Electronic B2B Markets as an e-Business Model. Empirical Study in the Spanish Construction Sector

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Abstract: In this work we analyze the development of electronic markets, or virtual vertical markets on Internet (VVMs), and whether these markets are becoming catalysts for networked inter-organizational relations. These VVMs allow for cooperation in e-commerce platforms, the virtual B2B platforms. We study the inter-organizational relations brought about by B2B VVMs, and to apply this study to a particular sector of activity in Spain: the construction sector. We intend to define, analyse, describe the characteristics, and explain, the VVM platforms, stressing the strategic and organizational role of each of the principal participating actors, with the aim of learning more about what are the sources of competitive advantage in on-line markets compared to off-line markets. We analyze the specific characteristics of the construction industry, by looking at the results obtained in the empirical study. Finally we discuss the results and conclude with their implications for theory and for this line of research.

1. INTRODUCTION

The importance of electronic commerce based on the Internet can be gauged by the expected business-to-consumer (B2C) e-commerce for the year 2001: around €460 million. In 2000 it reached €204 million. Meanwhile business-to-business (B2B) e-commerce will be €2.7 billion in the same period, and it is expected that 14,000 companies will be active in B2B in Spain in 2003 (AECE and MCYT, 2000; AECE, 2001a, 2001b; Baquia Inteligencia, 2001), with those sectors that are expecting most growth including information intermediaries, financial services, tourism, education and computing. However there are still entrance barriers to companies in the

The original version of this chapter was revised: The copyright line was incorrect. This has been corrected. The Erratum to this chapter is available at DOI: [10.1007/978-0-387-35617-4_48](https://doi.org/10.1007/978-0-387-35617-4_48)

digital economy in Spain: among which we might mention the lack of company culture with regards to e-commerce, consumer habits, security and the absence of a legal framework. There have also been many studies analysing the various implications of information and communication technologies (ICT), in general, and the Internet in particular, on organizations. This study will focus on electronic organizations and markets, and on business models based on the Internet. There has been a lot of previous work on B2B e-commerce and market structure, and much of this analysed relations between buyers and sellers and the role of intermediaries (Bailey and Bakos, 1997; Bakos, 1997, 1998; Brynjolfsson and Smith, 1999; Sarkar, Butler and Steinfield, 1997; Smith, Bailey and Brynjolfsson, 1999; Steinfield, Kraut and Plummer, 1997; Wigand and Benjamin, 1997; Steinfield, Chan and Kraut, 2000). These studies were based on previous debates about the function of IT and electronic communications networks, about relations between companies, and transaction costs (Bakos, 1991; Bakos and Treacy, 1986; Malone, Yates, and Benjamin, 1987, 1989). The use of these computerized inter-organizational networks (Van de Ven and Ferry, 1980) leads to lower transaction costs, which encourages the development of electronic markets, where there is a fierce price competition and greater consumer choice.

We intend to analyse in this work the development of companies which specialize in the creation, development and maintenance on the Internet of electronic markets, or virtual vertical markets (VVMs), and whether these markets are becoming catalysts for networked inter-organizational relations. These VVMs allow for cooperation in e-commerce platforms, which are known as virtual B2B platforms. They are designed jointly at the sectorial level, and so operate vertically. They become authentic business communities which fulfil the needs of many companies, and facilitate the creation of value added among them. The literature on electronic B2B markets is still scarce, although there are studies that analyse the creation of value in general in business models for e-business (Amit and Zott, 2001); or the characteristics of electronic B2B markets, for example in the inter-bank on-line currency market (Zaheer and Zaheer, 2001); or in particular analysing a market maker like TRADE'ex in the computing industry (Klein and Quelch, 1997), among others. Recent studies have focussed on e-business knowledge networks (Warkentin, Sugumaran and Bagna, 2001), or the behaviour of the Internet user in the context of B2B industrial purchases (Gattiker, Perlusz and Bohmann, 2000). Also, in the construction sector studies have been carried out on the redesign of the processes of design and purchase via e-commerce in the sector (Elliman and Orange, 2000). Considering all the previous studies, we can give our research a theoretical basis in the economic, organizational and strategic focus and resource dependence theory, in order to study e-hub business models in the context of e-business and the digital economy.

