The development dynamics of business networks: A comparison among Wines of Brasil (Brazil) and Vitrocristal (Portugal)

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Abstract

Purpose: this study compares the development dynamics of two business networks initially created to promote the internationalization of its members. Wines of Brasil (WoB) – a Brazilian wineries network – was established in 2002 and remains active, while Vitrocristal (VtC) – a Portuguese network of glass producers – was established in 1994 and is already closed.

Methodology: Data were collected from 14 interviews, with network managers and representatives of companies with different sizes and participation times. Information obtained was compared with the life cycle model of Wegner et al. (2015) and enabled us to understand the dynamic development of each network and its current stage in the life cycle.

Findings: The results allowed us to describe the development pattern of both business networks, showing that the Brazilian network is in the consolidation stage while the Portuguese one finished its activities in 2007 after a period of financial constraints due to the end of governmental support.

Practical implications: The comparison of the two cases shows that the experience of the Portuguese business network may be useful for networks in emerging markets, as it displays several difficulties that the management of such networks may face during their life cycle.

Originality: The study provides a more comprehensive and nuanced understanding of the dynamics of change in business networks. The cases confirm the life cycle stages proposed by Wegner et al. (2015) and shed more light on the development process of business networks, by describing how exogenous variables such as public support may affect cooperation.

Keywords: networks, network life cycle model, public support to networks, case studies.

Introduction

Firms establish business networks to achieve common goals, such as strengthening their competitive positions or developing strategic resources (Makipaa, 2008). Such business networks are an important organizational strategy to support firms that want to develop innovations, access new markets and accelerate their process of internationalization. In emerging countries like Brazil networks play a relevant role and flourish in several industries. For instance, Rede Petro brings together more than one thousand Brazilian firms and research institutes focused on innovative activities in the oil and gas supply chain (Rede Petro Brasil, 2017). In the footwear industry, Total Shoes by Brazil gathers nine firms and suppliers whose aim is to develop new products and reach international markets (Assintecal, 2017), while Costa Esmeralda puts together more than twenty hotels located in Southern Brazilian touristic destinations (Costa Esmeralda, 2017). Similarly, business networks exist in a large number of retail and service sectors and make up the competitive landscape.

As for the case of Portugal, groups of firms can be found in several sectors as well. One of the most well-known experiences of issue-based networks is Apiccaps (Apiccaps, 2017). The trade association of footwear is considered to be responsible for the second place of Portugal in the most valuable shoes in the world right after the Italian. This initiative took place more than 30 years ago and it has been considered a benchmark for other business sectors, especially those considered strategic for Portugal. However, other smaller networks can also be named as well-succeed experiences. That is the case of Afocelca, a smaller business network created in 2002 that aims to protect forests (Afocelca, 2017); and Douro Boys, a group of five wine producers of the Douro Region that is active since 2003, unifying efforts, organising joint presentations, seminars and tastings, all concentrated upon relating the story of their heritage (Douro Boys, 2017).

Like individual firms, business networks are characterized by changes, challenges and difficulties that may affect their results throughout their life cycle. Several authors argue that business networks are dynamic entities and as such they can be characterized by various stages, which include initiation, development and termination (Ceglie and Dini, 1999; Child, 2001; Oelsnitz and Tiberius, 2007; Tiberius, 2008; Wegner et al., 2015).

Despite the requests of Grandori and Soda (1995) and Ebers and Grandori (1999) from over a decade ago for studies that address the dynamic evolution of interorganizational networks, in the following decade several authors were still making the same appeal (Jap and Anderson, 2007; Jiang et al., 2008; Cropper and Palmer, 2008). In fact, there are still relevant gaps on the dynamics of business networks composed by small and medium enterprises (SMEs), where the existence of these collaborative strategies can be seen as determinants for development, especially when entering new markets (Coviello, 2006; Zain and Ng, 2006).

Existing research on cooperation mainly focuses on broad forms of collaborative strategies such as strategic alliances. However and even though this article focuses on a specific type of cooperative strategy, “one problem with existing research on strategic alliances is that it largely involves static analysis” (Oliver, 2001:p.472). To analyze the dynamics of change in alliances and business networks, it is therefore necessary to comprehend how they evolve over time and what factors may influence their dynamics. In the case of business networks it is also important to consider that they are shaped by exogenous and endogenous variables (Madhavan et al., 1998) and that, consequently, they may change significantly over time.

Based on the life cycle model of small-firm networks proposed by Wegner et al. (2015), this study compares the development dynamics of two business networks with a similar goal: to promote the internationalization of its members. Wines of Brasil – a Brazilian wineries network – was established in 2002 and remains active, while Vitrocristal – a Portuguese network of glass producers – was established in 1994 and is already extinguished. Although the business networks operate in distinct economic sectors, both want to be competitive on the basis of internationalization. At the same time, the business sectors are comparable in their relative importance economically speaking. In spite of the fact that both networks were created with the same objective, there are differences in their business context (developing versus developed country) and the networks’ trajectories over time (active versus extinguished network).

