

## Resource and Knowledge Transference Through Networks, Significant Assets for Rural Mexican Microenterprises

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### *Abstract*

*Organizations interact with different actors, some are part of the endeavor and others form part of the external environment and form networks with providers, consumers, political and social actors that give a meaning to their existence, and allow them to optimize resources, and take advantage of the knowledge and resources that are transferred from other partners within the network. This type of interaction allows rural enterprises to have distinct orientations of their productive actions and the ways in which they seek economic support with institutions and also guidance on how to commercialize their stock. The purpose of this research was to determine how social networks can contribute to the development of rural enterprises and their function as a key to obtaining different types of resources, as well as the reflection of this type of structure on the growth and permanence of these enterprises in Mexico. Results indicate that the first network is developed by family members and friends: knowledge is usually transferred from generation to generation, or among friends. Also, through professional networks technological, administrative, and marketing knowledge is transmitted, while contacts with other entrepreneurs, participation in trade fairs, knowledge exchange and access to new markets is attained while forming part of an institutional network. Universities share technical, specialized and management knowledge, among others. Government institutions also support entrepreneurs with financial resources, and Internet has become an intermediary for commercializing products.*

**Key Words:** Knowledge, Networks, Value Chain, Social Capital, Trust, Strategy.

### **Introduction**

The outcome presented in this article is part of the project entitled “The Role of Social Networks in the Development of Rural Microenterprises in Mexico” within the framework of the “Program of Support for Research in Technological Innovation” (PAPIIT), of the UNAM, whose purpose is to study the advancement in understanding the role and potentialities that social networks have in the growth of rural enterprises and the way they contribute to rural development.

To achieve such an end various companies that participated in RENDRUS (National Network for Sustainable Rural Development) were chosen. This organism forms part of SAGARPA (Secretary of Agriculture, Livestock, Rural Development, Fisheries and Food) and its aim is to organize the interactions between the rural entrepreneurs who have succeeded in the management and development of their company. In fact for RENDRUS, experience is a fundamental element in the formation of successful entrepreneurs. However, the accumulation of experience is obviously a very slow process and modifications to the environment result in that knowledge becoming obsolete quickly; so the exchange of

experiences with other rural entrepreneurs is an enormous opportunity to acquire existing proven experience in a very efficient way (SAGARPA, 2014).

In this sense the workshops organized by RENDURS become an instrument through which rural entrepreneurs are able to systematically learn from the successes and mistakes of other businessmen, and, above all, to reflect on their own experience and to identify the need for improvement (Red Nacional de Desarrollo Rural Sustentable, 2016 - 2012). And in order to present results the article is made up of several parts: introducing a review of literature, followed by the justification, problem, and objectives, methodology used to gather information, results and conclusions.

## **Literature Review**

In this postmodern age there are different strategies used to approach the creation, development and ways in which small businesses can survive. One of the options that entrepreneurs have is to gather together in the face of adverse conditions; this state is conceived as an emergence (Foucault, 1979). At present what has been found in applied research is that the structure formed by the interactions of owners and their families are networks through which entrepreneurs have had more opportunities to gain resources from government organizations and access to diverse channels of commerce and economic development (Arras Vota, López Díaz & Hernández Rodríguez, 2012). This fact is recognized by institutions and they are finding ways in which they can support the efforts of those persons who are trying to overcome obstacles in order to make their businesses long-lasting.

In Mexico economic censuses reveal, among other things, that small businesses dominate the economy. They represent 95.4% of the total on a national basis. Also, 42.7% of them have a lifespan of no more than 5 years (INEGI, 2014). This reveals the fact that in Mexico a large percentage of micro enterprises that are constituted every year tend to disappear (Baez Reyes, Cordero Lara, Hernández Flores, Sánchez Sánchez, & Carrillo Rendón, 2009). Therefore it is important to analyze the strategies they must follow in order to prevail.

Most of these small businesses have their roots in rural micro-enterprises, which are units of production of goods and services, where the businessman and his family participate directly, to give added value to their products, through agro-industrial processes of transformation of primary production, with the goal of taking their products to the modern market (Parra, 2000). This involves the processing and marketing of these products, which represent an alternative for the development of the sector.

So people, in the search of options to transform primary sector products and obtain better income, opt for the creation of a business because they have capital: knowledge of a productive process that allows them to generate an economic strategy and a working alternative for their family and other individuals who are part of the community. In this sense knowledge offers whoever possesses it the ability to act intellectually or physically, incorporating people in the way they interact and are organized in society (Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P. & Trow, M. 1994).

Also, organizations are constituted keeping in mind certain goals that are to be achieved; this means seeking results when performing productive actions that can be seen as knowledge processes whose infrastructure is based on culture, technology and the functions of the business (Sivan, 2000). In fact companies are described as a collectivity of coordinated capabilities (Prusak, 2001). The unit of analysis of these skills is knowledge, which involves explicit and tacit knowledge which are inseparable (Polanyi, 1943).

Explicit knowledge is knowledge that is expressed in a formal and systematic way; it is objective, rational and is encrypted. On the other hand, tacit knowledge is deeply rooted in the action and personal responsibility, values and beliefs within a given context; it is referred to as knowledge that only the person

knows and that is difficult to explain to another person (Polanyi, 1943). Due to the fact that tacit knowledge is possessed by the knower and hard to formalize and is difficult to communicate to others, it often is denominated “know how” (Nonaka, 1998).

Marwick establishes that socialization is about sharing tacit knowledge which is related to communities and collaboration. Tacit knowledge is typically shared by means of face-to-face communication; and it can become explicit knowledge when coded, so people can act in an informed manner in the process of production and creation of goods (Marwick, 2001). All of this involves technological learning, conceived as the accumulation of experiences of appropriation, design and improvement of technology in enterprises (Villavicencio & Arvanitis, 2006).

