

NETWORKS OR BUSINESS PLATFORMS?

A Qualitative Approach on the Strategy for Inter-Organizational Relationships in Embrapa

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ABSTRACT

This study aims to analyze how the structure of skills' exchange of Embrapa Transferência de Tecnologia (SNT), aiming to verify if this exchange is similar to the network or business platform concepts. Regarding the methodology, a qualitative study was conducted by means of focus group's interview. The results showed that the concept of business platform still didn't fit in the understanding of cause-and-effect relations arising from the interrelationships between the market segments which it operates the Brazilian Agricultural Research Corporation (Embrapa). The most suitable in this case is the concept of firm networks, as it became evident what would be the central factor or the central technology in which all organizations involved work.

Keywords: *networks, business platforms, Embrapa.*

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1. INTRODUCTION

The networks which embraces the territorial dimension have been configured as a strong investment of regional and local development, being the focus of study, evaluation and development of the diverse forms of articulations between organizations. Putnam (2006) states that when choosing business strategy based on cooperation, the establishment of this process between companies generates challenges that need to be overcome, mainly in relation to information exchange and, also, the required commitment of social capital.

The interfirm cooperation can enable a series of companies' needed attendance, that would be difficult to satisfy in companies that act isolated (AMATO NETO, 2005). Among these needs, it can be highlighted the combination of skills and use of knowledge from other companies for various purposes, including the generation of innovations. In this sense, one of the newest forms to match competences is to do is turned to a central

technology or characteristic which ends up managing all the structure of skill exchange of involved organizations, that creates an architecture called business platform.

The business platform concept is applied in order to explain the relationships of the exchange of information between a complementary product and a product or core technology. Much more than a simple information exchange, that concept highlights the importance of the exchange of information, causing the organizations involved relate in a situation of complementarity (KOKURYO, 1999; GAWER; CUSUMANO, 2002; SUGANO, 2005; CARVALHO; SUGANO, 2012). It is precisely for this complementarity among organizations involved in Brazilian agribusiness market that it is intended to study the Brazilian Agricultural Research Corporation (Embrapa) under the lens of the concepts of networks and business platform.

In this context, the objective is to analyze the structural working of the exchange of skills of Embrapa Transferência de Tecnologia (SNT), in order to verify whether that exchange is more similar to the other networks or business platform concepts. The importance of this analysis can lead the works of Embrapa Transferência de Tecnologia (SNT) to a structure more adequate to their processes and that stimulate the generation of innovations.

Thus, the structure of this article presents a first topic of theoretical foundation discusses the concept of inter-organizational networks and following to start discussing concepts which embrace the term business platform. In the following items, the methodology used in the work and the analysis and result discussions of the studied case is developed.

2. THEORETICAL REFERENCE

In order to ease the understanding of the concepts which will be discussed later, the decision was to split the theoretical reference into two parts. The first part will discuss the networks concepts, whereas the second part will introduce the business platform concept.

2.1 Inter-organizational networks

Among the new organizational formats, the engagements, partnerships and relationships between organizations have been business opportunities which are enabled based on new intercompany arrangements or the so called inter-organizational networks of cooperation. It has been increasingly present the existence of networks or polycentric structures which embrace diverse actors, organizations modules linked themselves by means of the establishment and maintenance of common objectives and a compatible and suitable managerial dynamic.

The term network means interlacing of wires, ropes, twine, wire, with regular fixed openings for meshes, forming a kind of fabric. And yet, the networks are a type of texture, with substantive connotation (totality), assuming permanent movement, interlacing (transformation) and tension between stability and change (self-regulation) (FISCHER; MELO, 2004).

Fleury and Ouverney (2007) add that this term is observed in different managerial fields, in the form of interfirm, politics, social movements, social-psychological support networks, etc. and, even with this diversity of objectives, institutions, actors and resources, in all cases there are common elements, represented by challenges to establish managerial models capable to enable the desired objectives and preserve the lattice structure.

Lazzarini (2008, p.2) further suggests that a network is “a unit of people or businesses (technically named nodes) interconnected by means of several kinds of relationships”. The recent historical experience already offers some of the answers on new organizational forms. Different organizational systems intermediated by diverse cultural expressions are based on networks. The networks are organizations’ fundamental components (CASTELLS, 2006).

