the buyer (a organization) can decide to produce it in-house so, the buyer can save the costs of going to the market. In this case, the buyer creates a "company" (this means an entity, an organization) that takes care of the production of a good from the use and direction of certain resources. The buyer of a product considers the alternatives of "buying" and "producing" (to buy or to make), depending in each case on the costs of each activity: buying would lead to external costs of transaction, while producing would lead to internal costs of transaction or costs of administration within the company. This choice is mediated by authority, by an entrepreneur, rather than by the price mechanism.

Thus, the company is considered an alternative to the market in the coordination of the resources available in the market. It is taken into account as *"a system of relations that appears when the coordination of resources is under the direction of an entrepreneur"* [06].

So, according to the transaction cost theory, a transaction should be carried out in the most economical or efficient form. The efficiency implies the reduction of both the production costs and the transaction costs [32]. If we apply transaction cost theory to a *networked business*, the decision to participate in such a network comes from comparing transaction costs involved in joining to transaction costs involved in not joining and instead producing in-house.

Additional literature which helps understand this assertion is the literature related to markets and managerial hierarchies [19]. In that context, Williamson proposes two groups of conditions for the existence of transaction costs: conditions related to the behavior of the individual, especially those associated with the bounded rationality of the human being, the opportunism of the involved parts and dignity; and conditions related to the environment of the transaction, in particular, uncertainty about the future and the existence of small groups of companies with which to work jointly. In addition, the level of the transaction costs depends on asset-specificity and frequency of the transactions.

Williamson also studies the term "hybrids". He defines hybrids as: *"various forms of long-term contracting, reciprocal trading, regulation, franchising, and the like"* [34, p.280]. In this alternative form of economic organization, the buying company and the selling company establish, for the provision of a product, a contract with the conditions of the transaction (price, quality, date of delivery, and so on). A *networked business* can be considered as a kind of hybrid where not only two, but a set of companies are involved. However, a *networked business* can exist and work without the existence of a written contract, governing mutual relations on the basis of tasks' formalization. In comparison with the market, the annonimity disappears in the *networked business* environment, just as happens with normal contracts between companies.

At this point, we can say that transaction cost theory can be viewed as a base theory to think that the most economical and efficient form to carry out a transaction is by means of collaboration between organizations.

Chapter 4

IT impact perspective

Malhotra discusses in [17] that one of the uses of IT within organizations is to achieve external business communication goals. External business communication, as the term suggests, includes all the transmission of information and meaning that occurs in a business context, i.e., from a business to another business.

Over the last few decades, we have seen that more and more companies use information technology beyond purely internal operational and management support, but also for business communication. In particular, with the rapid advance of the technology, firms have looked for strategic opportunities that computer networks linking organizations can provide. These increasing interdependencies demand more flexible and adaptive organizations [18]. This is the origin of the *networked business*.

IT plays a significant role in reducing transaction costs; an organization may find it beneficial to grow horizontally. Some very large firms have taken advantage of IT to obtain such reductions in transaction costs, while also achieving scale economies in operations [13]. A *networked business* is an alternative to very large firms. Some firms have used their IT, and have invested on new IT, to form a *networked business*.

The reduction in costs is the initial motivation to think on interorganizational structures where IT facilitates the coordination between the organizations along the *networked business*. Nevertheless, IT also is itself a motivation to think on the origin of the *networked business*. We know that IT is a vital part of most organizations. We cannot imagine the existence of any significant company without information technology. This relation between IT and companies' existence conducts to think that if IT evolves, the company also needs to evolve by adjusting its structure to the new technologies, e.g. network environments where the sharing of information between organizations is a crucial factor to be competitive in the real world. In this regard, Tapscott [29] and Fulk and DeSanctis [10] remark that electronic communication, and computing power in general, stimulates change in business models. By business model, we mean the method of doing business: how the organization transacts with the environment

to create value [25, 26]. Then the business model of an organization determines its organizational structure [21, 25]. Consequently, we can find the relation:

IT $\leftrightarrow$ business model $\leftrightarrow$ organizational structure $\mapsto$ *networked business*.