Also, when people interact in production processes, different dimensions of knowledge, involving knowing how and what to do, individually and collectively, are generated. And when documented and formalized, tacit knowledge is translated into explicit knowledge (Giraudeau, 2007).

Organizations are inserted into two arenas: internal and external, the latter in which it is inserted and interacts with other actors outside of their own areas of domain. All this leads to viewing organizations as complex political and cultural systems, whose interpretative dimensions vary depending on interests, conflicts and power games inherent to interactions in contexts of inter and intra organization (Arras, 2010), so they form part of an environment and are connected and form networks with providers, consumers, political and social actors that give meaning to their existence, and allow them to optimize resources, and take advantage of spaces and experiences of other partners in the net.

The above mentioned reflects the emergence of a more complex social and economic weave made up of associative forms and strategies of solidarity and reciprocity which have been built. Some of them are made up of rural stakeholders that have a new orientation for their productive actions, by giving an added value to their products. All this facilitates taking advantage of opportunities for them and can also attenuate the negative impacts caused by the reorientation of economic policies (Mora Delgado, 2007).

The social weave is incorporated, usually in the form of a network, which is composed of individuals interconnected through communication patterns (Arras, 2010). This type of structure becomes a technique that allows for the analysis of the total number of persons concatenated through some type of relationship, with frameworks that guide the actions of those who are part of this arrangement, as a result of negotiations among them (Mitchell, 1969).

In fact, through networks it can be seen that personal and inter-organizational relationships that an entrepreneur makes are the means by which he or she gains access to a variety of resources provided by other actors (Herrera Echeverri, 2009); the structure that is generated through these interactions is networks which are specific relationships and structures that generate confidence and discourage dishonest behaviors (Andrés & Salvaj, 2011).

In this definition one can observe the three components of networks: a) personal relationship between persons, b) the structure relative to the composition of networks (nodes and links) and c) **trust** as a central element that acts as the oil that smoothes the relationships within the network (Andrés & Salvaj, 2011), and it also builds social capital, which is conceived as the aggregate of real and potential resources which are linked to the possession of a more or less institutionalized permanent relationship network of mutual acceptance and recognition (Bourdieu, 1980).

### **Social Capital**

Social capital is composed of the social relations that allow individuals access to resources and the quality of these. Permitting them to perceive networks as a matrix of relationships of exchange or transactions,

which occur either individually or collectively, to develop, produce and distribute goods and services (Bourdieu, 1980). It is also made up of trust, reciprocity and cooperation (Durstun, 2002).

### **Trust**

Trust involves interaction between two or more people, in which one of them relies on certain aspects of the behavior of the other, under certain circumstances. The trusted one can be a person or a community, such as organizations or institutions. Trust is an expectation that allows a person to feel secure about the way the other will act for the benefit of all those involved (Nooteboom, 2007). In this sense, trust is an attitude that is based on the behavior that is expected of the persons involved in the established relationship. Thus trust has cultural and emotional support. The first is based on the principle of reciprocity, and the latter on the affection a person feels toward those people considered reliable. Such an attitude is expressed in behaviors repeated and reinforced with expressions that communicate that trust in speeches and actions by which one delivers control over certain goods to the other (Durstun, 2002).

### **Knowledge Transference through Networks**

From the perspective of complexity all things that exist have connections among each other, so if one considers the presence of a collectivity of capabilities, a venture generates products in order to sell them. Even the smallest one implies the presence of a network in its simplest form, that of a chain with interactions with suppliers of raw material and consumers or the market where the supplier sells his products. This network of relationships is a sine qua non condition that allows microenterprise to subsist when inserted into a value chain.

Then, the first network, developed when starting a business is made up of family members and friends or people from the locality that produces part of the raw material. It may also be made up of other suppliers of inputs, as well as the market that is willing to acquire what they generate. This means that in deciding to develop their product they do not do it according to a market survey, but rather based on the raw materials that they have and what they know how to make. And as the business grows, they can attain support from public and private educational institutions by obtaining counseling or obtaining funding that will allow them to improve their production processes and be competitive. In doing so, they are introduced into a network through which they can exchange knowledge (Arras Vota, Hernández Rodríguez, & López Díaz, 2012) which is transferred with the support of local codes which facilitate their understanding: this type of knowledge is known as *sticky skills* (Asheim, 2007).

It is also important to stress that the effectiveness of knowledge sharing is determined by the maturity of informal and formal social networks and a shared information and knowledge-based network in a particular work context. Also, they are key organizational structures for effective and efficient knowledge sharing and transfer (Bosua & Scheepers, 2007).

Therefore, the size of the network and the position of the entrepreneur determine the amount of resources that are available through that structure. Moreover, personal relationships that are established as a member of a network are a means for finding legitimacy and credibility, acceptance and attributes required to develop a business (Ripollés & Blesa, 2006).

Likewise, it is important to point out that the description of a businessman as a collective actor is incomplete if not taking into consideration the particular role played by the "invisible technology" that is formed by the management tools, agreement with the actors and the types of projects. These tools take on different forms, such as accounts of results, predictable financing, data, information about business sectors or geographical areas, manuals of entrepreneurship, type contracts, as well as records to raise funds (Giraudeau, 2007).

There is agreement in literature that the organization of knowledge sharing and transfer inside a firm and between firms has a positive influence on the firm's absorptive capacity defined as the capability of a firm to recognize, acquire, transform and integrate new knowledge from the environment (Sawyer, Evans, & Bosua, 2014), through networks. These can be informal or formal. Taking into consideration the definition of institution (Pratt Fairchild, 1984), the institutionalized networks are the ones constituted officially and which attain certain socially recognized and authorized ends. Also professional networks are formal ones, constituted by members of a certain profession or domain that gather to gain benefits or resources as a group.

### **Value Chain**

Moreover it is essential to point out that micro-enterprises, when forming networks, can employ their links as value chains through which they can transfer knowledge and achieve mutual enrichment (Arras Vota, 2010b).

