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The Importance of Information Management in Small Businesses in Network Operation

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Abstract

This paper proposes taxonomy to classify small business operating in networks. This taxonomy is based on linking element or actor between the network and the market. Four types of links are identified: a) a fund provider; b) an outsourcer; c) a cooperative; and d) a stellar organization. The stellar organization, an informal network arrangement based on common objectives of participating members, that appeared in Northern Italy in seventies is described in terms of relevant characteristics. These can be positive or negative. Positive features of the stellar organization include high specialization and multiple mother (or star) companies, resulting in lower unit costs of production and high flexibility in satisfying demand. Negative features includes higher transaction cost diseconomies due to the required multiple negotiations. However, the paper shows that even the high transaction costs can be overcome by systematic gains due to negotiations, a system that is more efficient than the authoritarian command typical of large organizations. The paper also points out the branding weakness of the stellar organization to compete in a global economy.

Keywords: Stellar organization; network taxonomy; competitive analysis.

Introduction

Small companies and enterprises can operate under different network arrangements. Such networks can be classified by the contracts governing their relationships, by the degree of operating independence or by the level of cooperation among the members of the network. This paper shifts the taxonomical focus to one based on the ability of the network to compete in the market.

Of particular interest here is the stellar organization, a network kind of organization that appeared in Northern Italy in the last 30 years. This organizational model is based on intense entrepreneurship and drives a set of highly specialized small firms participating in an extensive network. What draw the attention of this paper to the stellar organization are its inherent competitive advantages. Such capabilities have shown to enable strong economic development in different industries in which workmanship contributes to a sizeable portion of the added value. The construction of a competitive advantage-based taxonomy of entrepreneurial networks requires confronting the strengths and weaknesses of alternative organizational models of small businesses operating in networks, not only among them, but also vis-à-vis large hierarchical organizations. This approach highlights the competitive advantages of the stellar organization. Moreover, it points out branding difficulties, thus leading to the adoption of preventing strategies. The competitive advantages of the stellar organization—sustained by its entrepreneurial characteristics—suggest that it may be granted an important role in emerging and developing countries.

This paper begins with a competitive comparison between networks of small companies and large corporations. This serves to understanding the main strategic issues at work. Next, a market driven taxonomy of small companies networks is presented. Then, the paper analyses the stellar organization, revealing the sources of its distinctive competitive advantages, both relative to the other models of entrepreneurial networks and large corporations. The branding issue follows. The paper concludes with a summary of the competitive advantages of the stellar organization, under the perspective of its adequacy the Brazilian economy.

Small Companies in Extensive Network vs. Multinational Companies

An appropriate framework to evaluate types of organizations that can prevail in the future was built by MIT's 21st Century Initiative program [1]. It proposes that one of two alternative organizational formats should prevail by 2015: large multinational conglomerates, or small companies operating in large networks.

Multinational corporations' scenario. For the 21st Century Initiative, multinational corporations can reach such a size and such a wide role that they are called ―virtual countries‖. In this organization format, large multinational conglomerates, in the keiretsu style, run multi-product companies and operations, regardless of country boundaries. In fact, they became a substitute to the idea of nations, at least for their members. They control ―wealth that is more important than the very territorial domain: the access to knowledge, to networks and to life styles‖ [1] (p.77). Given their huge size, the predominance of such organizations would lead to oligopoly: a few organizations would dominate markets and supply chains. Par excellence, scale becomes the source of competitive advantage and the typical barrier to the entrance of competitors is size. Size and centralized operation would also favor protection of knowledge, which becomes more valuable and more difficult of being copied by intellectual property legislation.

Small companies/extensive networks scenario. In this scenario, most of the specific tasks are accomplished by autonomous teams or by small companies temporarily linked by the objective of undertaking a certain project [1]. Although a formal command structure is not present, some level of authority exists, located in the company—however small—, which takes the responsibility for decisions on investments in research and development, marketing and production. This company acts basically as a marketing company; one that detects consumer needs and looks for ways to satisfy them. The major competitive advantage of such a type of organization resides in its flexibility in responding to the market demands, both in terms of which goods or services it will deliver and of timing. Here, flexibility means more than offering an adequate set of product alternatives. It begins with being close to consumers and having the ability to give them something they need through an individualized negotiation process. Flexibility in satisfying consumer needs is a source of sustainable competitive advantage in marketing strategy [2].