The objective of this study is to analyse the inter-organizational relations brought about by B2B VVMs, and to apply this study to a particular sector of activity in Spain: the construction sector. We intend to define, analyse, describe the characteristics, and explain, within the theoretical framework, the VVM platforms, stressing the strategic and organizational role of each of the principal participating actors, with the aim of learning more about what are the sources of competitive advantage in on-line markets compared to off-line markets. In order to do this we shall take into account the concept of business model, a line of research already followed by Amit and Zott (2001).

Considering the fact that there have been no previous empirical studies of this type in the Spanish context, and the scarcity of similar studies internationally (Klein and Quelch, 1997; Gebauer and Scharl, 1999; Voordijk, 1999; Dai and Kauffman, 2001; Gregor and Johnston, 2001 and Hengst and Sol, 2001), we will concentrate on only one sector, the construction industry. This choice is justified firstly by the economic importance of the sector in Spain (Seopan, 2001a, b), and in Europe as a whole; and secondly by the relatively advanced development of VVM platforms in this sector, in the form of consortia of industrial buyers². Subsequently we shall discuss the theoretical framework of the research, with the aim of schematising the various possible theoretical perspectives. Then we identify the studies in the literature that throw light on electronic markets or VVMs as business models, and after analyse the specific characteristics of the sector in consideration, the construction industry, by looking at the results obtained in the empirical study on VVMs in this sector. Finally we discuss the results and conclude with their implications for theory and for this line of research.

2. THEORETICAL PERSPECTIVES

In the current competitive environment, and more precisely in the virtual environment that is the Internet (Rayport and Sviokla, 1995) companies can develop various strategies which have been termed *business models* (Amit and Zott, 2001), among which are the inter-company vertical markets based on the Internet (VVMs). These vertical markets can be seen as an option of organizational design which companies are adopting to respond to new environments and provide solutions to the requirements of the digital economy. As Hall (1996) point out, none of the explanations or perspectives in Business Economics can be sustained on its own: each one has its own perceptions and applications. Thus it is necessary to apply them in combination, instead of providing explanations that compete amongst each

other. In this way a broader explanation combining the perspectives can be provided. This combining of perspectives is common in the literature on e-business (see, for example Amit and Zott, 2001). In particular VVMs can be analysed on the basis of the theoretical framework that is, in part from the economic, organizational and strategic perspectives, and resource dependence theory, which will be examined in this section; and in part from stressing the strategic perspective: VVMs as business models based on the Internet – the particular focus of this study – in the context of e-business and the digital economy. We shall study this in the following section.

In the context of the digital economy we might point out that in recent years companies have been developing inter-organizational networks as a reaction to the extremely competitive environment which is current (D'Aveni, 1994). This tendency can be studied from the following perspectives: *Economic Focus* (the development of inter-organizational networks with the aim of minimizing transaction costs, according to transaction cost economics (Coase, 1937; Williamson, 1975, 1979, 1985, among others)); *Organizational Focus* (the study of inter-organizational networks as an option for organizational design (Miles and Snow, 1986, 1992)); *Strategic Focus* (the use of inter-organizational networks in order to gain cooperative and strategic rents, according to the theory based on resources (Wernerfelt, 1984; Barney, 1986; Rumelt, 1987; Amit and Schoemaker, 1993; Peteraf, 1993), leading to strategic networks (Jarillo, 1988, 1993)); *Resource Dependence Theory* ((Aldrich and Pfeffer, 1976; Pfeffer and Salancik, 1978), inter-organizational networks can be studied as a mechanism of adaptation or response to external environmental restrictions, via the development of a controlled and regulated social environment that limits the effects of the external environment, developing into network analysis (Benson, 1975)). As Voordijk (1999) showed, in his case in analysing the use of EDI³, the use of transaction cost economics is not sufficient to analyse the network relations that arise in the logistics of the construction sector when a new technology is applied, strategic approaches must also be considered, since the agents involved are looking for advantages in the development of their own platforms. It is also necessary to consider how the logistic networks are types of cooperative organization, making it necessary to emphasize the Organizational Focus.