A value chain is a set of actors (Acosta, 2006) and actions (Porter, 1985), that generates added value for a product, through processes, links, information, knowledge, logistics and commercialization (Acosta, 2006), from the stage of production to consumption and includes any activity that goes backward or forward from the stage of processing (Ickis, Leguizamón, & Metzger, 2009).

### **Strategy**

People at the beginning of their venture decide to give added value to their products in order to achieve competitive prices and ways to market their products. To accomplish their ends, they search for different ways which facilitate reaching their goals. These ways or means through which they aim to achieve their goals are called strategies. There is empirical evidence that shows that among the strategies of power in organizations one can find knowledge and information (Koslowski & Shmuel, 2005), as well as the establishment of links between the organization and its contexts (Bartoli, 1992) within which networks of relationships can be formed and can become the point of support for the company's progress and its links to the environment that allows them to remain as open systems.

### **Problem and Objectives**

Small and medium-sized enterprises are important sources of prosperity and employment and are viewed as critical to the economic development of a country (Evans, Sawyer, & Bosua, 2013), some of them have their own networks and others partake of institutionalized ones. This was the criteria used to select the group of participants in the survey that was part of the institutional network RENDRUS (National Network of Sustainable Rural Development) in Mexico. They were chosen for this network because they were formally constituted and were successful. Therefore they wanted to join them together so they could share experiences and knowledge.

The study of enterprises in different states in Mexico: Chihuahua, DF, Coahuila, Guanajuato, Michoacán, Oaxaca, Puebla, Queretaro, Sonora and Veracruz, was carried out by researchers in the field keeping in mind the aim of determining how social networks can contribute to rural enterprises and their function as a key for obtaining different types of resources and knowledge, as well as the reflection of this type of structure on the growth and permanence of these enterprises in Mexico.

This research was part of the project, "The Role of Social Networks and the Development of Rural Micro Enterprises in Mexico" within the framework of the Program that Supports Research in Technological Innovation (PAPIIT) at the National Autonomous University of Mexico (UNAM).

## Justification

To study the way in which social networks contribute to rural enterprises and the role they play in growth, development and knowledge in rural areas, as well as to identify the ways in which this type of structure is a tool of learning, innovation and the survival of micro-enterprises, is important because it will generate information and understanding of the reality of such organizations, and find ways in which more than 57.3% can exist for over 5 years (INEGI, 2014). It is also meant to diminish the trend of disappearance of new enterprises constituted every year in Mexico (Baez Reyes, Cordero Lara, Hernández Flores, Sánchez Sánchez, & Carrillo Rendón, 2009) using the strategies of those that prevail.

## Methodology

This research is done from the perspective of case studies which contribute to broadening and deepening knowledge on individuals and groups, as well as organizations and related phenomena (Yin, 2003).

The methods used were analytical-synthetic and theoretical-deductive. It can also be said that the research was applied and descriptive, of a field and bibliographic mode; using qualitative methods due to the fact that the data were gathered with qualitative techniques (interviews).

Interviews were made face-to-face to the owners of the businesses and they were recorded and transcribed. Some quotes were used to pinpoint some of the crucial aspects of the findings that emerged from the data analysis. All of the businesses studied are small, having fewer than 15 employees.

## Results and Discussion

The way the analysis will be addressed will be from the viewpoint of various types of networks, beginning with personal networks, followed by professional ones, continuing on to institutional networks and the weight that this dimension represents to the network. Subsequently, the mediation of other actors in the network will be raised; among them are government agents and competition.

### a) How knowledge is obtained through personal networks

Personal networks involve family and friends and the nature of these relations enables the exchange of tacit knowledge that is passed from parents to their children and is shared through experience and physical closeness (Cecia & Iubatti, 2011). It is also generated when a person transfers his know how to his/her siblings during the productive process. This can be observed in different endeavors that form part of the study.

There are companies in which resource knowledge is transferred by the father; such is the case of Dulfimez and Paracho. Instead in Maxe's case it is the mother who gives added value to what the father produces in the field and she transfers knowledge to her daughter. In the same sense of organizational learning are the cases of Semitas del Valle and Don Mateo Mezcal. Let's hear it in the voice of the actors:

*"...my grandparents knew how to make candy, also my dad knew; nevertheless at our home we didn't do that type of work, and I asked my dad to teach me, because if he didn't he would take the secrets to the grave. And that was when I started; I said 'I'm going to bring my fruit, because we make all types of crystallized fruit.' I work with the process that he taught me and other procedures for different fruits like chilacayote." (Dulfimex, DF).*

In the case of Paracho Artesano the transference of knowledge is also generational

*"Look, my business is artisanal; I make traditional toys like the balero, yo-yo and pirinola. I am a small manufacturer of handicrafts, nothing more. My dad is a craftsman and since I was small I learned the trade of handcrafting."*

Was your grandfather an artisan?

*"No, my father's uncle was an artisan and he taught him and my dad trained me." (Paracho Artesano, Michoacán)*

Generational learning is manifested as part of the life process of micro-enterprises as can also be seen in the following cases:

- *"The company started in the forties with my grandparents, then it was passed to my parents and I have had it since 1982. And in 2005 it was constituted as Semites of the Valley. I established it as a society of rural production, which is a family business and knowledge was transferred from generation to generation. Also decisions are always made within the family." (Semitas del Valle, Jalisco)*
- *"We are a society of rural production; it is a family business and knowledge of how to make the product was passed from generation to generation. Also decisions are always made within the family." (Mezcal Don Mateo, Michoacán)*

An important aspect to be considered is the fact that people having to deal with adverse conditions and the need for financial resources opt for the creation of a company because they have capital, knowledge of a productive process, that was also transferred from their ancestors and allows them to generate an alternative form of employment and income for their family and the community. This is reflected in the Juvelin Company of Chihuahua in the following manner:

*"Well, I started in 1991 as an outcome of my divorce. My mom took my children and then I asked myself: 'What will I do here alone' but I learned from my grandmother to make some soap, with plants she used to prevent hair from falling out. So I started making all the products that my grandmother used to produce." (Juvelin, Chihuahua).*

These cases can be related to the way in which knowledge allows whoever possesses it to act intellectually or physically, incorporating people in the way they interact and are organized in society (Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P. & Trow, M. 1994).