A Taxonomy of Small Companies Operating in Extensive Networks

To understand the competitive advantages of small companies/extensive networks scenario it is important to focus on how the networks connect with their markets. This results in four models. A fund provider is the market link. In this organization model, capital owners prefer to keep distance from production. They hire it from smaller companies. Typically, small companies create projects that are offered to a fund provider in exchange for some participation in the profits of the project. Two examples illustrate this model. One is the movie industry, in which large studios were replaced by smaller producers, hired to produce previously discussed projects [1]. A more recent version of this model, common in the information technology business, is venture capital. Here, business projects, vested as attractive business plans, receive financial infusion in a venture designed to remunerate capital at high rates. High rates compensate for high failure risk. In both examples, products tend to be aimed at specific market segments, because creation (the idea) and development happen close to the market. However, the launching decision is centralized and tends to follow a formal process, increasing response time and, thus, hurting flexibility.

A traditional outsourcer is the market link. This model involves radical outsourcing by a given company. This practice appeared in United States before World War II, and accelerated since. It is based on the concept of fixed costs reduction, which is particularly appealing when dealing with frequent market fluctuations. It generally implies transferring some activities to specialized companies, leaving the contracting company free to concentrate its efforts on its end-activities, its —core business. One example is the automobile industry (assemblers have outsourced the production of parts and components for a long time). Another is given by Nike, which outsources its production, transportation and distribution, undertaking internally only project development and marketing. The connecting firm is usually a large one, which assumes all relationships with the market. Other participants are generally much smaller companies acting as departments of the central one. In this model, lower fixed investments by the outsourcing, central company—and not necessarily reductions in market answering time —generate the potential gains in flexibility. A cooperative is the market link. The word ―cooperative‖ derives from the Latin cooperari, formed by cum (with) and operari (to work), meaning to act simultaneous or collectively for a common end, or to work in common for the success of the same purpose. Small producing units associate to create an organization (the cooperative), to perform certain tasks (usually, purchasing supplies, and commercializing the associates' production). Although governed by the vote of its associates under a normative, highly regulated regiment, cooperatives act in an independent fashion. As organizations responsible for the links of the associates with the market, they usually market the associates' products under the cooperative's brands. The fact that the objective is to market the existing production of the associates—and not to fulfill the demands in the market place—flexibility in satisfying the market is usually small.

A stellar organization is the market link. Finally, the stellar organization model originated in Italy in response to the Asian price-based competition crisis—a phenomenon part of what is now known as globalization—and to the demand changes towards more personalized and less mass oriented products. Two aspects characterize the stellar organization. The first is an extraordinary specialization of the different stages of production. The second is the existence of a large number of companies linking with the market (the stars or mother companies). Normally, they are responsible for product development and commercialization. As for the production, the system uses a co-division of a highly specialized productive structure. This way, specialized producing companies can negotiate their specialized products (goods or services) with a large number of mother companies. As a result, a highly flexible system is created, capable to fulfill quite specific demands from the market. At the same time, production specialization guarantees enormous scale and learning gains, given that each small company undertakes a single stage of the productive process.

A word of caution has to be made about the nomenclature at this point. In a more rigorous way, in all the former types (fund provider, outsourcer and cooperative), the link can be regarded as a ―star—a central entity. However, this paper adopts the ―stellar organization denomination only for the later, a more specific organizational arrangement in which a host of small mother companies (the ―stars) make the link. In Italy, where they originated, these organizations are known as the ―Organizzazione Stellare, or Stellar Organizations. A more appropriate denomination would be ―the constellation organization.