3. ELECTRONIC MARKETS AS BUSINESS MODELS

The development of ICT, and more precisely its application to the business world, is consolidating an economic sector known as the digital economy (Zimmerman and Corner, 1999, 2000; Zimmerman, 2000), based on the digitalisation of information and in the ICT infrastructure associated with it. This sector includes the goods and services whose development, production, sale or supply depend critically on the digital technologies (Kling and Lamb, 1999). The digital economy is affecting the companies or organizations, localization decisions, size, organizational structure and relations with other companies, market structure, prices of goods and services and the characteristics of the labour market, among others (Haltiwanger and Jarmin, 2000). For its part, the development of the so-called e-business is at the heart of the digital economy, since it allows for the creation of new markets and economic activities characterized by the flow of information on-line, changes in the dynamics of the markets, the emergence of new intermediaries, new economic rules or principles, such as the law of digital assets, new economies of scale, new economies of reach, a reduction in transaction costs, a balance between supply and demand (Rayport and Sviokla, 1995). In this way we can say that e-business consists of *redefining the processes of the company, inter-connecting them with those of its partners, clients and suppliers* (Hackbarth and Kettinger, 2000). That is, it means re-organizing the company so that it has the capacity to interchange goods, services, money and knowledge digitally, in other words, using ICT based on the Internet. In this context, the following can be considered to form part of e-business (Riggins and Mitra, 2001): a) Intranet B2E applications; b) business-to-business (B2B) applications, that is, e-commerce for the interchange of information and knowledge between companies; c) business-to-consumer (B2C), or the on-line ordering of products and services, the interchange of information about products, the joint development of products, customer services etc. In this context, companies need to develop new strategies to adapt themselves to their environment and new business models, so that they can effectively respond to these changes (Shaw, 2000). With relation to the typology of strategies on the Internet, it should be remembered that the company can either complement its activities in the real world by others developed in the virtual world, or indeed substitute them by new activities. In this sense, Song and Zahedi (1998)

distinguish between the following strategic options: strategy of substitution and complementary strategy.

Focussing on the business models, these can be defined as an architecture for the product, service and flow of information, which includes a description of the actors and roles that they play in the model, a description of the potential benefits which they generate for the different actors and a description of its sources of income (Timmers, 1998). We follow the proposal of Amit and Zott (2001, p. 511), who consider the business model as a unit of analysis, and they define it as follows: *a business model represents the content, the structure and the government of transactions designed to create value by exploiting business opportunities.*

Within the different types of business model based on the Internet, traditional as well as new, in our study we focus on those models known as “intermediation. These are companies that put buyers and sellers in contact and so facilitate transactions on the Internet. They normally obtain a commission for each transaction in which they intervene. The following types of models can be found (Rappa, 2000): Vertical Markets (Business-to-Consumer): these are intermediaries that base their activity on the management of information. Consumers have reduced information costs in transactions when they use their services; Electronic markets or virtual vertical markets (B2B VVMs): these are digital intermediaries which focus on an industry or specialize in a particular function or functions. They allow the interchange of information between buyers and sellers, facilitating the transactions and reducing transaction costs, among other benefits; Vertical Web community: website that offers information and relevant contact addresses for the agents of a particular sector; Buyer Groups: these are on-line businesses that group together a large number of buyers all interested in the same product, since by combining demand they can benefit from improved conditions from suppliers; Distributor: catalogue which contains a large number of products; Virtual Shopping Centre: this is a group of electronic shops under the same distributor, improved by adding a common and guaranteed method of payment; Metamediary: this is a virtual shopping centre in which transactions are managed (orders for buying and selling, payments etc), the consumer is protected and their satisfaction from the seller is guaranteed. These new intermediaries operate in the so-called *meta-markets*: it is very important to analyse these because they may explain the function of the intermediaries of the future; Auctions: sites which manage bids for all sorts of products on sale. The sellers may be private individuals or companies; Inverted Auctions⁴: In this business model the intermediary manages the sale of a product and/or service, with the buyer fixing the price. Subsequently the sellers make their offers, adapting them to the predefined conditions; Classified Ads: lists of items corresponding to the supply or demand of products. The fee of the intermediary tends to be fixed per advertisement, not per transaction; Search Engines: Intelligent software that

localizes the best price for a specified product or service on the Internet, although they can also serve other functions.