The characteristics of both business networks make us confident about the potential contribution of our study. From a theoretical point of view, the comparison of business networks in different stages of the life cycle allows us to improve our knowledge about the dynamics of change and what factors influence network development. As a managerial contribution, the study explores the strategies that network managers can adopt to consolidate their networks and reach collective goals (Brito and Silva, 2009; Wegner, Bortolaso and Zonatto, 2016), avoiding their declines and dissolutions.

The article is organized as follows: the first part reviews the theory on network dynamics and describes a life cycle model of small-firm networks (Wegner et al., 2015). The second part describes the research methodology, while the third part presents the two cases, comparing their development dynamics. The article finishes with conclusions, limitations and suggestions for future studies.

Literature review

Interorganizational cooperation and business networks

Interorganizational cooperation may take different forms and follow diverse strategies (Child et al., 2005; Todeva, 2006). The extant literature describes several forms of cooperation such as strategic alliances, collaborative agreements, consortiums, joint ventures, multi-partner alliances and networks (Cropper and Palmer, 2008; Sydow, Schüßler and Müller-Seitz, 2015). Business networks composed by SMEs have been extensively addressed by the organizational literature since the seminal manuscripts of Jarillo (1993) and Perrow (1992). As small firms have an important role in the economy of emerging as well as of developed markets, the adoption of collaborative strategies may improve their performance, by providing – among others – access to strategic resources.

Business networks are long-term collaborative agreements through which firms establish joint goals and a form of relationship governance to generate competitive advantages (Jarillo, 1993; Kilduff and Tsai, 2003; Perrow, 1992; Provan and Kenis, 2008). SMEs join business networks to overcome common problems and reach strategic goals such as promoting firms abroad and accessing international markets (Jansson and Boye, 2011; Michailova and Chetty, 2011), which is one of the main reasons behind their creation.

The development dynamics of business networks

Business networks are dynamic entities characterized by various stages, which normally include initiation, development and termination (Ceglie and Dini, 1999; Child, 2001; Oelsnitz and Tiberius, 2007; Tiberius, 2008). The models found in literature are mainly focused on strategic alliances (Jiang et al., 2008; Spekman et al., 1998), client and supplier relationships (Zineldin, 2002) and partnerships (Dwyer et al., 1987). Only the model proposed by Ahlström-Söderling (2003) focuses on small-firm networks (SFNs) and consists also of three stages: formative, normative and integrative. However, and despite its relevance in the literature, the model does not fully describe each stage and the characteristics a business network of small firms may have over its life cycle. Based on this lack of studies, Wegner et al. (2015) proposed a life cycle model to analyze the dynamics of such interorganizational networks. The model comprises six stages that characterize the dynamics of SFNs (Wegner et al., 2015): conception, birth and formalization, development, consolidation and maturity, decline and dissolution (see Figure 1). At each stage, the SFN presents different levels of development in organizational and relational aspects, which are explored in detail in the next section.

Insert Figure 1 here

Network conception takes place in the first stage and it is characterized by the discussion of possible joint actions among the entrepreneurs. Network members are highly committed in this stage, although there is little exchange of strategic information due to weak ties and a low level of interpersonal trust (Wegner et al., 2015). The second stage consists of the network birth and formalization. The members elect a board of directors and management support teams are established. The primarily collective strategies and network priorities are elaborated. At the development stage the business network sets its management structure and governance rules are improved to ensure efficiency. The network already has a strategic alignment and offers a services portfolio that generates benefits for its members (Wegner et al., 2016). In the stage of consolidation and maturity the business network reaches the highest level in the life cycle, delivering support services and creating value for its members. A professional management structure is put in place by hiring executive managers and the governance tends to move towards a network administrative organization (Provan and Kenis, 2008).

However, a lack of adjustments and improvements in the network structure, processes and governance can guide it to decline. At this stage, members focus on individual actions as priorities instead of collective goals and actions. A break in trust among members may occur. Unless the business network makes changes and adjustments it will be impossible to revert the decline and it will end up at the dissolution stage, a stage where there is no longer a structured management nor services provided by the network. Governance rules are not followed and members' participation and engagement are almost inexistent. Such conditions lead to the termination of the collaborative agreement. In summary, each stage of network development is characterized by different levels of strategic alignment, organizational structuration, trust and quality of relationships.

Categories to analyze the development dynamics of business networks

Wegner et al. (2015; 2016) reviewed the literature and identified six dimensions that may be used to analyze the development dynamics of business networks. These dimensions are divided into two broad categories: i) network organization and management: network governance (Albers, 2005; 2016; Provan and Kenis, 2008; Theurl, 2005); network management (Hibbert et al., 2008; Järvensivu and Möller, 2009; Sydow, 2006) and services portfolio (Isett et al., 2011; Mays and Scutchfield, 2010; Milward and Provan, 2006); and ii) relationships and exchanges between members: trust among members (Albers, 2016; Bachman, 2001; Krishnan et al., 2006; Sydow, 1998); information exchange (Inkpen and Tsang, 2005; Leana and Pil, 2006) and commitment and participation (Hendry et al., 1999; Sydow, 2006). Each dimension is shortly presented below.