The Stellar Organization

Figure 1 illustrates the stellar organization. In Figure 1, boxes represent small, specialized producing firms. Stars, or mother firms, take advantage of a ―market‖ of competing suppliers—the specialized producing firms. Mother companies are usually responsible for product creation and development, marketing and commercialization. The primary function of the mother companies is one of agglutination of a process designed to offer a product to the market. The supplying companies take charge of very specific phases or stages of the process—in particular, of the production stages. Some of the features of the stellar organization are discussed next, following Menck [3]

High specialization. Extremely high specialization is the main distinctive feature of the stellar model. Differently from the other three small companies/large networks models, specialization is intensive in the stellar model. In the fund provider model, there is an incentive for the fund provider to hire a single company to accomplish production. Its objective is to reduce costs, and a bundle of providing companies may elevate administrative and control costs. In the case of the outsourcers, there are no a priori limits for the specialization, but outsourcing is also based on fixed cost minimization. This creates an incentive for the outsourced tasks to be full systems, instead of specific production tasks. Finally, in the cooperative case, there is no inherent motivation for specialization, as the producers themselves take the initiative of setting up the cooperative. In turn, in the stellar organization, the idea of specialization is inherent to the model. It helps the small companies—mostly operating on individual or family basis—to concentrate on a very specific stage of the process. This generates high knowledge about each stage and, therefore, very advanced processing technology can be created. The incentive is the high efficiency and profitability thus obtained. From the perspective of the mother company, in principle specialization generates additional costs (more negotiations, more physical flow of products, more controls). However, additional costs can be compensated by process and product quality improvement, as well as by smaller bureaucracy required at the smaller producing unit.

Multiple mother companies. This is another aspect that differentiates, in structural terms, the stellar organization from the other small firms/large networks models (fund provider, outsourcer, and cooperative). In those models, the connecting element is a single organization, generally one that is very large, when compared to the producing units. In the stellar organization, there are a large number of fairly small mother companies. Two are the consequences. First, in the perspective of the small supplying firms, the stellar organization provides larger scale and more reduction of fixed costs—as the same specialized task will be done for many mother companies. Second, in the perspective of the mother company, it assures higher market satisfaction—given the generation of higher product design flexibility.

The small, highly specialized supplying firms gain scale—and, therefore, can invest deeper on technology—as they do the same, specialized task for several mother companies. The multiplicity of mother companies guarantees a volume of business that would be unthinkable for extremely specialized firms working for one or a few customers. Moreover, higher scale gains derive from the relative homogeneity of the demand provided by multiple mother companies. This contributes for diluting fixed costs as the production capacity is divided among several mother companies.

Also under the perspective of the small supplying units, the multiplicity of mother companies assures a more perfect market. As they supply multiple clients with their capabilities, the bargaining power of the supplying units is larger than it would in a situation with few customers—a common situation in the fund provider, outsourcer and cooperative models. Therefore, the multiplicity of mother companies guarantees an appropriate remuneration to the small supplying units.

Moreover, the multiplicity of mother companies in the stellar organization ensures that as the interaction with the market is made through a large number of companies. This leads to a great capacity of scrutinizing the needs of the market. As a result, marketing risks are diluted. If a large, singe outsourcing company fails in the market, every small outsourced firm will suffer the consequences. In the case of the fund provider model, the market failure of the project can represent a death sentence for the financed company. If the cooperative fails, a portion of the members' patrimony is simply lost. In the stellar organization, the small supplying companies depend less of individual mother companies.

Flexibility is present in the stellar organization as different mother companies market specific products, increasing the possibility that consumers have their needs satisfied. There is a larger diversity of offerings: the more companies, the more products, larger the possibility of satisfying specific needs. The very fact that there are several mother companies acting in the market, each one preserving an identity, aids in the offerings' diversification. Moreover, the very structure of the stellar organization facilitates more flexibility in satisfying the market: as the production structure is specialized in phases of the productive process, diverse arrangements of the productive capacities can be quickly made in order to satisfy specific demands without the need to incur in large fixed investments. The diversity of possible arrangements provides flexibility. Therefore, specific transaction costs are minimized in the stellar organization.