At this point we will focus on electronic markets or virtual vertical markets (VVMs), which in recent years have been increasing in number internationally in different sectors (Dai and Kauffman, 2001) and which from our point of view constitute an important object of study for the analysis of inter-organizational relations in networks and cooperation strategies. What is more, VVMs are promoting this, by acting as catalysts in the different sectors, because of the various advantages that they provide. These markets arise from the evolution of B2B e-commerce starting from their own systems based on EDI: which are closed, costly and not scalable, and finishing with the current possibilities where many buyers and sellers can connect between themselves using Internet based systems (Warkentin, Sugumaran and Bapna, 2001). In this sense Klein and Quelch (1997), Rappa (2000), Zysman and Weber (2000); Kenney and Curry (2000) and Shaw (2000), among others, assert that the diffusion of the Internet and of e-commerce has lead to the emergence of new business models as complements or alternatives to existing business models, as we suggested earlier, and that one of these business models is electronic markets, also known as *market makers*, MMs, or *e-hubs* or, by some authors, *Vortals* (integrated vertical portals which serve a particular industry) (Warkentin, Sugumaran and Bapna, 2001). These MMs are a viable business model using e-commerce and they consist, basically, of the union of buyers and sellers via the creation of an on-line market, directed at the B2B sector (Klein and Quelch, 1997). The principal potential of this business model lies in their intermediation in inter-company transactions, a function realized by the companies that develop them, that is, the *cybermediaries*, or virtual intermediaries in particular industries. Another advantage is the reduction in transaction costs.

An electronic market represents a virtual place where buyers and sellers come together to interchange goods and services (Segev, Gebauer and Färber, 1999). A similar idea is the *meeting point for collaboration (e-hubs collaboration)*, which is a platform on the Internet where all the agents in the supply chain of an industry (suppliers, manufacturers, importers, exporters, distributors, intermediaries etc), interchange information, carry out transactions and collaborate (Kalakota and Robinson, 2000). The advantages of this include the following: new formulas of interchange between partners; better coordination between supply and demand and reduction in the execution times of processes; creation of barriers to entry; etc. E-hubs are defined as intermediaries based on the Internet concentrating on one industry or on one specific business process, which combine supply and demand and reduce transaction costs⁵ (Kaplan and Sawhney, 2000). Some e-hubs are created by new entrants, and in other cases by consortia of the biggest participants in the industry (Riggins and Mitra, 2001).

4. EMPIRICAL STUDY

In the theoretical context we have proposed for our research, and which we have briefly described above, our aim was to carry out a study at the national level concerning the VVMs which are developing in the various industries, either as new entrants or as consortia of buyers or sellers. In this work we present an explorative study focussing on the construction sector in Spain, whose importance in terms of income or number of companies is evident. The Gross Value Added of the construction sector represented 8% of GDP in 2000, which also employed 11% of the working population. In terms of production the sector provides 14.6% of GDP. In the medium term it is predicted that there will be greater growth in construction than in the economy as a whole. Technological evolution will be a challenge for the sector in the future because “in the future only the most innovative companies will be able to remain in the market and enjoy continued success” (Seopan, 2001a). In comparison to Europe, the Spanish market was the fifth most important in the EU, with 10% of the total, after Germany (26%), France and Italy (14% each) and the United Kingdom (12%). As far as ICT in the sector is concerned, and especially with regards to the Internet, for the launching of the portal Construred Global (see www.construred.es) a study was carried out by Quota Union (of the Sigma Dos group), with the aim of investigating the level of Internet use in the companies of the sector, as well as the level of knowledge about services for the sector in the Internet, as well as e-commerce related to the sector. A total of 989 telephone interviews were carried out between 9th and 26th May 2000, with managers or commercial directors from companies in the construction sector with registered offices in Spain (confidence level 95.5%, sampling error $\pm 3.15\%$ for all the data), with the following results: mean number of computers per company in the sector: 6; 80% of the companies have less than 5 computers, and 8% have none; among the people who use the Internet (60% of those interviewed) the most frequent services are, in order: e-mail (84%), web navigation (55%) and news services (20%). It is interesting to note that 40% of those interviewed do not use the Internet at work. Only 3% of those interviewed knew anything about services for the construction sector available on the Internet. There are no significant differences between large and small companies. The information services mentioned were the following: *construnet*, *construcdatos*, *soloarquitectura.com*, *provia*, *cecot*, *Gremio ConstructionTerrasa* (Construred, 2001).