The first broad category includes network governance, network management and services portfolio. Network governance refers to the structure and rules of business networks' internal coordination (Albers, 2005; 2016; Provan and Kenis, 2008). Governance rules aim to balance conflicting interests between members and ensure the business network's long term viability, especially when members have diverging interests and information asymmetry (Theurl, 2005). As the number of network members grows and the task complexity increases, a network administrative organization (NAO) would be more effective than a shared governance mode (Provan and Kenis, 2008; Wegner and Koetz, 2016; Wegner et al., 2016).

Different from governance, network management refers to the processes and practices carried out by a group of individuals focused both on the direction to be taken by an interorganizational entity and on the allocation and implementation of resources to reaching such goals (Hibbert, Huxham and Smith Ring, 2008). Due to the cooperative nature of business networks, they require constant negotiations between a group of autonomous organizations (Järvensivu and Möller, 2009; Sydow, 2006) demanding special skills from leaders (Provan and Lemaire, 2012) and network managers (Agostini, Filippini and Nosella, 2015). A clear definition of internal processes and management practices contributes to the consolidation of a business network (Verschoore et al., 2015; Wegner et al., 2016).

A third factor for the analysis of the organization and management of business networks relies on the services portfolio offered to the member firms. Previous studies investigated the role of business networks in the implementation of services by member firms (Graddy and Chen, 2006; Isett et al., 2011; Mays and Scutchfield, 2010). Furthermore, the business network may support its members by offering services that improve members' competitiveness and provide solutions that individual firms would not be able to develop themselves (Bazzoli et al., 2003; Shortell, Zukoski and Alexander, 2002).

The second broad category refers to relationships and exchanges between members. Trust is considered a relational governance mechanism (Poppo and Zenger, 2002; Yu, Liao and Lin, 2006; Zaheer and Venkatraman, 1995) widely addressed by scholars (e.g. Bachman, 2001; Krishnan, Martin and Noorderhaven, 2006; Silva et al., 2012; Sydow, 1998) as a basis for cooperation. A lack of trust and a perception of opportunism may increase the cost of managing the cooperation through contracts and make it infeasible (Sydow, 1998). Interpersonal trust also stimulates network members to exchange information, share knowledge (Inkpen and Tsang, 2005) and build up their social capital. A trusting environment allows the exchange of information not available for those outside the network (Leana and Pil, 2006). In the same vein, communication is considered to foster trust and trust to be able to improve relational capital of the collaborative agreements (Silva et al., 2012).

Finally, members' participation and commitment towards collective activities seems to be a critical issue for the longer term effectiveness of a network (Popp et al., 2013). Network leaders may invest their time monitoring and fostering the commitment of network members (Sydow, 2006). The level of commitment also works as a measure for the health of the collaboration (Parung and Bititci, 2004) and for the benefits generated for its members. Participants satisfied with the management style being performed and the governance rules established by the business network tend to be more committed and engaged with cooperative activities (Wegner et al., 2016).

These six dimensions will be considered in our empirical research for the analysis of the development dynamics of the two business networks that constitute the backbone of this study.

Research method

The exploratory nature of our research problem led us to consider the multiple case study method as the most appropriate. Eisenhardt (1989) reasons that multiple case study enables studying patterns that are common to the cases and theory under investigation, which was our situation. The case study method also makes it possible to explain the significance and cause and effect relationships of the examined phenomena (Yin, 1994). Therefore, this study follows a qualitative and descriptive approach with the unity of analysis being the business networks.

Cases were selected based on the following criteria: i) business networks with similar goals, namely the fact that both want to be competitive on the basis of internationalization; ii) business networks in different stages of development; iii) the business sectors are comparable in their relative importance economically speaking. We are confident that the first criteria allows a comparison among networks due to strategic characteristics. Simultaneously, the following criteria support the analysis of network trajectories.

Informal conversations with Brazilian and Portuguese experts in the field of strategy and cooperation directed us to business networks that reflect the aforementioned criteria. One of the networks is Wines of Brasil (WoB), established in 2002 with the aim of encouraging the internationalization of Brazilian wineries.

In spite of being considered a country of the "new wine world", the contact of the Brazilian people with wine is old as the arrival of Portuguese discoverers on 1500. According to Mello (2016), Brazil has a vineyard area of 79.094 hectares, comprising states of the northeast, midwest, southeast and south. The singularities of each region are the key element for Geographical Indications. In Brazil there are six Geographical Indications for grape and wine production (INPI, 2017).

One of the main production regions, known for its fine wines and for its D.O.C (controlled designation of origin), is Serra Gaúcha, in southern Brazil. Producers from this region were able to promote its wines internationally through the use of new technologies, specialized human resources (Souza, 2005) and the support of Wines of Brasil. In terms of production, over 583 million liters of wines, juices and derivatives were produced in 2015 (Mello, 2016) and only 2,65 million liters of wine were exported (Wines of Brasil, 2017). .

The other analyzed business network is Vitrocristal (VtC), established in Portugal in 1994 to promote the internationalization of glass producing firms. Although wine and glass consist of traditional sectors, both are promoting knowledge-intensive practices and belong to a highly competitive international environment. This way, we can say that firms that aim to succeed in these business sectors and remain competitive needed to internationalize and actively operate outside their home countries.