Diseconomies in the stellar organization. The stellar organization has some diseconomies when compared with hierarchical organizations, particularly for the multiplicity of transactions involved. Each transaction involves costs of negotiation, communication, coordination, physical transportation, and control over processes done remotely. The 21st Century Initiative program assumed that "whether a task can be done within a large organization or in separate entities will be determined by the total costs involved" [1] (p.80). To make operations viable in the stellar organization requires having larger benefits from flexibility than the extra costs generated. This implies that the transaction costs have to be kept low in an environment rich in external transactions. The stellar organization reduces its costs of external transactions with a system of intense communication, and personal and permanent negotiation [4].

Such a system is possible in a Latin culture. In the stellar organization, each company understands itself as the organ, not the body. In such a system, each small company has high autonomy, while preserving high synergy. To accomplish it, the system is based on high informality (no bureaucracy) and on intense negotiation. True partnerships among the participant companies prevail, directed by a sense of belonging, not formal contracting. Differently from the cooperatives, there is no central organism. Flexible consortia involving small companies, business associations, government entities and unions organize the system. The common objective of obtaining a market share is the tie. Solidary behavior is found among the companies, with the understanding that the results benefit all [4]. Out comes. Wherever the stellar organization system operates, it has been generating wealth and high life quality. In particular, Northern Italy is, today, one of the most affluent areas of the planet, along with California's Silicon Valley, in the United States. The reason for such high success seems to reside fundamentally in the capacity of the stellar organization to preserve and to enhance the flexibility proper to small companies/extensive networks, while obtaining scale advantages typical of large multinational hierarchical organizations. Operating with extreme specialization provides the small supplying firms gains of scale comparable, if not superior, to those achievable by large organizations. Production volumes of specific tasks are high and the demand can be relatively homogeneous along the time. Furthermore, the organizational system of independent supplying-producing units, stimulated by the possibility of appropriation of gains of scale, leads to the technological development of the productive process. On the other hand, the organic system is settled by the intense and continuous negotiation and solidarity among member companies, acting "always in partnership, downplaying the role of process and product patents, without exclusiveness, with no paper work in materializing the partnerships" [4] (p.16). As a result, the incremental costs and inefficiencies in an atmosphere replete of external transactions are minimized. In summary, the minimization of the coordination costs of the external transactions in the stellar organization makes it possible to aim at the advantages both of the small companies/extensive networks (e.g., flexibility) and of the large multinational organizations (e.g., gains of scale).

Branding: Difficulties for the Stellar Model

Either large multinational organizations and small companies/extensive networks lead by a single market player have the advantage of being able of to establish solid brands in the market. A typical example would be Nike, which practices radical outsourcing of its production but markets its products under a single, worldwide brand, which the company regards as its main asset [5]. The brand has the function of identifying the product, reducing costs for consumers (e.g., psychological switching costs). Thus, a brand represents a quality warranty and an attribute that allow consumers to assess the trust that can be deposited in a certain product at a certain time [6]. To have a well-established brand in the market, firms usually have to go through large, long-term investments, both to make the brand well known and to sustain an appropriate positioning [7]. For the small mother companies that maintain a relationship with the market in the stellar organization model, competing with practically unknown brands can become a problem. The solution seems to be the adoption of some certification in order to execute the functions of the brand, such as identification and quality warranty. In order to do so, some sort of collective effort has to be done. The question can be viewed under two perspectives, from the supply side (product) and from the demand side (consumer).