We can also say that computer networks provided the basic concepts, and the necessary infrastructure, to begin to work in more horizontal organizational structures, namely *networked business* organizations.

Chapter 5

Review of existing definitions

In this chapter, we will look at definitions of eight terms that are commonly used to describe interorganizational structures. Sometimes, these terms are cited as similar to the term *networked business*. For that reason, we will try to find their principal components attempting to see if they are indeed similar, and to determine interrelationships among them.

5.1 Networked organization (Lipnack & Stamps)

We begin with the simple definition of a network. According to [15], a network is a web of free-standing participants cohering through shared values and interests; networks are decentralized organizations.

Having this definition in mind, the first compound concept we define is that of the *networked organization* (see Figure 5.1). It has been defined by Lipnack and Stamps in [16] as the state of affairs where independent people and groups act as independent nodes, linked across boundaries, to work together for a common purpose. A *networked organization* has multiple leaders, lots of voluntary links between participants, and interacting levels. By interacting levels, they mean levels of successive inclusion in which, like everything complex in nature, networks are organized. *"In the context of systems, which networks are, levels mean sets within sets like cells in tissues in organs in organisms"* [16, p. 52].

This term –*networked organization*– is more related to the concept of work teams within organizations. The *networked organization* is about how people can effectively work together within a variety of group contexts in an organization. However, this term can extend its borders beyond single enterprises because we know that the future of organizations depends on the collaborative work among directors, employees, suppliers, distributors, clients, government and competitors.

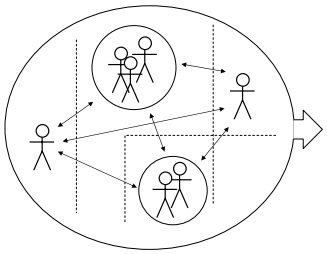


Figure 5.1: Networked organization.

5.2 Networked enterprise (Steen et al.)

Supply chains, electronic markets and virtual enterprises are all examples of *networked enterprises* (see Figure 5.2). The definition of this concept was conceived to be intentionally broad so as to cover all possible forms of interorganizational cooperation:

> *"A networked enterprise is any undertaking that involves two or more interacting parties."* [27, p. 1]

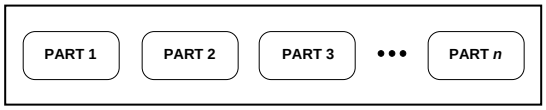


Figure 5.2: Basic representation of a networked enterprise.

Steen et al. use the term 'interacting parties' to refer to business units or organizations. This definition mentions the term 'undertaking' which consequently involves a purpose. This point is important for the next definition.

5.3 Virtual enterprise (Barbini and D'Atri)

As we just mentioned, Steen et al. mention in [27] that *virtual enterprises* are an example of *networked enterprises*. This term –*virtual enterprise*– (see Figure 5.3) needs to be defined as a separate term because people commonly refer to *virtual enterprises* when they want to talk about interorganizational structures.

> *"A virtual enterprise is a temporary network of autonomous firms dynamically connecting themselves stimulated and driven by a business opportunity arising on market. Every member makes available some proprietary subprocesses and part of its own knowledge. When*

the business opportunity is over, members disconnect and look for new businesses."[02, p. 2]

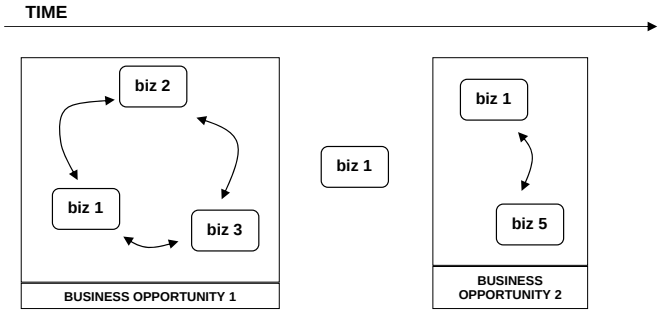


Figure 5.3: Virtual enterprise.