In the empirical study we have followed, on the one hand the approach of Nouwens and Bowman (1997), among others, who analyse the role of ICT in the creation of networked organizations in the context of e-commerce, providing a methodology of analysis; and on the other hand that of Klein and Quelch (1997), among others, who analyse the role of creators of B2B markets based on the Internet, providing a method of empirical analysis of the role of these agents, with the aim of describing their functions. In the first place we identified the cases to form part of our study, by using secondary sources such as the specialist economic press and the portal <http://www.ibermarkets.com>. Then we analysed the various websites of the projects, with the aim of finding contact e-mail addresses and direct information about the different initiatives. Subsequently we sent questionnaires to the managers in charge of the various initiatives or projects that we had information about, contacting 14 VVM projects or initiatives, portals or virtual vertical markets, or e-hubs, in Spain. We received seven valid responses. As in other cases where there are no official statistics, and what is more in this case due to the lack of previous studies, it is not possible to know the total population, so that it is necessary to regard the study as explorative⁶. The variables that have been analysed in the empirical study (see Table 1) correspond to four groups designed after previous empirical research, from, among others, Klein and Quelch (1997); Gebauer and Scharl (1999); Voordijk (1999); Dai and Kauffman (2001); Gregor and Johnston (2001), and Hengst and Sol (2001).

Variable Groups	Description
Identification Variables	<ul style="list-style-type: none"> * Registered Name * Year the company was founded * Activity carried out by the company * The position the interviewee occupies in the organization * Year the project was started * Geographical area of activity * Type of project
Dynamic Network variables ⁷	<ul style="list-style-type: none"> * Users must become members * The project selects its members * Elements which make up the network: type * Elements which make up the network at present: number * Elements which will comprise the network: forecast * Property of the network: % share capital
Strategic Variables ⁸	<ul style="list-style-type: none"> * Sector of activity at which the project is directed * Knowledge about other similar projects (competitors) * Alliances between companies * Functions of VVM * Alliance with a financial entity to guarantee the security of the transactions * Format of the negotiation

Profitability Variables ⁹	* Initial investment
	* Source of income
	* Value of transactions (in monetary units)

Table 1: Description of the variable groups

5. ANALYSIS OF RESULTS

As we noted earlier, the empirical study has an explorative nature, although we are able to comment on some of the results. With respect to the identification variables¹⁰, the companies define themselves as intermediaries in the construction sector, B2B vertical markets, and the majority were founded in 2000. The interviewees occupy the following positions: Director, Chief Executive and R&D Director. The majority are projects still in the development phase: three of them started in 2000. As far as the dynamic network variables are concerned (see Table 2), we should point out that the number of members of the network is very high: this type of project seems to be attracting a large number of agents from the sector, manufacturers as well as suppliers or distributors, associations, architects or professional schools. Table 5 shows the number of companies that currently form part of the networks, as well as the number forecast by the broker. We should also mention that a majority of the members are new entrants to the sector, since they control all the share capital. There is one exception, in which the share capital is shared between 29 companies which form a consortium of buyers. Another interesting point is that in the majority of cases users must become members in order to be able to accede to the VVM services, and that the VVM selects its members.

Variables	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
Elements that currently form the network: number	8,000	1,700	100	712	7,000	300,000	Confidential
Elements that will form the network: forecast	15,000-20,000	25,000	1,000	10,000	14,000	300,000	Confidential
Property of the network: % share capital	100%	100%	100%	Among 29 firms	100%	100%	100%

Table 2: Dynamic network variables

As far as the group of strategic variables is concerned (see Table 3) we should stress that only two cases are the result of an alliance between companies. Also, the fact that no financial entity is taken in as partner to guarantee the transactions.

Variable		
Sector of activity at which project is directed	Construction	
Knowledge about other similar projects (competitors)	YES	6
	NO	1
Alliances between companies	YES	2
	NO	5
Alliance with some financial entity to guarantee transaction security	NO	7
Format of the negotiation	Relation buyer-seller (1-1)	6
	Auction	4

Table 3: Strategic variables

With regards to the negotiation between buyer and seller, the VVMs facilitate contact between the parties with the aim that this take place directly. Or alternatively, in four cases it combines demand, intermediating in the negotiation by way of an auction. As far as the functions of the VVM are concerned, these can be enumerated as follows, in order of importance: facilities for communication in the market; providing news/information about the market; carrying out auctions; processing orders for buying and selling; catalogue of products and services; management of large purchases; service for supporting websites; follow-up of sale negotiations; pledge of compliance with transactions; reduction of credit risk; classified ads; financing of operations; logistic services (product storage, sending/reception of orders,...), after-sales follow-up of transactions. For the profitability variables it can be seen that the initial investment in these projects must be significant (the average is €960 million), and that the volume of transactions is already quite large (average €746 million). The sources of income of the VVMs are, in order of importance, the following: creation and storage of catalogues; sale of technology; commissions on transactions for buyers; system enrolment fees for both user types; membership fees; publicity in the portal; system enrolment fees for sellers; commissions on transactions for sellers; commissions on transactions for both user types; income from logistic services. The activity of the projects focussed solely on the construction sector, and they provide various services, among which: processing of sale orders; catalogues of products and services; management of large buys; facilities for information and communication about the sector; logistic services; auctions etc. With regards to the variables related to profitability, their sources of income are varied, being, among others, the