From the supply side, the members of the stellar organizations have inherent incentives to maintain of a certain quality pattern, as they work under a network of intense personal negotiation and communication. Being part of such a network means, for the companies, adhering to an unwritten pact. Through it, members adhere to a sense of "common destiny," which imposes an incentive process and a pact for quality seeking. The quality pattern is dictated by world level competition [4]. The incentive to keep a quality level is given by eventual sanctions imposed by the network. Failure in sustaining such a pattern may represent the exclusion of the network. This is only possible with a system of intense and open informal communications among the participants. From the demand side, product recognition or identification of the maker is central. Usually, offering quality warranty requires the adoption of some level of formal structure by the network. In the cases of the clothing, footwear and furniture industries in Northern Italy, the network is recognized through the "Made in Italy" brand. Even so, there is the possibility of falsifications (the improper use of the brand Italy, for example) and the possibility that the network sanctions are not enough to overcome an incentive for members of the network or even outsiders to reduce the established quality patterns. More importantly, consumers have no warranty that specific Italian firms do not compromise with the expected quality level. This highlights the need for offering some type of quality certification, either through some independent organism or some type of formal cooperative action among by the members of the network. In the first case—certification by some external independent organism—will certainly add some cost to the process. For example, some retailer may offer its private brands as a product warranty. However, it will certainly appropriate of a portion of the value of the product for consumers. As such appropriation can be greater than the cost of the warranty, this track can be less suitable than the creation of a formal, cooperative entity capable of offering the warranty. The branding question seems to be one of the weak points of the stellar organization, because it does not have an inherent solution, but only an external one—the constitution of a formal warranting entity. However, being aware of it helps preventing lower competitive ability.

Conclusion

The stellar organization model is a particular case of small companies operating in a large network. It is characterized by a large number of companies linking the organization to the market—the mother companies. This article analyses the strategic consequences of the stellar organization model, as confronted with other organization models based on networks of small companies in which the link connecting with the market is made through a single or a few companies. In such models (fund provider, outsourcer and cooperative), there is a single company concentrating the relationships with the market and, thus, assuming a prominent position relative to the other members of the network. Based on this analysis and comparing the stellar organization with the large multinational of type of organization, this paper argues that:

1. Gains of scale. In the other models of small companies/extensive networks, the situation of dependence of the small supplying companies of the network on a single large company does not create an incentive for the small supplying companies to seek large gains of scale, through extreme specialization. On the contrary, the stellar organization stimulates high specialization as multiple mother companies make a market capable of diluting the fixed costs due to high specialization. Such gains of scale can be superior to the ones found in large multinational hierarchical organizations.

2. Flexibility. Flexibility in satisfying market needs is another competitive advantage of the stellar organization. The multiplicity of mother companies implies a model in which the diversity of smaller companies is more capable dialoguing with the market, understanding its needs and providing quicker and more specific answers to the market demands.

3. Low cost coordination. An environment of intense external transacting may look as a negative aspect of the small companies operating in a network type of organization, as compared with large hierarchical organizations. However, in the stellar organization model, the presence of intense informal, personal communication and negotiation greatly reduces the coordination costs. As a result, this disadvantage of having small companies operating in a network is minimized, without compromising the flexibility inherent to the model. This aspect makes the stellar organization proper to the Brazilian and Latin cultures.

In Brazil, the Italian stellar organizations in the clothing industry are influencing clothing poles in Santa Catarina and Minas Gerais states. In the former state, the case departs from the stellar organization as the link with the market is centered in a larger organization, qualifying it as an outsourcing example. In the later, the municipality of Formiga is experiencing a strong development and Uberlândia has a project of implementation of a clothing pole working as a stellar organization. In both cases, the objective is to take advantage of the characteristics indicated in the gains of scale and flexibility items above, as a multiplicity of mother companies is encouraged. That is, these projects deliberately seek to reach the competitive advantages of flexibility and gains of scale.

As for coordination costs, it is also be a matter of concern especially in the case of Uberlândia, as a deliberate effort to strengthen inter-firm communications is being made by placing the companies in a single location, as well as by the adoption of the VPN (virtual private network) technology. Of course, the key aspect of lowering coordination costs is dependent on the cultural and historical components found in the emergence of the stellar organizations in Italy. Transposing such cultural characteristics to the Brazilian and Latin American environments stays as an incognito that still has to be elucidated [8].

Finally, the question of a single, recognizable brand can be a problem. The issue is open in Formiga's case, and the experience has being leading to concentration of low price firms. In Uberlândia, the pole's project intends to adopt a local brand (Confecções do Cerrado), in the molds of Made in Italy.

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