### **How the nuclear and Extended Family Supports with their Relations and Access to Different Markets**

Another situation present in the cases studied regarding the enterprise of the nuclear family and the processes by which they give added value to what they produce in the primary sector is the support of the extended family in order to have access to a wider market in which they mean to commercialize their products:

*"My dad had planted peanuts all of his life, then we started to realize that in giving added value to the harvest, we could increase its value and earnings. And we have family here (in Hermosillo). Some have food businesses; others are serving in the government. Therefore my mom started to make some peanuts with sugar in a deep pan. And we said, 'Let's see what comes out.' So we started to distribute them in small quantities with my uncles and aunt." (Maxes, Sonora).*

So another resource that is exchanged in this personal network is made up of their relations and points of sales that their extended family has and where they can commercialize their products.

In addition, family may provide economic resources so that micro-enterprises can start and continue, or lend their collateral for a loan. Let's listen to three actors who are supported in this way:

1. *"The first 5 years of business were very intense. It was a difficult stage. My mother began to sell creams. She sometimes earned more than us, so she lent us money in order for us to move forward. After those difficulties the family was more united, and we began to progress." (Nature In Company, Guanajuato)*
2. *"I got funding in the municipality, but they asked for guarantees, so my dad lent me his truck so I could use it as a warranty, because I had already sold my car, so they gave me the first twenty-five thousand pesos." (Nanines, Chihuahua)*
3. *"We registered with the help of my family's resources, which supported us in carrying out the family project. We bought our tools to work, our vans, trucks, scales, all that. Thus, we formed a cooperative society in 2004." (Unidad Amiga, Coahuila).*

Another important aspect that the family provides is support in the process of the business startup, and it can be observed in the following cases:

*"We were struggling with economic problems, and at that time my children were in high school and in college. One day my wife woke up and said, 'I had a dream where God told me to make chili sauces.' I asked her, 'Are you out of your mind?' Well she started to practice until she could standardize the product. I myself searched for containers, labels, boxes, and all that is needed, and in a year we started to sell it to our friends and families. They began to ask for a lot. I remember that I used to buy 50 containers in a bag and we filled them, and went to sell them. I had no car, I went by bus. All this is history that today makes me laugh because now we buy from 20,000 to 30, 000 containers. We are happy about that." (Salsas Pirata de Córdoba, Veracruz).*

This case describes the process of the family in a crisis situation, the trust between spouses, as well as the development of the product and the network of the nuclear family, the extended family and friends who are the first consumers. Friends can constitute a source of knowledge in the process and resources; this can be observed in the next case:

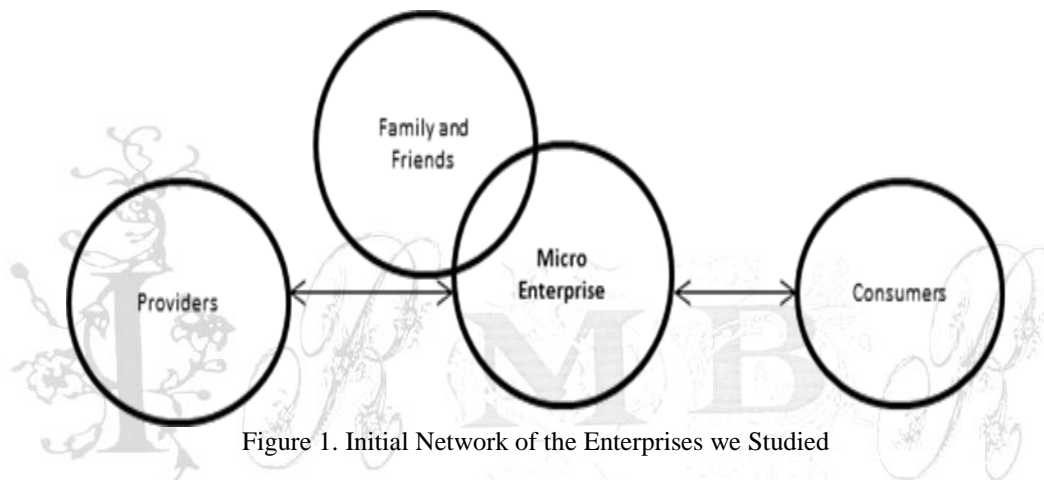
*"We started making homemade wine in the family, maybe due to inheritance; for various reasons we like wine. Around eighteen years ago we learned from an Italian to make wine and for many years we did it in a family way, also involving other families, until a friend came and told us that another person had a plantation of vineyards wanted us to make his wine. We said well if he wants we can teach him the little that we know. And so we did for the first year. The second year, the man had already bought fifty thousand dollars worth of equipment and that was when we learned how to make wine commercially." (Pinesque, Chihuahua).*

Cases that have been presented in this section are related to personal networks, which are primarily made up of the family and friends of the entrepreneur, and they reflect the commitment of the actors based on feelings in terms of shared values and emotional understanding (Johannisson, 2006). In addition is the exchange of knowledge between the actors involved, whether family or friends; their relations are so close that they facilitate the exchange of tacit knowledge, from parents to children or friends, in a safe environment, as seen in the case of the Pirate Sauces and this knowledge is shared by experience and relationships of physical proximity (Cecia & Iubatti, 2011). All of which will produce social capital which

is composed of the social relations that allow individuals access to resources and the quality of these (Bourdieu, 1980). And also it is made up of trust, reciprocity and cooperation (Durstun, 2002).