Crystal and glass are considered to be an important traditional business sector in Portugal. Most of this sector companies are geographically closed located in the region of Marinha Grande, which is considered the glass capital of Portugal. When Vitrocristal was established, 30% of the active population of the region was working in that industry, which contributed to 1% of Portuguese exports. The quality of Portuguese glass was considered to be very good and able to compete with major international players coming from France, Italy, Belgium, Netherlands, Germany, United Kingdom, Denmark, Sweden and Spain. Countries such as Turkey, Mexico and Brazil were back then competing on the basis of price and that was also why the Portuguese business network needed to position itself better in the international market. The strategy adopted consisted in separate the Portuguese companies from a low cost production image and benefit from a growing reputation as a high quality producer.

The main information about the two cases is presented in Table 1.

Insert Table 1 here

Data collection and analysis

Data were collected simultaneously in the two countries, guided by a semi-structured questionnaire and then recorded with an audio device. In the case of Wines of Brasil, five in-depth interviews were conducted with the network manager and representatives of firms of different sizes and participation times in the business network. The interviewed are identified as NM (network manager) and MF1, MF2 and MFn (member firms). In the case of Vitrocristal, nine interviews were conducted with the managers of former member firms (MF1, MF2, MFn) in order to understand the network development. Table 2 shows information regarding the respondents profile.

Insert Table 2 here

The research protocol was drawn from the six dimensions described in the literature review: network governance (Albers, 2005; 2016; Provan and Kenis, 2008; Theurl, 2005); network management (Hibbert et al., 2008; Järvensivu and Möller, 2009; Sydow, 2006); services portfolio (Best, 1990; Graddy and Chen, 2006; Isett et al., 2011; Mays and Scutchfield, 2010; McGuire, 2006; Milward and Provan, 2006); relationships and exchanges between members: trust among members (Bachman, 2001; Krishnan et al., 2006; Sydow, 1998); information exchange (Inkpen and Tsang, 2005; Leana and Pil, 2006); and commitment and participation (Hendry et al., 1999; Sydow, 2006). The respondents were encouraged to describe the characteristics of the business network in each dimension and its evolution and changes over time.

The data analysis was carried through interview transcripts and content analysis (Page, 1990). With these techniques, interpretations were made from the evidences found, as suggested by Miles and Huberman (1994). Firstly, we coded the interviews according to the six categories that followed the aforementioned theoretical dimensions. Then, we analyzed the interviewees' perception for each of these dimensions. Finally, the evidences were compared with the life cycle model of Wegner et al. (2015) so that we could understand the dynamic development of each network and current stage in the life cycle.

Results

We present the results of each case study separately under subheadings, resulting from data treatment, which describe the business network context and history, followed by the broad categories of our literature review. The first broad category refers to Network organization and management, and includes network governance, network management, and services portfolio. The second broad category refers to the Relationships and exchanges between members, including trust among members, information exchange, and commitment and participation. Reliability and validity were checked upon with secondary data collected from official reports released by the networks and with a pretest interview that assessed instrumentation rigor.

Wines of Brasil (WoB) – History and context

Associative practices have been adopted in the Brazilian wine industry since 1929, with the purpose of strengthening the sector (Ibravin, 2017). Nevertheless, the wine sector had a historical institutional fragility, where governmental and sectoral instability prevailed, with disarticulated initiatives in a changing normative environment (Mello, 2016). Currently, the sector presents more synergy, but still has many challenges such as a tax burden of 45% of the bottle value (Giovanni and Freitas, 2014). Foreign wines pay import taxes and charges that can reach 80% of the final price. However, when the product comes from Mercosul countries, such as Argentina and Chile, there is no import tax. Regarding exportation, competition in the foreign market is also fierce. In Brazil, most companies sell products of lower added value, called "table wines" or "common wines". Less than 15% of the total exported comes from fine and sparkling wines (Uvibra, 2017). Brazilian producers also have to deal with challenges such as wine falsification and smuggling.

The creation of the fiscal stamp and the use of six Geographical Indications (Sarturi et al, 2016) are important tools to point out product origin and quality, and to reduce consumer uncertainty. In addition, wineries interact with technical research centres such as EMBRAPA (Brazilian Agricultural Research Corporation) and CEFET (Federal Centre for Technological Education in Viticulture) for hybridization programmes and genetical improvements. To benefit from social relations and promote their products, companies and other members of the wine production chain have organized associations such as UVIBRA (Brazilian Winemaking Union) and IBRAVIN (Brazilian Wine Institute) (SATO, 2008).

The business network Wines of Brasil (WoB) is an example of this strategic interaction. It was created in 2002 as a partnership between IBRAVIN and the Brazilian Agency for Export and Investment Promotion (APEX), with the aim of promoting the quality of Brazilian wines in the international market (WoB, 2017). Initially, six wineries joined the project, whose headquarters are located in southern Brazil in a small city in Rio Grande do Sul called Bento Gonçalves.

In 2017, WoB comprises 27 wineries and operates with 35 countries as export destinations. Despite its global action, the project has five priority markets for Brazilian wines: Germany, China/Hong Kong, the United States, the Netherlands and the United Kingdom (WoB, 2017). The business network aims to introduce Brazilian wine into the global market and to promote the country's image as a wine producer. WoB does not act in the marketing and product logistics distribution. Each winery is also responsible for its business contacts and for product delivery.