Thorelli (1986) and Powell (1990) argues that a firm networks is the intermediated between a simple business and the market, or that is, as Powell (1990) argues, that the individual position occupied by the company and the hierarchies present in the relationships between the parties. And, still a network can be seen as positions occupied by companies, families, or business strategic units, inserted in different context, commercial associations and other kinds of organizations (THORELLI, 1986). A firm network is the singular combination between strategy, structure and management process (MILES; SNOW, 1986). However, as Jarillo (1988) note, the networks are long termed, with clear purposes, between different companies, but interlaced, which allow them to establish or sustain a competitive advantage against the organizations out of the network.

In this way, if the networks are structures, agreements, with scope related to the competitive advantage, the circumstances which may lead to their formation would be linked to the need of that competitive advantage which is practically observed in all markets. In this sense, it seems that the firms must form networks in order to stay in the market (HOFFMANN; MOLINA-MORALES, F. X.; MARTINEZ-FERNANDEZ, 2007).

The networks are in the core of the organizational theory, and it can be noticed that a cross-firm network is configured in order to regulate the interdependence between complementary systems (production, research, engineering, coordination and others, what differs from aggregating them in a sole firm (AMATO NETO, 2000). The real justification and the proper networks base itself is to unite efforts in functions where it needs a bigger scale and bigger innovative capacity for its competitive feasibility (CASAROTTO FILHO; PIRES, 2001).

Based on that reflection, Amato Neto's (2000; 2005) understanding is adopted in this work, whose inter-organizational networks are the way to regulate the interdependence of complementary systems. Therefore, a network is an organizational module different of a big size firm which joints different functions under an only one common command, because the network reduces costs of system management, therefore, the strategic networks are an alternative form to organize goods and/or service production and can be used by companies in seeking for their better competitive position.

Finally, Castro, Bulgacov and Hoffmann (2011) mention that the last decades were marked by the rising of a reasonable number of studies focusing the contacts between organizations, so special attention had been given to joints promoted by means of inter-organizational networks.

2.2 Business platform

One of those new theories which rose based on the networks concept was the business platform concept. This concept appeared in the second half of 1990s decade when Jiro Kokuryo and Ken-Ici Imai by means of two works' publishing, Imai and Kokuryo (1994) and Kokuryo (1995), showed that organizations were cooperating and exchanging skills by means of a complex relationship architecture which revolved around a product or core technology.

This architecture, however, had a distinguishable peculiar characteristic, due to be open, that is, to permit that anytime new organizations accessed that relationships' structure and contributed with their skill in order to develop the product or the core technology. These two innovative works were models for the other studies, such as Robertson and Ulrich, (1998); Tatikonda (1999), Kokuryo (1999); Bresnahan & Greenstein (1999); Imai (2000); Hagel III (2002); Sugano (2005); and Carvalho et al., (2009), were conducted, what has helped the development the business concept platform and to show its relevance in innovation generation.

In Imai's work (2000), business platform is defined as a real or virtual space, an open technological architecture which determines rules and standardizations for interlaced technologies. By means of those interlaced technologies the relationship between suppliers and buyers become easy and complementary for both. In virtue of the existence of architecture, the different market can be easily coordinated and, thus, the platform can contribute to create external relationships and new types of markets (IMAI, 2000). Moreover, Imai (2000) states in his work that one must pay much attention on platforms' evolution, especially in their growth standards, in which their structure allows investments and ongoing business opportunities and provides high worth to their growth options, thus, creating a spiraling continuous growth.

Supporting this idea, Hagel III (2002) and Sugano (2005) highlight the importance of a core architecture to connect and coordinate the whole platform. This is maybe the main difference between networks and business platform concepts. Sugano (2005) suggests that the architecture of a business platform is the supplier's model of core business which is shared for all components or complementary. A business platform has the capacity to catch new information arising from their complementary and consumers' pairs and convert that information into business capacity which is accumulated in it. Similarly, Hagel III (2002) affirms that a leading firm provides the core infrastructure to develop other participants or complementary business in a business platform. Those other parties, similarly, bring to platform complementary parties (or modules) of business processes which complete the whole system.