In general, a form of network that includes relations with family and friends can be seen in the first stage in the life cycle of enterprises and among them the first sales are generated. This group tests the products and supports their consumption and also makes its points of sale available if they have a business. These are areas in which it is possible to open the market, such as the case of Maxes. This type of network is presented in Figure 1 in which one can appreciate the presence of family and friends, as well as providers and consumers that can be found in the first phase of the enterprises analyzed.

Also it is the start of the value chain that is considered a set of actors (Acosta, 2006) and actions (Porter, 1985), that generate added value to a product, through processes, links, information, knowledge, logistics and commercialization (Acosta, 2006), from the stage of production to consumption and includes any activity that goes backward or forward from the stage of processing (Ickis, Leguizamón, & Metzger, 2009), for each one of the endeavours.



#### b) How knowledge is Transferred through Professional Networks

Networks extend and include external performers who support the activities of the micro-enterprise, due to the fact that they can perform together in negotiating and gaining access to resources and to greater knowledge, such is the case of the unions of producers, including those engaged in the production of a given crop, be it avocados, grapes and its derivatives, as well as straw for making brooms, among others.

Whoever directs a project seeks to join a network of professionals in order to access resources and benefits that would not be available or that would be more difficult to gain access to from outside the network. It should be noted that the relevance of networks is not restricted to the start of the venture; entrepreneurs continue using networks in search of guidance, discovery of opportunities, access to other tangible and intangible resources and for the solution of problems, at the same time seeking legitimacy and social acceptance (Herrera Echeverri, 2009).

Likewise, it is considered important to highlight that business growth is achieved through strengthening organizational inter nets that are conceived by means of appropriate interpersonal communications between the representatives of the enterprises, since thanks to those, the links are maintained (Casson, 1982). Therefore it is important to include in the network relationships successors to entrepreneurs (Herrera Echeverri, 2009). All of this can be a strategy for the continuance of the endeavor.

In terms of unions of producers, with regard to wine production, according to Pinesque's owner he states that they constituted a system product which is:

*".. a civil association whose purpose is to bring together all the producers and it seeks on one hand to join the effort of the producers and on the other to strengthen those producers. Then for example this month we just started a course with the University of Tarragona, Spain so we are all in the process of learning technology."*

*"This product-wine system has been supported by Produce Foundation and we traveled to Chile and Argentina where we visited vineyards and what we saw is that when people are organized good things can be done and teamwork is encouraged." (Pinesque, Chihuahua).*

This case reflects that when producers join together, as a strategy, they are strengthened in terms of resource management such as in the case of the course with the University of Tarragona, Spain, where they are acquiring knowledge about technology and it is achieved by the transfer of the administrative knowledge of marketing which defines the type of grape that they need to plant in order to meet consumers needs and gain their acceptance. Likewise, they achieved institutional economical support to make their trips to South America and this also encourages teamwork.

Other examples of relations between producers are in Michoacan with avocado producers, who are grouped in order to gain information and knowledge about the fruit, its markets and derivative products. They perform strategic alliances with firms of consultants, in order to continue to receive information and access to larger markets within certified companies. Also the directors of these companies with a better level of preparation in English access international markets more easily.

*"We are members of the Association of Avocados, and are registered as certified orchards, which is a matter of health. The Association of avocados has served us greatly since it works so we are able to export our products." (Avocado Orchards, Michoacan).*

Likewise, in Coahuila there is the Cooperative of Straw for Brooms, which is handled by a family and they buy the special straw from all producers; then they sell it to a marketer in a municipality of Nuevo León who exports it to the United States for specific uses. This not only generates national networks, but involves companies from other countries.

*"Well, we started, as workers, we began to work with my brother who had been working in this business for a while., Afterwards through his contacts with people from CADEREYTA, Nuevo León, our scene was expanded and we started buying broom straw from producers in the area where we live and were helped in the administration by CADEREYTA." (Sociedad Cooperativa Unidad Amiga, Coahuila).*

*"We teamed up and created a Fund for the protection against the fall in the price of coffee at the national level, and to obtain financing and protect mostly small producers, with representatives of political parties, with whom we negotiated programs and budgets. Since this organization started, now projects, forms of cultivation and small legal economic units are promoted in order to reduce poverty in the countryside. Our product is sold at Wall Mart and it has been improved in terms of quality, record and competitiveness for exportation purposes. We are certified." (Cafe Oaxaca).*

In this area it can be said that through professional networks micro-enterprises can achieve different types of knowledge such as:

1. Technological.
2. Marketing.

3. Economic resources to visit other countries where their crop is produced in order to acquire new knowledge.
4. Administrative.
5. On the process of certification and exportation.
6. Financing.
7. Forms of cultivation.

### c) Knowledge Transfer through RENDRUS, an Institutional Net

RENDRUS meetings were a meeting point for micro-enterprises, whose owner considered their participation positive, especially for having had the opportunity to meet other producers and participate in fairs in other states of the Mexican Republic. They obtained other types of resources besides information at these meetings..

*"Look, for example what helped us is that our product has been taken to other parts of the State in search of markets. We won the contest here in Chihuahua and my husband went to Tijuana through RENDRUS and I went to La Paz to see if we could find suppliers or consumers and we got a new buyer in Tijuana. For that reason I say that to participate in RENDRUS was something positive. (Procesadora Pecanera)."*

In addition, in Chihuahua four of the companies that participated in RENDRUS maintain ties with each other and two of them have managed to support each other on production processes, as is the case of Don Felix Vinata which gives added value to the waste of the grape used for wine from Pinesque by producing mosco, through the distillation process. In addition, whoever directs Pinesque supports the entrepreneur of Nanines, who in turn was influenced to participate in various forums by members of Conchos Dairy, and all of them interact in CANACINTRA (National Chamber of Transformation Industry).