Given the public funding of the project, there are specific goals that aim at including new wineries in the network. Thus, Wines of Brasil is open to all Brazilian wineries that produce fine wine. This rule inhibits the entry of wineries to exclusively export table wine. Several actions are carried out to attract new wineries to the business network, such as events, visits and presentations to sector entities. As a result, more recently, wineries from other regions such as southern and northeast Brazilian states were also included. Network members pay a fee according to their production of fine wines.

Wines of Brasil organization and management

WoB follows a governance mode called by Provan and Kenis (2008) the Network Administrative Organization (NAO), where there is an entity created to manage the activities. Network members are not directly involved with the management, but they can participate in strategic decisions and network planning. This organization model seems to be adequate since a team of hired executives and staff manage the network operational activities. However, the representative of a small winery argues that “(...) they all opine, but who stands out most is the one who has more experience, those wineries participating for a long time... (...). Large wineries end up pulling to themselves (WoB-MF3)”. This opinion shows that the network decision-making process is influenced by larger companies, although the right to participate in the decision making is guaranteed to every company. While strategic decisions are defined collectively, the administrative and operational activities are carried out by hired employees. Besides the executive manager, the network has employees responsible for specific markets due to its strategic importance, such as Germany, England and the USA.

The governance rules and the network management structure support a service portfolio offered to the members. These services cover the needs of member firms in different stages of the internationalization process. The network’s main service is to promote Brazilian wine through participation in international fairs. In addition, there is "the Buyer Project, which consists in bringing [to Brazil] importers and potential buyers" (WoB-NM). The business network also develops the so called “first export programme”, "a training programme to companies that want to start working in the international market" (WoB-MF1), and offers "a consultancy service which goes to the winery and sets an export project from scratch, from its very first steps" (WoB-NM).

Wines of Brasil exchanges and relationships

According to all respondents, WoB is characterized by a positive environment of interpersonal relationships. "The environment is very positive among the participants. Obviously, there are some divergent views, but it is normal" (WoB-MF2). The network manager has a similar opinion, stating that there are always some conflicts, but with positive effects: "In a project like this, with competing companies, which end up in a coopetition way, conflicts will happen. But until today they have led us to better levels, we learn to deal with it" (WoB-NM). This positive environment also promotes the information exchange among the participants, as reported by respondents: "... I make some calls to exchange information, because there is not that competitive feeling towards the international market" (WoB-MF1). However, in what concerns the domestic market, the same is not true. "(...) the local market is closed [for information exchange]. We haven’t broken this taboo yet" (WoB-MF1).

Despite the favourable interpersonal relationships and information exchange provided by the networked environment, respondents expressed their concern with the participation and commitment of network members in collective actions: "I went to meetings where we were only six companies. I think it is too little" (WoB-MF2). Another respondent added that "we realize that only wineries that (...) are in the top positions in the export ranking (...) often attend the meetings, but the vast majority of companies (...) do not show up" (WoB-MF1). In contribution to this, there is the fact that some network members are located at great distances from the headquarters, including other Brazilian states, which makes the attendance of these meetings very costly.

Table 3 summarizes the characteristics of WoB regarding its internal organization and management as well as the exchanges and relationships among members.

Insert Table 3 here

Vitrocristal (Portugal) - History and context

Glass and crystal production in Portugal is very much concentrated in the region of Leiria, Alcobaça and Marinha Grande – in the central seacoast of Portugal – and plays an important role for the economy of the whole region. However, due to difficulties faced by firms in the 1990s, the Portuguese government decided to support them through the financing of a business network. The Vitrocristal network (VtC) was then created in 1994. Formally it was a group of 14 firms and three institutions, active in the glass and crystal industry. From 1994 to 1998, the Portuguese government invested a total amount of 65 million euros towards the project. The major intention behind its creation was to restructure and modernize the industry that was out of date, even though very traditional and renowned. The most well-known initiative was the launching of the brand MGlass (Marinha Grande MGlass). A large marketing investment on the brand name was made and an official stamp created to imprint on the pieces that were selected to be part of the collection to be presented in the international market. Sales to foreign markets increased substantially, especially in the USA, where the brand achieved a respectable 1% of market shares. However, several problems were brought about when the Portuguese government started diminishing the inflows to the network, and in 2004 the project started to show evidence of declining. In 2007 a bankruptcy process was initiated following a sequence of frictions between network members that led to the network closure.

Vitrocristal organization and management

At VtC also the governance mode of Network Administrative Organization (NAO) was followed (Provan and Kenis, 2008), considering that there was a special entity to manage the project's activities. In the same way, network members were not directly involved with the management, even though they could participate in strategic decisions and in network planning. Most of the network members were located in the region of Marinha Grande, Leiria and Alcobaça, which is rather small, considering the size of the country. Therefore, they did not present major difficulties in attending meetings. Nevertheless, consensus was not always present in the meetings and several decisions were made without it. Group members questioned management attitudes as explained by one of the former members: "we didn't agree with many decisions and we shout it loud!" (VtC-MF1)

Still, most companies understood that in order for goals to be achieved and sales attained, some standardization of procedures had to be implemented and supervision of the quality of the products ensured, since the moment the products' collection was defined. The definition of the collection always included items from different supplier members and in some cases, due to specialization among members, some pieces had to go through different stages in its production system, passing from the hands of one network member to the hands of another. There were specific rules that members acknowledged and had to fulfil in order to benefit from the VtC support. These included joint participation in trade fairs, the production of catalogues, and commercial efforts.