Those complementary parties or modules of processes developed by different organizations work in order to complement to develop a core technology or process which is the main process that is the key factor that determines a business platform structure because, as Gawer and Cusumano (2002) note, few companies develop all or almost all the components required for their products. What generally in industries, is that specialized

companies appear to develop a certain big puzzle's components. In this situation, it seems relevant the concept of modularity (Hoetker, 2006), since a sole company may not have conditions to create competence or structure capable to generate value to one whole sector, making that company to have to cooperate with other companies, that is, have to work within a business complementary relationship.

Therefore, a business platform structure is a unit of organizations which interact within relationships of complementary competences revolved around a core technology or characteristic, so that that structure retains and provides innovation, complementarity and formation of base standards. Thus, it becomes liable of being adopted by other organizations causing an increasing expansion (IMAI, 2000; HAGEL III, 2002; SUGANO, 2005 and CARVALHO et al., 2009).

Providing a continuous spiraling expansion mentioned by the aforementioned authors are called positive feedback by Brian (1996) and Shapiro & Varian (1999) and it seems to be important to better understand how organization tend to gain when are structured as business platform. Shapiro and Varian (1999) states that the positive feedback has characteristics to strengthen the organization and weaken the weak, leading to extreme results. In order to illustrate that case, the authors used the example of *Apple* system against the system formed by *Microsoft* and *Intel*, the *Wintel*. The positive feedback worked in the extension of the sales of personal computers of *Wintel* increased in Market, people found *Wintel* system increasingly attractive and *Apple* system decreasingly attractive. In this way, success creates success and failure creates failure. Brian (1996) and Shapiro & Varian (1999) state that a fundamental characteristic of the positive feedback is that the connection value between relationships depend upon the number of people already linked. For instance, the more people using certain system, more people will want to use such a system to the detriment of another system. Therefore, when the relationship or information exchange reaches a critical mass of users that feeds itself to the detriment of other relationships which lead to a negative feedback or a negative spiraling growth.

Before that, one can understand that the business platform concept is closely related to the fact that each company has a competence of difficult imitation and expensive adoption by other company, according to the Resource Based View, developed mainly by Barney (1991), inspired by the Wernerfelt's work (1984). That makes the companies to cooperate and exchange resources to compete and make the business branch which are in increase as a whole and provide an individual growth of each component company. Thus, the structure of a business platform becomes a favorable environment to bring innovations which consequently are the fuel to a continuous growth of all structure.

The importance of this structure as mechanism which stimulates and facilitates the creation of innovations is that, as Lastres and Albagli (1999) argues, a company does not innovate alone, because the information and knowledge sources may be situated inside or outside of it. That process is featured because is discontinuous and irregular, with concentration of outbreaks of innovation, which will affect differently the various sectors of the economy in certain periods. In addition to not obey a linear pattern, regular and continuous innovations also have a considerable degree of uncertainty, since the solution of existing problems and the consequences of resolutions are previously unknown. Reveal, on the other hand, a cumulative character, considering that the ability of a company to perform changes and advances, within an established pattern, is strongly affected by the characteristics of the technologies that are being used and the experience accumulated in the past (DOSI, 1988; LASTRES, 1994; FREEMAN, 1995).

Therefore, the innovation process an interactive process, conducted with the contribution from several economic and social agents who possess different types of information and knowledge (LASTRES; ALBAGLI, 1999). Combined, both the knowledge gained, with advances in scientific research, as the needs from the market led to innovations in products and processes and the technological and organizational changes at the base of a company, industry or country (LASTRES; BUFFALO BILL and, 1999). Thus, a business platform contributes directly to generate innovations since in this structure organizations work in a relationship of complementarity and interdependence around a central feature. To the extent that an organization develops an innovation that adds value in this central feature there is also a positive effect on chain that ends up improving other organizations and thus stimulating the innovative process as a whole.