The entrepreneur who started NANINES believes RENDRUS helped him because he made many contacts with entrepreneurs from around the country. He also said that he participated in this event because:

*"The owners of Conchos Dairy had told me to participate in RENDRUS; they had had that experience and SAGARPA (Ministry of livestock, agriculture, fishing and food) invited me and I joined the network and made the most of it." (Nanines, Chihuahua).*

This means that the invitation of SAGARPA was supported by the recommendation of other entrepreneurs that had had the experience, which leads us to consider that action in terms of the different types of relationships that occur within the network and that modify the intra-organizational dynamics of the company by creating a space where innovation of traditional activities can occur in an unusual way (Brass, Galaskiewicz, Greve, & Tsai, 2004) (Faems, Van Looy Debackere, & Debackere, 2005), such as the mosco distillate that can be brewed thanks to the relationship between the owners of two different endeavors, or different presentations of the product generated when a company defines the needs of its market (Cecia & Iubatti, 2011) turn out to be positive.

Another case is that of Vitamoril of Puebla an enterprise that believes it benefited by its participation in RENDRUS in the following way:

*"By participating in a trade fair in Chiapas and in Baja California, where he had contact with producers of the moringa seed from Tamaulipas with whom we exchanged information about the price of moringa oil. Participation is recommended just for the exchange of experiences in the events one can attend." (Vitamoril, Puebla).*

It can also be stressed that the SAGARPA delegate who is responsible for the directives of RENDRUS got

involved with some of the producers and participated with them in their processes. This is what the producers, in relation to the matter said:

*"The delegate of SAGARPA ended up helping us, even in the certification process." (Café Oaxaca).*

In that sense, it is considered that the dynamics of economic activities is largely influenced by the multidimensional characteristics of networks.

So some of the resources exchanged through participation in RENDRUS are:

- a) Extension of the production equipment without the need for making an investment.
- b) Support of the ones that are in a more advanced state in their business for others that are beginning.
- c) Access to new markets.
- d) Contacts with other entrepreneurs from all over the country.
- e) Participation in trade fairs.
- f) Exchange of knowledge.
- g) Knowledge and processing of certification.

### **Institutions of Higher Education and Government**

As one can see in some of the information given by producers, they have attained support in technological knowledge through universities; such is the case of Pinesque, and the people from the professional network in which they were involved. They took the course with the Terragona University in Spain with funding from Producer Foundation. As a matter of fact it can be said that most of the cases studied in the states where the research was done had links with governmental and/or educational institutions. Let's see what some of them had to say:

*"I was studying management and I had a subject on how to develop projects, so I constructed the plan with the teacher. I focused on the Government, and was in the Youth Center in Hermosillo. And then I made another project to apply for a loan to the Government. SAGARPA supported me with the first machine and in the construction of the workshop with \$100,000." (Maxes, Sonora).*

Maxes' case shows the support of the university when she was a student, and then the aid of a government institution by financing her project. Other cases show how universities with their extension plans assess producers:

*"I have developed new products, because I took courses at FONAES (National Solidarity Fund for the Support of Enterprises) and I went to the fair at the University of Chapingo. I take courses because I'm interested in learning and developing new products. I only studied up to the second year of primary school." (Juvelin, Chihuahua).*

In the case of Pronopval Valtierra of Guanajuato, a network was built from personal contacts among which some represented governmental and educational institutions which contributed with knowledge and financing. Also new relations were made with other actors who had the power of decision on the resources required to finance the project which was an important development since it encompassed the entire production chain.

*"The project which had a value of seven and a half million pesos was first supported by Produce Foundation in Guanajuato. Their aid was made through the management and development of the project. Also the departments of agricultural and economic development worked with us on the social process. And the first instance financed the first part of the project. Social Development helped them in organizing the*

*groups of ladies that removed the thorns from the cactus and financed the centers in which the ladies could work.*

*The office of the city mayor gave them machinery that they had available, so they could make the plant project which was assessed by the University and the CONACYT center from Queretaro.*

*The rest of the investment was borrowed from FIRCO (Shared Risk Trust). At that moment we were able to start and to pay our debt. Definitely, as producers and as a cooperative what was achieved was done through relationships with acquaintances, and with others with whom we started out." (Pronopval, Guanajuato).*

A member of another cactus industry tells how their products were developed and how they were supported by government institutions and by capable persons who knew how to work with the processes they needed to start their business.

*"For the development of the cooperative the community needs and the preservation of natural resources were taken into account, with the support of the Ministry of the Environment. To develop the product in brine we hired the services of an engineer who had worked for a very well known food processor. With his knowledge he gave us the support and trust for the development of our production process. Then for the dehydrated cactus and sweets made from cactus we were trained by an engineer specialized in foods. She developed an innovative product, high in fiber. This training was granted by the SEDEREC (Rural and Fair Development Secretariat for Communities)." (Nopal Mexico, DF).*

*"We got financed by Social Development in Guanajuato. Our first support was \$30,000 pesos so we were able to buy our first stoves." (Conservas Santa Rosa, Guanajuato).*

In the cases shown above it can be observed that the universities share technical, specialized and managerial knowledge, among others. And government institutions support the entrepreneurs with financial resources that can be used for machinery or training personnel, as well as organizing human resources and financing the centers where they can work. They also helped with their knowledge on how to harvest the crop, focusing on care for the environment.

### **Mediation of other Actors**

Another type of actors involved in the formation of networks and trust, social capital and invisible technology, are NGOs (non-governmental organizations) who can provide training and some aspects of management, as well as support for attending fairs and finding consumers who define the type of products that the entrepreneur will develop. All this has an impact on the processes of transformation that the companies make.