The business network offered different services to its members such as marketing and advertising campaigns, design of products and professional education. A common brand for the international approach – MGlass – was developed and adopted by all firms that were able to meet the standards. The use of the brand was only possible for those that fulfilled the required conditions.This was considered as an obstacle for some companies that understood to meet the necessary standards to use the brand. However the access to its use was blocked because certifying entities did not entitled them that possibility.

Vitrocristal exchanges and relationships

VtC was erected by governmental entities and firms. As there were funds coming in, everyone felt motivated to adhere. Cooperative relationships among network members were displayed throughout the project's first years. However, some interviewed recognized that the possibility of opportunistic behaviours was manifest: "Entrepreneurs had the idea that the project had only gains and that they would never lose by adhering to the network" (VtC-MF1). In the same way, an entrepreneur said, "If there are funds from the Government in it, it is because it is a trustable project" (VtC-MF4). Some entrepreneurs believed that individual interests could be ahead the effort that some agents were placing on the project. However, they did not want to be left behind and they displayed this mimetic behaviour so that they could also be involved.

Yet, during a later phase of the project, both involvement and trust started to decline. Many firms revealed to be unable to cope with requirements and they started distrusting both the leadership of the project and the other members. Opportunistic behaviours emerged and receptiveness to the network management started deteriorating. When the network leadership changed, around nine years after the establishment of the network, many people stopped identifying themselves with the project. This, along with the halt in government investments, caused some suspicion that inevitably harmed trust in the project. This happened in a period coincidently with the indebtedness of some firms. Even though some of the larger firms still tried to assist the smaller ones, the context was not favourable either and the collapse was imminent. Network dissolution was declared 13 years after its birth, after a change in the leadership and a remarkable break in trust among members.

Table 4 summarizes the characteristics of VtC regarding its internal organization and management as well as the exchanges and relationships among members.

Insert Table 4 here

Results and implications

The interviews showed that both business networks were created with the support of public funds and have gone through the stages of conception, birth and development proposed in Wegner et al. (2015)'s model. However, the development dynamic of VtC led to its dissolution, while WoB is presently at the consolidation stage. The Brazilian network has established governance rules allowing the participation of its members in strategic decisions, and adopts a Network Administrative Organization (NAO) governance model, which seems to be suitable for networks with a high number of participants and complex organization, once a specific entity is created to perform network management (Provan and Kenis, 2008). The interpersonal relationship environment of WoB is positive and there is a good level of information exchange regarding international markets among the member firms. These are essential features of cooperation and favour network development according to Bachman (2001), Inkpen and Tsang (2005), Silva et al. (2012) and Sydow (1998).

Nevertheless, respondents also showed concern about the low level of participation of network members in meetings and activities of WoB. The level of participation shows the interest of members in cooperation (Hendry et al., 1999; Sydow, 2006), and may jeopardize the network's continuity in the long run. One possible explanation for this problem is that member firms have different demands and profiles (firm size and strategic goals). The low level of participation reduces the legitimacy of decisions taken by the few members that effectively participate (Provan and Kenis, 2008) and can decrease the interest of other firms to cooperate. A similar situation occurred in the Portuguese case. There was high participation at the beginning of the network activities and all companies wanted to join it, but there was a gradual loss of interest and cooperation declined as time went on. In the Portuguese case, the leadership of the project was very strong in the beginning, but it got weak towards the end.

Another relevant aspect is the public funding received for the creation of both VtC and WoB. As the Portuguese network, members of WoB said it would not be possible to keep the business network without this support. They also have no plan to make the business network self-sustained and become less dependent on governmental financial support. Although the WoB network is close to the consolidation stage, it runs the risk of coming into decline without public support. The withdrawal of public assistance to the project is not under consideration at WoB in the same way it happened in VtC.

As a theoretical implication we highlight that effective governance (Albers, 2005; Provan and Kenis, 2008), professional management (Hibbert et al., 2008; Järvensivu and Möller, 2009; Sydow, 2006); a services portfolio (Mays and Scutchfield, 2010; McGuire, 2006; Milward and Provan, 2006) and a good relational environment (Bachman, 2001; Krishnan et al., 2006; Sydow, 1998) may not be sufficient to ensure the consolidation of a business network. It is essential to the network to stimulate its members' competitiveness and make the benefits of cooperation significant enough to support network activities without government financial support. This result brings new elements to analyze the dynamics of change in business networks and contributes to the life cycle model of Wegner et al. (2015)

by showing that external factors may influence network development and should therefore be added to theoretical models that want to describe and anticipate network development patterns.