3. METHODOLOGICAL ASPECTS

Regarding methodology, the qualitative research was chosen in this article due to show itself the most suitable to contact the phenomenon nature, according to its epistemological aspects. This type of research is of particular relevance to the study of social relationships due to the pluralization of the spheres of life (Flick, 2009). According to Flick (2009), it is aimed to analyze cases concrete in their local and temporal peculiarities, starting from people's expressions and activities in their local contexts.

The analysts' body of the Planning and Business Management of (GPN) da Embrapa Transferência de Tecnologia (SNT) takes part of this field research. Currently, GPN has been moved to the Business Secretariat of Embrapa, Central Unit situated at Embrapa Headquarters, and it was compounded of a vice-manager, a supervisor and seven analysts, totalizing nine collaborators. Unprivileged levels in this study refer to the Vice-Manager, whose assignment is to coordinate, and to the area supervisor for whose assignments are next to the Vice-Manager. So, analysts of the Business and Planning Management were selected carefully, in number necessary for application of research tool, because it is the technical framework of Embrapa technology transfer, more specialized in the subject of study and, also, by the fact that this unit is the largest amount of royalties collector from the respective turnovers of the following performed at Embrapa. Thus, four analysts were effective participants of the survey among the possible seven, because of the time they had in the industry, as well as the expertise in the area.

In this way, in order to collect data, focus group was used due to allow a space for opinion enhance to orientate a future investigation of doctorate thesis, because Freitas and Oliveira (2006) suggests that the focus group support hypotheses generation, the evaluation of research and populations' situation, the development of interview and surveys' development and the results' interpreting. Moreover, according to the same authors, it permits data collection from group interaction, besides having a high value in collected data, because provides to researcher validity and conviction in collected data.

A focus group interview occurs with a small group of people on a specific topic. The minimum number is four people (Freitas; Oliveira, 2006) and, as Flick (2009) note, generally, the groups are formed by up to eight people, who take part of the interview for a 30 minute to 2 hour period.

In order to facilitate data collection and analysis, all interviews were filmed, longing approximately 50 (fifty) minutes. However, before the conduction of the focus group interview, the procedure was explained and an informed consent form with the interview guidelines was attached.

The consent form signed by the respondents informed on the theme, the research method, the equipment used. In addition, it cleared that participation would be volunteer, no offering risk or harm to the participants and at any moment, the respondent could refuse answering any question or give up participating and withdraw their consent. Finally, the researcher's data were informed, in case of any further issues, and it was cleared that there would not be any financial compensation, where the relating benefit was to increase the scientific knowledge for Social Sciences.

Before presenting the questions, a summary more technical on networks and business platform concepts was done, according to the renowned authors here mentioned. That was necessary because many of the respondents claimed for a better elucidation of the two concepts, so that issues could better represent Embrapa works.

For the location of the focal group, it was reserved a meeting room to achieve a quiet environment, suitable, comfortable and to allow that the members were well positioned, "U"-shaped, enabling the recording of the image of all.

Based on Flick (2009) and Freitas & Oliveira (2006), in order to treat data, an analysis of responses' content was conducted, allowing comparison; the systematic focus on the study topic of interest; the analysis of section words and meanings; context in which the ideas were put; internal solidness, frequency and extension of comments; responses' specificity; and great ideas.

4. ANALYSIS AND DISCUSSION OF RESULTS

Firstly, interview was started by means of first question to participants, according to the question list in Appendix I that approached the main business in Embrapa. One of the respondents said that the main business of SNT are the cultivars, but when asked about Embrapa as a whole, the answer from other analyst was that in a wide view would be 'technological solutions' and in a restrict view is 'R&D (research & development)'. It was observed that the response was agreed by other respondents.

The second claim was on how competent SNT is on that the analysts consider their main business and why. As seen in the excerpts (1) and (2) from the interviews, some of the problems faced by Embrapa are highlighted:

- (1) "the current situation is critical because the company has been losing marketshare (market share), and reported that when they had started their work with cultivars in Embrapa, she had 40% of the soy market, for example, and today should be around 8 percent because the market found new ways of working, ways

that Embrapa, while Science and Technology Institute, didn't bother, i.e. While the market (competitors) is concerned with an offer of technological packages, Embrapa continued and continues selling only seeds. "

(2) "the ability of the SNT to deal with that reality of cultivars is a tricky case, because in the past led Embrapa to what it is today, because you can't be stuck in this situation from the past, to which Embrapa is designed to a success that obtained at that time."