### **Non-Governmental Organizations**

In order to empower the people living in certain areas of the country, there are non-governmental organizations that move to these entities and transfer knowledge on different production processes to those who choose to attend their courses. Such is the case of Conservas Santa Rosa in Guanajuato. They narrate this situation in the following way:

*"We started in the year 1998, supported by a civil association called Conservation Bodies. This civil association came to our community to promote such projects so that we could take advantage of the natural resources we have, such as wild fruits, which do not need fertilizers, which occur in a non-controlled natural process, (pears, apples, plums, peaches, among others). They started training us to make our first products: liqueurs and jams." (Conservas Santa Rosa, Guanajuato).*

Likewise, they urged them to formalize their venture in 2000 and they succeeded. In this sense the NGO became a key for development in the consolidation of the micro-enterprise. It also carried out the procedures needed to get some help from the university by allowing two students to support their endeavor. In this case one can see how a NGO provides different resources:

- 1) Knowledge of the transformation process of the products of the primary sector in the region.
- 2) Making an agreement with educational authorities to achieve the inclusion of students to support the microenterprise.

### Trade Markets (Fairs)

Trade markets are spaces where many micro-endeavors unveil and market their products. They are an opportunity for some entrepreneurs to participate in these scenarios as marketing strategies. In the case of Juvelin products, it has been incorporated into a network with another four entrepreneurs who form part of an association and it is with them that they have achieved greater sales and the possibility of opening new markets. This has influenced the route of these companies that are part of this small network, and shows how their commercial activities have been strengthened since they have been participating together.

In terms of the owner of Procesadora Pecanera:

*"Thanks to our participation in the event of Tijuana, which was a trade market, we managed to expand our sales network in Tijuana and in Guadalajara." (Procesadora Pecanera, Chihuahua).*

*In 2006 we were invited to an expo in Chiapas by the Secretary of Agricultural Development of the State Government. There we got in touch with Toks, and they ordered 20,000 bottles. They gave us some input, the bottles and the labels, and we were responsible for the raw material. But we didn't know the number of baskets of Strawberry needed for that quantity of bottles. So that was our first time, our first fear. One of our friends who sold Avon products lent us some money and another went to work to Guanajuato City to get some resources to be able to fill the order for Toks." (Conservas Santa Rosa, Guanajuato).*

At present they are still suppliers for the enterprise Toks. So the trade markets were constituted as a meeting point between those who produce and those who purchase the products. This place becomes a resource as it is a means that has allowed micro entrepreneurs to commercialize their merchandise.

Similarly, in this case one can see the challenges entrepreneurs face in order to develop their initiatives; one of the most difficult barriers is obtaining the necessary resources to begin their business, which include information and financial capital. And it is even extended to the symbolic backing they get from the social legitimization of their performance (Herrera Echeverri, 2009).

Obtaining resources depends on the ability of the entrepreneur to create sustainable relationships of exchange with the source of goods or knowledge; this fact implies a relational nature in the entrepreneur and gives a social and economic character to the process of entrepreneurship (Herrera Echeverri, 2009).

In this case, it can be said that the producers managed to be socially legitimized when they were recognized, at first, by a company as important as Toks, to which they have supplied since 2006, and by their community who initially did not support them. In addition their store is a touristic one because the tour buses stop there with tourists on their way to Dolores, a city where the battle for Mexican Independence began.

Another Enterprise that through their participation in trade markets has been able to introduce its product into the market is Nopal Mexico. Let's hear their voice:

*"Through the participation in trade markets and meetings we have been able to position our product and establish business relationships with major chain stores (Comercial Mexicana, Soriana, Wal-Mart), enabling us to open our portfolio of clients." (Nopal Mexica, DF).*

### Suppliers and Consumers

Other actors joining the network are consumers that strengthen the company since they constitute a source of income that allows them to survive, progress and innovate. In the case of Pronopval, the Government of the State of Guanajuato became their customer and asked them to produce cactus in a different way and in a different presentation.

*"They asked us to produce cactus in a form of a strip cooked with water and salt and the container was a bucket. We also had to deliver the product directly to them. Being a provider for the Government gave us a way to reduce costs and pay other expenses, so we were able to make other products and began to innovate." (Pronopval, Guanajuato).*

They also export jalapeño chile to Germany, and green beans to the United States. Those products have to meet very specific specifications, in order to satisfy their customers.

*"A company from Germany came to see us. They wanted jalapeño chile which wasn't hot. Its weight had to be 9 grams, and its measurement 7 centimeters. They also wanted it in halves and in glass jars." (Propval, Guanajuato).*

For Pinesque, consumers determined the type of grape that they had to plant in order to satisfy consumers' needs. Let's hear the owner's voice:

*"In addition, knowledge of the market is being transferred first hand. This is related to the type of grape that has to be planted so that the wine is a bit sweet and people love it so it is very important that we communicate among ourselves so that producers strengthen wine varieties that are really going to succeed." (Pinesque, Chihuahua).*

### Internet

As a means of reducing distances and opening channels of communications Internet has become a space where producers and consumers can find each other as in the case of Pronopval. This endeavor is advertised on internet through the National System of Market Research and has obtained some clients for their products from the United States. In fact there are some cases that have made use of this resource and, when they receive the order, the delivery is made by parcel service. Let's see what women entrepreneurs of Conservas Santa Rosa of Guanajuato say:

*"Our shop is up here, but we only had Toks as a buyer. Now we are selling via Internet. One can sell what is produced to people who are interested in buying what we make. So we get the order and, because Multipack and Fedex are supporting productive projects, we send what was ordered using these means because we have an agreement with these organizations." (Conservas Santa Rosa of Guanajuato)*

Another company that sells its products through a virtual space is Vitamoril of Puebla.