As a second theoretical implication, the results show that business networks are based on a fragile stability which can be affected by small changes in the external or internal environment. As predicted by the theoretical model of Wegner et al. (2015), even mature and consolidated networks are not immune to actions such as opportunistic behaviours that may lead to their decline and dissolution. The organizational elements (governance, management, services) and relational ones (trust, information exchange, commitment) are inexorably interwoven and strongly affect each other. Therefore, theoretical models must holistically consider the interplay of these elements in order to capture the network development process. Such a result also reinforces that network managers need to be vigilant and monitor all organizational and relational aspects to ensure network continuity. Restoring trust may be a hard task in business networks formed by a large number of firms.

The cases also contribute to a deeper understanding of the relationship between the six theoretical dimensions and the development of business networks. A Network Administrative Organization and a professional management are critical to the network development. However, they may also diminish member participation in collective activities and weaken their overall commitment. Additionally, lower participation reduces the opportunities for trust development, an essential feature of successful collaborative enterprises (Bachman, 2001; Krishnan, Martin and Noorderhaven, 2006; Silva et al., 2012; Sydow, 1998). Thus, our study contributes to the discussion of the tensions that result from the choice of network governance form (Vangen and Winchester, 2014; Casey and Lawless, 2011; Enqvist, Tengo and Bodin, 2014; Saz-Carranza and Ospina, 2010). While a NAO ensures the effectiveness of business networks with a large number of members (Provan and Kenis, 2008), this mode of governance may also generate side effects such as lower levels of commitment and trust among members.

Our study also offers practical implications. First, we believe our findings can help managers to understand better what factors may prevent network development and led to dissolution. The unsuccessful experience of VtC can be used as a warning to WoB and other business networks highly dependent on public support. Although in its consolidation stage, the Brazilian business network significantly depends on the public funding that it still receives. As with the Portuguese case, WoB has not developed strategies to ensure the sustainability of the network without public support, which was considered a major problem in the deterioration of the network. A lack of financial resources may reduce the interest in cooperating and opportunistic behaviours are, therefore, more likely to occur, thus leading to the decline of the network. Therefore, the network should, at least, prepare itself for the situation in which this kind of resource is diminished or totally drained.

Second, network managers should be aware of the relationships among organizational dimensions and the soft relational issues such as trust and commitment. At the same time that a business network needs to be professionally managed, it is indispensable to adopt management practices for the following purposes: i) to stimulate members' participation in strategic decisions, ii) to create physical and virtual spaces for interaction that foster the development of trust among members, iii) to offer a services portfolio that meets the interests of heterogeneous groups of members. Especially in publicly financed business networks, it is essential to ensure the internal legitimacy and the interest of members. A business network with a high level of commitment and members' participation may be more likely to maintain public support than a counterpart characterized by internal conflicts and lack of cooperation.

Third, our results offer insights for public agencies that support business networks in emerging and developed countries. Although financial support is important for the birth and early development of a business network, public policies should stimulate networks to become self sustainable. A financial support for an indefinite time may even discourage members' efforts and commitment towards collective goals. Public policies that support business networks could follow a model of reducing financial investment over time, indicating that the beneficiary firms need to develop strategies to ensure the continuity of cooperation. Especially in the case of emerging markets where usually governments face financial constraints and need to choose which projects to support, a time-bounded support policy can benefit a larger number of industries and firms.

Conclusions

Despite the extensive body of research on interorganizational cooperation in recent decades, there are still relevant gaps regarding the development dynamics of business networks (Cropper and Palmer, 2008; Jap and Anderson, 2007; Jiang et al., 2008; Oliver, 2001). Therefore the aim of this study was to analyze the development dynamics of two business networks established with similar goals but that followed different development paths. The Portuguese network Vitrocristal passed by the conception, formalization and development stages, but closed down without achieving all the goals set. The Brazilian network Wines of Brasil passed by these same stages and currently is consolidated, performing strategies that meet the objectives set by the members.

The pattern of results in our study provided a more comprehensive and nuanced understanding of the dynamics of change in business networks. On one hand, the cases confirm the life cycle stages proposed by Wegner et al. (2015). On the other hand, they throw more light on the development processes of business networks, by describing how exogenous variables such as public support may affect cooperation. In the cases of both VtC and WoB, public support played a significant role towards fostering cooperation. However, the end of financial support may accelerate network decline and closure. In this sense theoretical models that want to accurately describe and anticipate network development should consider exogenous variables and how they impact the dynamics of change. Cumulatively, it is important to consider the possible outcomes of a situation in which this support ends.

Practitioners can benefit from our results as well as get to know in which stage of the life cycle model the network is and what the major challenges of the upcoming stage would be. Especially business networks in emerging markets may learn from our two cases to foster its development and avoid decline and dissolution. Policy makers should consider both positive and negative aspects of financially supporting interorganizational cooperation. While such a kind of support may be fundamental to fostering cooperation, it may also induce overdependence and prevent the network from becoming self-sufficient. Therefore, besides inducing cooperation to foster business competitiveness, public policies should include strategies to make firms aware about their role in making the business network work for its own.

Our major research limitation is the number of cases studied. Despite the methodological concern of choosing business networks with similar goals that followed different development patterns, the limited number of cases prevents generalizations. Therefore, we suggest further studies with a higher number of cases and that can examine other variables – especially exogenous ones, as only financial support was considered here – and how they impact network development. Researchers should consider the country's institutional environment and compare our cases to business networks created without public support.