It turns out these excerpts, especially the first, that the issue of competition in research and development through the entry of other companies both public and private market as are diversifying and creating new ways to relate. This cooperation between companies have generated a relationship of complementarity so as to facilitate the emergence of innovations. As the excerpt (1) mentions, these partners are producing technological packages, i.e. several innovations developed by different organizations which together have greater bargaining power. You must seek out new ways of research and development through partnerships, exchange of competence and incorporation of diverse technologies, i.e. recent ways to innovate. According to respondents, the current reality is of diminishing space in main crops due to the disappearance of focus of Embrapa, regarding to the current arrangements for large companies relationships.

The third question was whether the resources that Embrapa has are sufficient for its superior performance. Sections (3) and (4) below show that Embrapa has features capable of developing cutting-edge technologies, but a difficulty in completing many of these technologies because Embrapa develops products not making the management of the chain until it reaches the final consumer because, according to the respondents is not the purpose of it and, also, Embrapa is structured to not do that.

(3) "there are things that research develops which, of course, are superior, but if the research is maintained in the company or whether it is passed to society only in fragmentary or discontinued form, you end up losing the excellence of research."

(4) "we can talk of responsibilities to perform only what Embrapa is able to do, or yet, the capabilities to make product reach the final consumer."

The following excerpt, taken from a speech of respondents highlights the need for partnerships to improve the innovative capacity of Embrapa.

(5) "Even in the area of cultivars we are outsourcing in this function. Besides, Embrapa needs partners who meet the market reality in order to precisely validate what is being developed in the research."

Still, regarding the question, respondents reported, as can be observed by stretch (6), that some improvement programs are three phases late by an issue fragmentation or discontinuance of financial resources

(6) "In a plant breeding program, for example, if you fragment the resource in 01 year, you lose half a cycle and the cycle means 04 or 05 years."

A measure that can minimize those problems is an intensification of public private partnerships aimed at the development and application of new technologies, so that both organizations do not lose their main characteristics. More information about private partnerships geared to the development of new technologies can be found in the work of Carvalho, Sugano and Tavares (2010).

Before the next question, the excerpt of the review from Rydlewski & Couto (2011)¹ published in the *Época Negócios Magazine* was read and it was asked how they face this information from the magazine, by analyzing the daily life of the business planning management. The excerpts (7), (8), (9) and (10) show that this question rendered certain discussion and it was of lesser consensus between the respondents.

¹ "Another pillar of the structure of the company is the concept of the network. Actually, where it reads Embrapa one must keep in mind the term partnership. The company is the axis around which gravitate and interact with dozens of State agricultural research centers, universities, foundations and private companies. The scheme, set up decades ago, remember the modern concept of open innovation (open innovation, in the jargon), in which the flow of knowledge circulates among distinct companies, each of which acts focused on your area of expertise (Rydlewski & Couto, 2011). "

- (7) “[...] with respect to the national research system, she is an axis yes.
- (8) “Embrapa is a Brazilian company of public financing, distributed throughout the national territory, who do cutting-edge research and international relations, soon in a macro vision she is yes, because as there is no other public company similar to her, Embrapa is situated in a prominent position.”
- (9) “[...] companies are entered in the network and there is no central axis. ”
- (10) “[...] She is part of a network and is a very important node on that network that brings together a number of other organizations.”

The fact is that Embrapa as P&D organization of new technologies is an important and strategic axis for Brazil. Several organizations have partnerships and exchange skills with the research conducted by Embrapa. However, as seen in previous sections, this interaction needs to be fortified and expanded to continue gaining market, because the environment is increasingly competitive.

Another question was whether the Embrapa Transferência de Tecnologia partnerships to maximize their business and the performance of their final products. If so, if they believe that this is the partner organisations have superior capabilities. The excerpts (11) and (12) show that respondents are aware of the importance of partnering to complement the development of technologies and this is done in Embrapa, because the SNT develops/improves and partner foundations distribute for re-sale.