A *virtual enterprise* is commonly seen as reconfigurable and its boundaries are more blurred than other interorganizational structures. According to Barbini and D'Atri [02], a *virtual enterprise* is a kind of informal cooperation between organizations without tasks and structure formalization. We do not agree with this statement because we think formalization of tasks and most importantly structure are necessary for working in any kind of cooperation between organizations.

5.4 Extended enterprise (Barbini and D'Atri)

Barbini and D'Atri also state that an *extended enterprise* (see Figure 5.4) is another new interorganizational configuration. They describe an *extended enterprise* as a network of firms formally structured around a focal organization which deploys technology in order to manage the network to achieve a larger and more flexible supply chain.

> *"The development of an extended enterprise requires relevant investments on infrastuctures and on coordination agreements, hence it is usually intended to operate for long period of time."*[02, p. 6]

Besides the point of view of Barbini and D'Atri, we can mention that the term *'extended enterprise'* is usually used to represent the concept that an organization is formed not just of its employees and executives, but also its business partners, its suppliers, and its customers; where each party has equal participation.

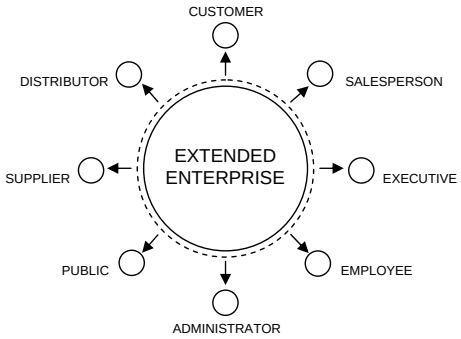


Figure 5.4: Extended enterprise.

5.5 Value constellation (Normann and Ramírez)

Having the definition of *extended enterprise* in mind, and since the value perspective is an important topic within the VITAL project, it also is valuable to define the term *value constellation* (see Figure 5.5). Normann and Ramírez introduced this term to define groups of enterprises that together satisfy a consumer need, where each enterprise uses its own expertise, products, and services [22].

They state that in the actual competitive environment, successful organizations are focus on the value-creating system, within which different actors – suppliers, business partners, customers – work together to co-produce value. *"To put it in another way, successful companies conceive of strategy as systematic social innovation: the continuous design en redesign of complex business systems"* [22, p. 65] to create valuable objects.

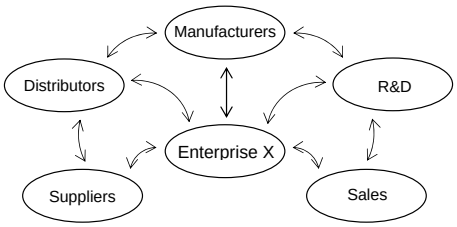


Figure 5.5: Basic representation of a value constellation.

Value constellations are a successor of the value chain. The value chain concept points that value is added, in sequence, by suppliers along the chain. According to Normann and Ramírez, that creation of value is not linear anymore, but it is done within constellations of organizations. Such constellations

focus on the products and services that actors exchange, and on more long-term-relations [11].

5.6 Joint venture (Lipnack & Stamps)

A *joint venture* (see Figure 5.6) is a traditional form of partnership, a minimal network, where two or more companies from a separate corporate entity join resources to work together [16]. We can say that in a *joint venture*: two or more companies agreeing to share capital, technology, human resources, risks and rewards in a formation of a new entity under shared control to pursue a mutual strategic goal.

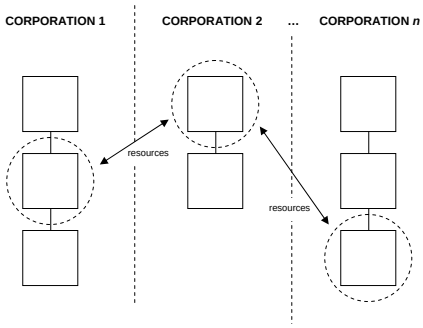


Figure 5.6: Joint venture.

In the Dictionary of Business and Management, we can also find that a joint venture is *"nearly always agreed for a fixed time-frame – commonly three to five years in the west, but often ten, fifteen or even twenty years in Asia –"* [35] with options for either terminating the venture or renewing it for a further period if participants agree on that.