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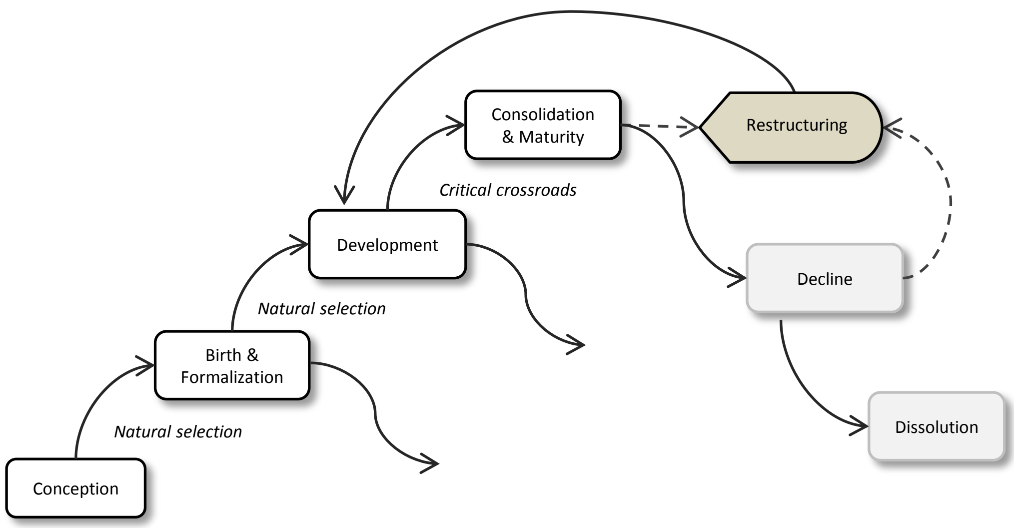
Restructuring
Consolidation
& Maturity
Critical crossroads
Development
Decline
Natural selection
Birth &
Formalization
Dissolution
Natural selection
Conception

Table 1: Characteristics of the business networks

	Wines of Brasil (WoB)	Vitrocristal (VtC)
Aim	To promote the Brazilian wine in the international market, to increase sales and to make the wine well-known internationally	To restructure and modernize the sector; to stimulate the internationalization of Portuguese glass companies
Foundation year	2002	1994
Initial number of members	6 firms	14 firms and 3 other organizational institutions
Number of members in 2017	27 firms	VtC extinguished in 2004
Position along the value chain	Horizontal	Horizontal

Table 2: Respondents profile

Business network	Position in the business network	Code	Size of the company	Duration of participation
Wines of Brasil	Board member - Member firm	WoB-MF1	Medium	12 years
	Member firm	WoB-MF2	Medium	12 years
	Member firm	WoB-MF3	Small	5 years
	Member firm	WoB-MF4	Small	1 year
	Network manager	WoB-NM	Not applicable	2 years
Vitrocristal	Member firm	VtC-MF1	Small	18 years
	Member firm	VtC-MF2	Small	16 years
	Member firm	VtC-MF3	Medium	18 years
	Network manager	VtC-NM1	Not applicable	8 years
	Network manager	VtC-NM2	Not applicable	4 years
	Network manager	VtC-NM3	Not applicable	8 years
	Network manager (sales person)	VtC-NM4	Not applicable	3 years
	Network manager (designer)	VtC-NM5	Not applicable	3.5 years
	Academic researcher	VtC-R	Not applicable	NA

Table 3: WoB organizational and relational characteristics

Category	Description	Analysis
Network governance	Network Administrative Organization (NAO)	A NAO governs the business network, but partners may participate in strategic decisions.
Network management	Professional management	Managers were hired to execute operational activities regarding services offered to the partners.
Services portfolio	Wide range of services	WoB offers a wide range of services adapted to partners in different stages of internationalization.
Trust among members	Medium to high	Conflicts are considered beneficial and do not prevent cooperation among members.
Information exchange	High	High information exchange regarding international markets, but not about local market.
Commitment and participation	Low	Only the biggest partners attend the meetings and interfere in strategic decisions.
Stage of Network Development	Consolidation and Maturity	A business network at this stage delivers support services and creates value to its members. A professional management structure is put in place and the governance tends to move towards a NAO.

Table 4: VTC organizational and relational characteristics

Category	Description	Analysis
Network governance	Network Administrative Organization (NAO)	A NAO governed the business network, but partners may participate in strategic decisions.
Network management	Professional management	Managers were hired to plan and execute activities, but there was no consensus regarding network goals.
Services portfolio	Wide range of services	VTC offered several services to its members ranging from design of products and marketing support to professional education.
Trust among members	High to low over time	Relationships were positive in the first years, but trust started to decline and opportunistic behaviours arose.
Information exchange	High to low over time	Initially communication was exchanged frequently, either personally in meeting or by mail.
Commitment and participation	High to low over time	High while government supported the business network, but distrust and opportunism lowered commitment over time.
Stage of Network Development	Dissolution	VTC reached consolidation, but was not able to keep itself at this stage due to breach of trust and opportunism.