(11) "It is not that it does not hold capabilities, but rather, the fact that it does not have to stop some specific capabilities, because soon makes a division of labor for the external entities, as in the case of plant varieties."

(12) "The company has distinct" technologies that will generate the product which comes to the market, they are completely different in their development process, both development and transference, then the business and partnerships have to be distinguished. "

Moreover, excepting the cultivar which is very present in the SNT, the company works with many other areas in more complex contexts that of cultivars, as for example: climate change, hunger, food security, agro-energy, biotechnology, etc. For each of these areas the module is different and it would not be possible to work with so many different areas without partners with other organizations.

Thus, rescuing the context placed, was asked how the inter-organizational networks influence the results achieved by the SNT. In General, there was consensus among interviewees. They responded that Embrapa is networked and, regarding the genetic improvement, it is in 17 programs. Moreover, it has 16 business offices of SNT, which work in a coordinated manner as well as have a kind of "cell" which coordinates these 16 teams working separately. Respondents also mentioned that the SNT participates in integrated projects with other organisations and if it wasn't for this interaction there would be how to get the result that the SNT expects, when discussing transfer of product, or else would be very localized and hearty little for a turnover. In relation to research networks no problem to seek partnerships, because they are very well structured. However, it was noted by respondents that in relation to partnerships for business is still challenging due to differences in work processes and goals.

The penultimate question argued if respondents believed that Embrapa could be the provider of a platform of business of their technologies, with the power to influence the decisions of all actors participating in the platform. According to the respondents, analysts in relation to technologies Embrapa may be the provider, but still it is not wise to say that the business platform is completely incorporated and that Embrapa has influence over the other actors. It is important to emphasize because Embrapa has suffered competition from other companies that operate in the same market niche and also search research and development of new technologies in areas that Embrapa operates.

More important than the excellence is the ability to change skills to expand the capacity to generate innovations. At this point the Embrapa is still in phase of development, as stated in previous sections which highlight the difficulty of conducting business partnerships. In an important business platform is the exchange of

competences around a central technology, namely, that seek the development of a technology used by all organizations involved and to develop this technology will cause a central development in all other organizations in a continuous spiral effect of growth. Embrapa exchange information innovatively with its own branches, regional offices and partner companies.

However, a business platform goes a bit beyond that information exchanged, is a junction that creates a relationship of complementarity among organizations causing them to work around a single central objective. It encourages and facilitates the emergence of new technological packages. The concept of business platform and is broader, for example, a set of companies that join together to buy cheaper raw materials or to develop a product cheaper. This is a typical feature of networked companies.

In this sense, Embrapa, with respect to the SNT, is longer under the concepts of firm networks, targeting for a more intensive exchange of information that lead organizations involved into a relationship of complementarity.

This becomes clear when the last question respondents. It was asked how the SNT managers seek to stimulate partners to adopt their current business model. In summary, respondents said that for the cultivars for a business model, but the existing model has to be restructured to facilitate training partnerships. For these officials of Embrapa, the managers must rethink this model, which is not appropriate, and suggested that the new interaction model must be based on innovation, whose pillars are people, technology, infrastructure and processes. Partnerships are essential role and are entered to enable this process.

A platform is when an organization creates an innovation which improves the functioning of another product, making that the two products are carried out at the same time as, for example, Dell processors. To create more powerful processors, Dell causes a development in a number of organizations directly or indirectly linked to this technology such as: games, image, sound, software. At the time when those organizations of related areas develop products that will need this core technology, for example, Dell processor, there is a complete list of complementarity and exchange of expertise that characterizes the final concept of business platform.