following: publicity in the VVM; membership fees; commissions for transactions; sale and hire of technology; creation and storage of catalogues.

6. FINAL OBSERVATIONS

As we suggested at the beginning of this work, this investigation is of an explorative and descriptive nature, and its aim is to describe electronic markets or B2B virtual vertical markets, in particular the construction *vortals* in Spain. For this reason we have briefly introduced part of the theoretical background for the analysis of the development of B2B platforms, from the perspective of inter-organizational relations, from that of the digital economy, and from the approach of VVMs as business models. It is a field in which there has been little research internationally, and even less referring directly to Spain. Nevertheless we think that it is interesting to analyse it, not only for the potential strategic implications that VVMs may be having in the different sectors, but also because they are producing internal changes in the companies involved, as companies strive towards the integration of technology and applications, that is, design and develop e-business strategies.

Among the most important discoveries is the fact that the companies which develop these VVMs are recently-founded companies: the majority were founded in 2000. The geographic area in which they operate is international, and the majority define themselves as B2B vertical markets. Using the terminology of Song and Zahedi (1998), these VVMs operate following a strategy of substitution (since they focus their activity solely on electronic markets), while the companies that participate in them follow a complementary strategy. As far as the different specific VVM strategies are concerned, these are characterized by the functions that each one realizes, and we consider that the differences between them derive from them being at different stages in their evolutions, as Klein and Quelch (1997) point out. With regards to the future viability of these VVMs, there is still not enough relevant data suggesting that they will be profitable, considering the initial investment and the global income figure that they are currently achieving. The already mentioned study by Voordijk (1999) analyses the construction industry in the Netherlands from the perspective of transaction cost economics, focussing on logistic activities. It concludes that the reduction in transaction costs is an important reason for the implementation of EDI systems in the supply chains of the sector. This is also observed in our study with regards to the functions of the VVM, where what stand out most are the facilities for communication in the market, the provision of news and information about the market, contacts via auctions and the processing of buying/selling orders and catalogues of products and services, among others.

Among the limitations of this study the most important is the fact that the absolute number of VVMs which responded to our questionnaire is not very high, although it is 50% of the projects identified in the construction sector. In the future broader studies will be necessary, that help to describe B2B electronic markets better, and their strategic implications, such as the potential increase in negotiating power of customers, due to the consolidation of consortia of the main buyers in a sector, or the establishment or not of barriers to entry, as a result of the creation of inter-organizational networks in the sector.

7. ENDNOTES

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- ² See <http://www.ibermarkets.com>.
- ³ Electronic Data Interchange.
- ⁴ The buyers fix the price and the supply adapts to it.
- ⁵ These are vertical portals that generate income via B2B interchanges, for example the portals VerticalNet, PlasticsNet.
- ⁶ The sample analysed is not random or empirical in its modality of intentional sampling, perceptual, (Ander-Egg, 1982), valid non probabilistic strategy for gathering data, especially for small and very specific samples, such as in our case (González Rio, 1997). Within this modality a sampling has been applied with strategic informants in order to access those people with direct information on initiatives in Spain, of the sampling subtype snowball, also known as chain, used to access special populations (Miquel et al., 1997).
- ⁷ These variables are designed to find out the characteristics of the network formed around the portal.
- ⁸ This is concerned with questions related to the strategy of the portal, with regards to alliances with other companies, and the functions of the network. Consideration of these functions is based on the proposal of functions, due to Klein and Quelch (1997), who analysed *market makers* in the US.
- ⁹ Directed at finding out the portal's specific investment and sources of income.
- ¹⁰ Companies, as in other cases, are reticent about providing answers to the questionnaire under their own names, since it would be possible to deduce a particular strategy from them. We shall therefore refer to them anonymously and in combination.

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