5.7 Business webs (Tapscott et al.)

In [28], Tapscott et al. define *business webs* as fluid congregations or collaborations of businesses that come together loosely or in highly structured networks to accomplish shared agendas. Based on their research and on a large number of case studies, they argue that *business webs* are the new model for creating wealth in the new economy, digital economy, where businesses use the internet for their primary business communication and transaction goals. So, *business webs* are partner networks linked digitally to generate value for the customers and shared wealth.

5.8 Symbiotic partnership (Wigand et al.)

When an organization builds strong relations by integrating legally and economically other independent organizations as part of the accomplishment of its own tasks, such an organization is establishing a *symbiotic partnership* (see Figure 5.7).

> *"This integration creates reciprocal dependencies providing mutual advantage. In order to avoid or at least to limit the opportunistic exploitation of these dependencies by one partner, symbiotic arrangements are usually planned as long-term relationships."* [31, p. 209]

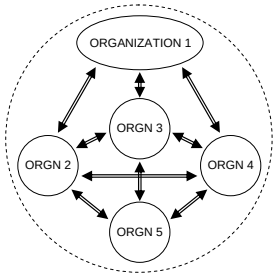


Figure 5.7: Representation of a symbiotic partnership.

The *symbiotic partnership* is characterized by reciprocity (one party helps the other in return for their help) and blurriness of boundaries and spheres of responsibility.

Chapter 6

Summary of findings

In this chapter, we summarize the principal elements that we can find in each of the eight definitions described in Chapter 5. With the analysis of those principal elements, we want to attempt to determine interrelationships among them to provide a broad and precise, new definition of the term *networked business* for our conceptual framework.

To achieve a significant summary of the interorganizational structures mentioned, we have established three 'indicators', namely the principal components found in the definitions: interaction of parts, common purpose and duration of coorperation. Table 6.1 summarizes our findings.

Table 6.1: Matrix concept-indicator, the summary of findings.

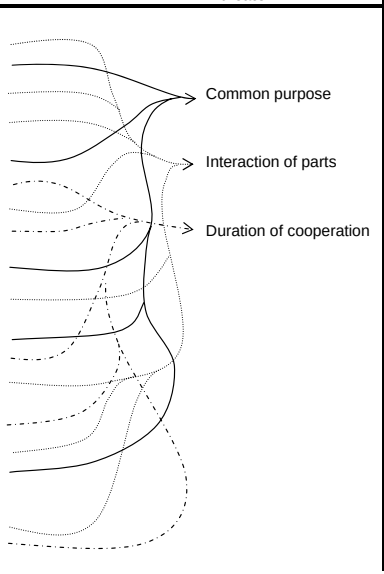
	Interaction of parts	Common purpose	Duration of cooperation	
			Short	Long
Networked organization	✓	✓	?	?
Networked enterprise	✓	?	?	?
Virtual enterprise	✓	✓	✓	✖
Extended enterprise	✓	✓	✖	✓
Value constellation	✓	✓	✖	✓
Join venture	✓	?	?	✓
Business webs	✓	✓	?	?
Symbiotic partnership	✓	✖	✖	✓

Legend: ✓ Term mentioned, or found, in the definition
✖ Term does not apply
? Term is not mentioned, a deep study is required

The indicator 'interaction of parts' does not need to be explained because it is a component that can easily be found in all the definitions presented in Chapter 5, which is not the case for the other two indicators. Table 6.2 shows

Table 6.2: Interorganizational structures and their principal components.

Concept	Principal component	Indicator
networked organization	• independent nodes linked across boundaries • work for a common purpose	
networked enterprise	• interacting parties	
virtual enterprises	• dynamically connected autonomous firms • business opportunity • temporary network	
extended enterprise	• network of firms • long period of time relation • achieving a more flexible supply chain	
value constellation	• groups of enterprises • satisfying a consumer need and co-producing value • long-term-relations	
joint venture	• two or more companies form a separate entity • fixed time-frame relation	
business webs	• collaboration of businesses • generating a shared wealth	
symbiotic partnership	• partnership between organ - izations • long-term relationships	



the eight terms described in Chapter 5 together with the principal components found in their definitions.