*"We commercialize our products in: a) Trade markets, b) in the garden shop (located in the center of the city of Tehuacan, Puebla), c) in the back room of CINIA, an association of single mothers located in the city of Puebla and d) in the virtual shop that we have created." (Vitamoril, Puebla)*

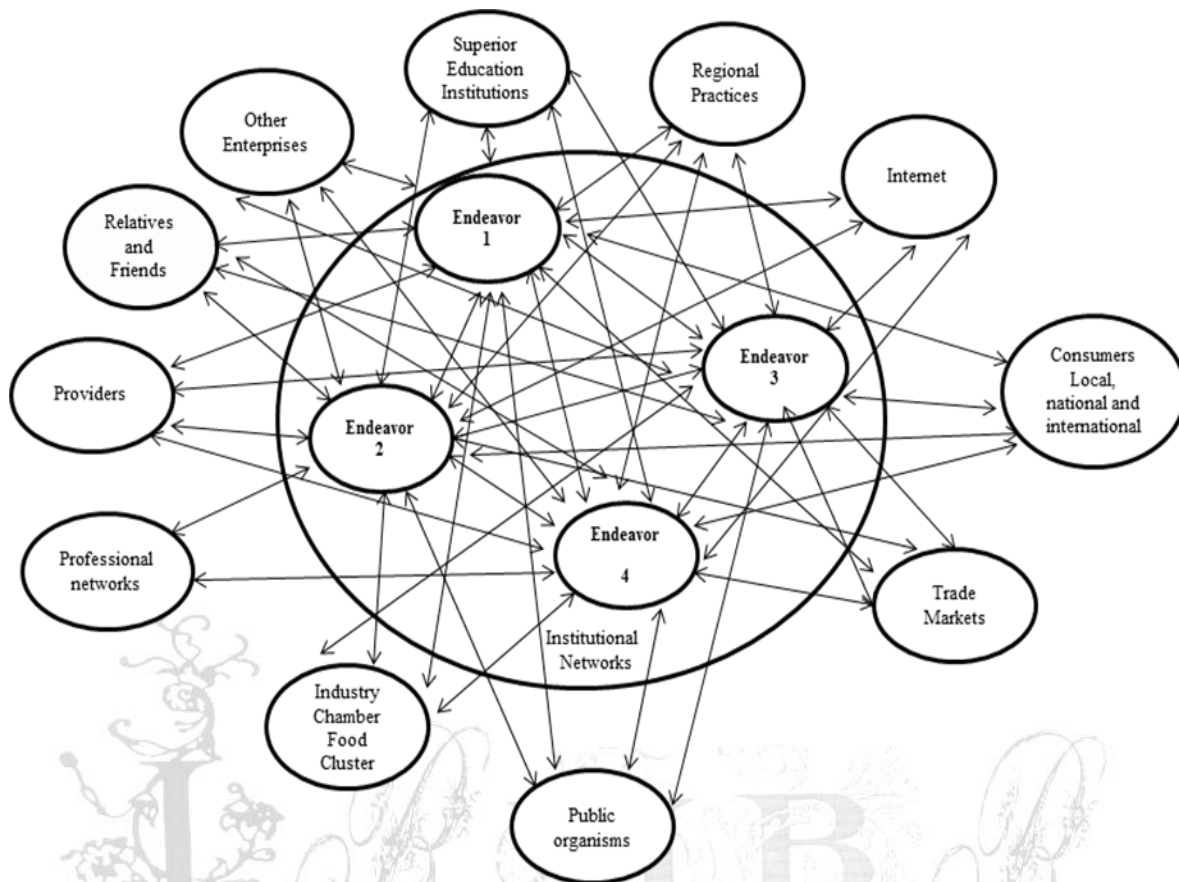


Figure 2. Total system network where interactions contribute with knowledge and resources that enable a business to prevail.

Figure 2 represents the Total System Network achieved by the enterprises under study. In the first circle the rural endeavors studied, all of which form part of RENDRUS, therefore they are part of an institutional network, are related to public organisms, industry chambers, other enterprises, institutions of higher learning, regional practices and trade markets. Some of them differ in their markets, due to the fact that few of them commercialize their products in an international marketplace. All of them partake in the national and local markets, through the trade markets and in local stores. They also have providers and consumers, relatives and friends, as part of their initial network.

The relations that they establish within the industry chamber and those who form part of a professional network and of all the links with different actors seems to be a strategy for sharing knowledge and quality processes, as well as for working together to open markets and achieve their goals.

## Conclusions

This research began with the aim of determining how social networks can contribute to rural enterprises and their function as a key for obtaining different types of resources and knowledge, as well as the reflection of this type of structure on the growth and permanence of these enterprises in Mexico

Through the cases presented it could be said that becoming part of a network generates access to resources of various types, one of them knowledge on how to transform raw material, most of the time given by

friends or members of the family. As the network grows, when they interact in professional networks, they can attain knowledge related to technological, marketing, financing and administrative matters. Also they can receive economic resources and information related to forms of cultivation and certification processes. It can be said that most of these relations are supported by trust.

Through institutional networks producers acquire financing, support for their business with the knowledge of the endeavors that are more advanced, access to new markets, participation in trade markets and contacts with entrepreneurs all over the country with whom they exchange knowledge and find new consumers and places to commercialize their products.

While interactions with educational institutions allow producers to share technical, specialized and managerial knowledge, among others, government institutions support them especially with financial resources and information related to their main activity.

With this in mind it can be said that social capital was gained due to the fact that all of the enterprises studied in the different states of Mexico obtained, as Bordieu (1980) states, resources derived from the relationships that took place through the networks, as well as what Giraudeau (2007) calls the exchange of knowledge and experiences, and the tools of management, the so-called invisible technologies, in which the entrepreneurs are trained as members, especially when they form part of institutional and professional networks.

With all the information presented it can be said that being part of a network can make the difference between survival, growth, and the demise of a company. In addition, the access to markets, knowledge and financing, which are generally controlled by institutions, tend to be stronger incentives for entrepreneurs to try to become a part of networks that involve various institutions. Therefore networks constitute a vital element for receiving resources and knowledge which are significant assets for rural microenterprises.

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