So, according to Kokuryo's (1999), Gawer and Cusumano's (2002) and Sugano's (2005) ideas, it was sought the hiring of the reality of enterprise of the case studied with the three characteristics that are fundamental for business platform, which were:

1. Based on the relationships of complementarity between a central product or technology, and other complementary products to this product or technology; and whose central product development entails a rearrangement of the system as a whole.
2. Another relevant point is to obtain the leadership of this platform, i.e. the necessity that the platform provider holds dominion over the platform architecture and specifications of the interfaces that connect the complementary to the central product, thus creating favorable conditions for the bargain platform provider, which shall hold the power of influence over decisions of all actors participating in the platform. This occurs due to the condition of dependency created in relations of the various agents of the platform with your provider.
3. The critical point of a business platform is to stimulate its adoption by a large majority to become a real standard in the market. When this occurs, surely this pattern will be accepted by your users until you reach critical mass, when then its expansion is automatically fed.

For the authors, this analysis of results, by means of the questions in the focal group, sought to investigate also the application of the concept of business platform, to explain the relationships of exchange of information between a complementary product and a central product or technology, or its application in the concept of inter-organizational networks. As a result the final theoretical this latter theory proved to be the more convergent, as discussed in the analysis of this study and summarized in the final considerations below.

5. CONCLUSIONS

It was sought to check the main features that are defined in a business platform, by means of questions developed in the roadmap of the focal group. So, given what was exposed in this article, one can realize that the concept of business platform still didn't fit in the understanding of cause-and-effect relations arising from the interrelationships between the segments of the market that Embrapa technology transfer acts.

The most adapting in this case is the concept of firm networks. This conclusion was reached because it was not clear what would be the central factor or the central technology in which all organizations involved work. Although, the respondents of the research have pointed to problems and believe that the currently practiced business model needs to be restructured, it is interesting to observe the ability of Embrapa's relationship with

their offices located throughout the national territory. This large networked structure was critical for the institution's development until the present time. However, as the respondents mentioned, there is a need for an expansion of this partner model with new organizations to which Embrapa continue to innovate in a market increasingly attractive and competitive with the entry of several types of public and private organizations, as well as multinationals.

In the present work, it is appropriate to recognize the existence of some limitations. Although, Flick (2009) and Freitas and Oliveira (2006) recommend two interviewers during the focus group research, there was only one researcher in the focal group. However, it was sought to minimize that fact with a filming of respondents because she allowed a further analysis of gestures and expressions, as well as its connection with the moment of verbal responses. Other limiting factors are inherent in the very nature of the focal group, which requires redoubled efforts for conducting, recording, transcription and interpretation of the discussions and can become a limitation of the method to identify the individual comments during the groups (FLICK, 2009).

Finally, it is highlighted that the use of a focus group in an academic research, allowed the collection various allowances to the refinement of future research on the topic. Once favored orientation of the individual in a new field; the new generation a chance, based on insights of informers; the evaluation of a specific population of study, as well as research sites; the development of interview programs, with allowances for future questionnaires; and obtaining interpretations on the part of the participants on the issues of research.

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APPENDIX 1

INTERVIEW GUIDE

- 1) For you, what is the main business of Embrapa?
- 2) How competent is Embrapa in what you consider is its primary business? Why?
- 3) In your perception, the features and capabilities that Embrapa has are sufficient for its superior performance? Give examples.
- 4) Planning and business of SNT is based on relationships of complementarity between a core product or technology, and other complementary products to this product or technology? Exemplify.
- 5) About actions for business, there is an article published in the *Época Negócios Magazine* (2011, p. 100, emphasis added), about Embrapa, which says:

“Another pillar of the structure of the company is the concept of the network. Actually, where it reads Embrapa one must keep in mind the term partnership. The company is the axis around which gravitate and interact with dozens of State agricultural research centres, universities, foundations and private companies (...) in which the flow of knowledge circulates among distinct companies, each of which acts focused on your area of expertise.”

How do you see this affirmation of *Época magazine*, analyzing the day-to-day management of business planning?

- 6) The Embrapa Transferência de Tecnologia partnerships to maximize their business and the performance of its final products? If so, do you believe that this is because it doesn't have some capabilities that partner organizations hold? Exemplify.
- 7) Do you believe that Embrapa is the provider of the business platform of their technologies, with the power to influence the decisions of all actors participating in the platform? Exemplify.
- 8) How do the managers of the SNT seek to stimulate partners to adopt their current business model?
- 9) Finally, how do the inter-organizational networks influence the results achieved by the TNS?