We begin with the indicator 'common purpose'. The definition of a *networked organization* literally mentions the term 'common purpose'. As Lipnack and Stamps claim, a common *"purpose is the vital spirit of a network expressed as a unifying aim"* [16, p. 41]. Most interorganizational structures require some well-defined motivation for formation. Participating organizations have their individual purposes and they need to formulate a clear-enough unifying purpose toward which they strive. This formulation is not an easy task since organizations are cognitive entities interacting socially. So, the problem of social interaction between cognitive entities is, according to Castelfranchi [04], how to obtain that another organization does or does not something? How to induce the other to believe and even to want to achieve the same of our organization?. The answer can be: communication.

However, communication can only inform the organizations' purpose. Communication does not assure the formulation of a unifying purpose. In order to formulate such a purpose, organizations need power over the other participants in order to influence them. Castelfranchi states that the most important basis of the power of an organization is the fact that probably also the actions of such an organization are potentially interfering with the purpose of the other participating organizations. Participants depend on other participants for their purpose. So, organizations can induce others to establish a social goal, a com-

mon purpose, which is the overall purpose of the participating organizations as a group.

The term 'business opportunity' found in the definition of *virtual enterprise* can be translated into a purpose. The same can happen with the *extended enterprise*, *value constellation* and *business webs* definitions because 'to achieve more flexible supply chain', 'to satisfy a consumer need and co-produce value' and 'to generate a shared wealth' are their specific common purpose, respectively.

The indicator 'duration of cooperation' can only be found in five definitions, namely the definitions of *virtual enterprise*, *extended enterprise*, *value constellation*, *joint venture* and *symbiotic partnership*. A deeper literature study is required to determine if this indicator could be related to the other definitions.

So far, we can already identify two points that we always need to have in mind in order to obtain our own idea of a *networked business*:

1 the essential parts of the definition

- common purpose
- interaction of parts
- duration of coorperation

2 the origin of the *networked business*

To be able to defend our own *networked business* definition remains the challenge. For that reason, it is important to consider these two points and the related terms when we listen, speak, discuss or write about this subject.

6.1 A new definition

Until now, none of these definitions has taken directly into account the IT viewpoint. As we have already asserted, the interorganizational systems have functioned to blur the boundaries of today's organizations. This is a starting point to think about the term *networked business*. In our context, networks exist when different businesses decide to cooperate by means of IT [30]. A networked business uses IT to integrate cross-organizational functions enabling the automation of coordination [08]. We can also say that a *networked business* is enabled by networking technology.

At this point, we can already talk about a *networked business* definition. In the VITAL research proposal [30], we can find that:

> *"a networked business is a network of profit-and-loss-responsible business units, or of independent companies."*

The term 'business units' is used because networks can also exist in large corporations that often consist of nearly independent business units that are all profit-and-loss responsible within the organization.

Considering the definitions that we have presented, and in order to have a complete definition of a *networked business*, we can extend and redefine the definition found in the VITAL research proposal:

> A *networked business* is a "mix-and-match" web of profit-and-loss-responsible business units, or of independent companies, connected by IT that work together for a unifying purpose for a specific period of time.

With the term 'specific period of time', we want to include the dynamic behavior of networks in this definition. We know networks are dynamic and can change from moment to moment. So, as we can find it in the definition of a *virtual enterprise*, organizations work together during the time that an interesting business opportunity exists. When the business opportunity is over, the networked business dissolves and participating organizations look for new business opportunities.

Chapter 7

Conclusion

We know that the contemporary complex competitive market is threatening the competitiveness of enterprises. Traditionally, enterprises are used to match environmental complexity by connecting themselves in networks where IT helps to have much more dynamic forms of cooperation.

Nowadays, we can find such a lot of literature concerning *networked business* and related concepts that it could be difficult to find a simple definition of the term. In this paper, we have presented the origin of the *networked business* from three different viewpoints: resource dependence, transaction cost and IT impact. We also explored eight other interorganizational structure concepts. Although all those concepts are used for horizontal interorganizational structures, their definitions do not always contain the same elements. Here, we identified these essential parts of the definitions to establish interrelationships among them. With such an analysis we could create a new definition of *networked business*.

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