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Networks of Collaboration and Management in of Phytocosmetrics Companies in the Amazon

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Abstract *— Competitive increasingly markets require organizations to be competitive which is not always possible because of financial and technical constraints. These limitations can be overcome through partnerships between organizations in a network format. Networks can be considered instruments favorable to the development and success of organizations. Networks can be understood as a set of different organizations with distinct knowledge and skills that have common interests. Together they constitute a set of skills and employ varied resources, for a certain period of time, for the common goal to be achieved. Knowing the organizational profile of the companies representing the phytocosmetics segment installed in the state and knowing who their partners are and the types of knowledge they use and create can be the first step towards the creation of networks that stimulate the sector in the State, promoting local development And the competitiveness of these companies.*

Keywords *— Amazonas, Companies, Cosmetics, Networks, Partnerships, Phytocosmetics.*

I. INTRODUCTION

The concept of sustainable development has been the subject of studies and discussions on several continents. It began in the 1960s, being intensified and better delineated in 1987 in the Brundtland Report of the World Commission on Environment and Development, created in 1983 by the United Nations [1].

It is clear that concern for the environment has become indispensable for the social and economic development of nations, especially developing nations, which leads us to new paradigms of utilization of resources available for the generation of foreign exchange for cities, states and countries.

The proper use of the natural resources of the Amazon forest has been the subject of numerous discussions and public policies. Finding alternatives for the promotion of economic and social growth, linked to environmental sustainability has been intensified by studies in several knowledge segments such as energy, medicine, agriculture, business and management, among others [2] [3] [4] [5] [6] [7] [8].

The production of phytocosmetics or cosmetics containing ingredients from the forest, which is one of the activities of the bio-industries, whose relevant legislation does not impede its development, as in the case of herbal medicines, has grown significantly in Brazil and the world. However, even with the country's good performance in personal hygiene, perfumes and cosmetics, the segment in the Amazon still represents a small percentage of the national scenario [6] with only 3.6% of the companies installed in the country [9].

Between 2004 and 2015, 1113 companies were legally installed in Brazil, linked to the cosmetics industry, of which only 6 in the State of Amazonas [9]. The country's Gross Domestic Product between 1997 and 2014 grew around 64.8%, while the cosmetics market grew 389.4%; On average 9.2% in the last 18 years [9].

Competitive markets are increasingly demanding that organizations be competitive. Organizational competitiveness has been studied by authors [10] who attribute the success of many organizations to the capacity to generate knowledge and innovate, which is not always possible due to financial and technical limitations.

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These limitations can be overcome through partnerships, which can be performed between organizations acting in a network format. Networks can be considered instruments favorable to the development and success of organizations. The links between the members represent a channel for transferring knowledge and technologies, stimulating innovation and competitiveness.

Despite being a field of knowledge in development, collaborative networks are already recognized as a way for companies from different segments to survive in dynamic environments in which technologies, society and markets are constantly changing. These networks have also been seen as a way to create value, since they allow the development of new capacities to deal with the uncertainties, needs of innovations, mass customization and competition [11] [12] [13] [14].

In view of the significant growth in the segment of cosmetics, perfumery and personal hygiene products in the last 18 years, and the potential that the Amazon has for the production of cosmetics with ingredients derived from local biodiversity, this chapter intends to present the organizational profile of the companies representing the Segment of phytocosmetics installed in the State, to know who their partners are and the types of knowledge they use and develop, so that it is possible later to seek mechanisms to stimulate the sector in the State, through partnerships in the form of networks, promoting development Competitiveness of these companies.

II. NETWORKS OF COLLABORATION

The current scenario is characterized by numerous changes in markets, technologies and organizational structures. Stopping knowledge of technology, promoting technological learning and innovation are essential elements for the survival and development of organizations, reflecting on society and the economy.

The ability to generate and absorb innovations is being considered, more than ever, crucial for an economic agent to become competitive. However, in order to keep pace with the rapid changes taking place, it is extremely important to acquire new skills and knowledge, which means increasing the capacity of individuals, companies, countries and regions to learn and transform this learning into a factor of competitiveness. This dynamic process of obtaining and developing knowledge for technological advancement and innovation is fundamental to the knowledge-based or, more specifically, learning-based economy [15] [16].

Faced with the speed of changes and pressures suffered by the market, the process of creation and transformation becomes increasingly complex: in any area, there is more available knowledge than time to process and transform them, as well as these processes , Usually involve multidisciplinary knowledge, which may make it more difficult to manage knowledge, increase the cost and time for processing, internalization, analysis and transformation of knowledge [11] [17] [13] [18].

Although many consider today that the process of globalization and the spread of information and communication technologies allow the easy transfer of knowledge, it is observed that, contrary to this thesis, only information and some knowledge can be easily transferable. Crucial elements of knowledge, implicit in research, development, and production practices, are not easily transferable because they are rooted in specific people, organizations, and locations. Only those with such knowledge may be able to adapt to the rapid changes imposed by the market [19], which will only be possible if companies have flexible, dynamic and adaptable organizational structures favorable to the process of communication and creation of knowledge [20].

This complex dynamics of the innovation process requires efficient and effective actions that articulate the diverse inputs, which is not always possible to a single organization with limited technical and financial resources, thus requiring the need to establish partnerships with several entities and organizations, seeking to Such as the possibility of working in cooperation networks [21].

Collaborative networks help businesses survive in dynamic environments. These networks have also been seen as a way of creating value by enabling them to develop new capabilities to deal with uncertainties, needs for innovations, mass customization and competition

Numerous benefits have been associated with the emergence and development of innovation networks such as the ability to access external resources and a broad knowledge base, analysis of new opportunities, and the development of core competencies of the company. Therefore, it is not surprising that so many disciplines have noticed the importance of the issue. Even if they have different approaches, these search currents share a common starting point: innovation networks emerge through the collaboration of multiple stakeholder groups. Companies, universities, private research centers, public institutions, investors, government agencies, and many others.

With regard to studies on collaborative networks for the phytocosmetics segment in the State of Amazonas, we find the work of [3], which deals with knowledge networks for the areas of drugs and cosmetics in the State. Based on the methodological basis, the principles of knowledge networks sought to identify and analyze the

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relations of exchange established between actors belonging to government, private companies and institutions that promote knowledge. For the formation of knowledge networks, the mobilizing programs (governmental and non-governmental actions aimed at promoting the activity of pharmaceuticals and cosmetics in the state) were used as a basis.

In the work it was verified that the knowledge is produced by public and federal teaching and research institutions; That the learning process in the network of knowledge of pharmaceuticals and cosmetics is used for the training of human resources (postgraduate, courses, lectures seminars). The knowledge transmitted is of the technical and management type [3].

In the State of Amazonas, the biotechnology division / multidisciplinary support center and pharmacy course of UFAM, coordinations of research of natural products, botany and physiology of the Instituto Nacional de Pesquisas da Amazônia – INPA, Fundação Oswaldo Cruz, EMBRAPA, Fundação de Medicina tropical e Hemocentro do Amazonas would have the capacity to develop knowledge in the segment of drugs and cosmetics [3].

2.1 Concept and Formation of Networks

Collaboration can be conceptualized as the process where an objective is achieved with the help of something or someone. Assist, participate. It is a process in which institutions share information, resources, and responsibilities to plan, execute and evaluate activities together. Collaboration implies trust, effort, and dedication. In addition, it is important to maintain a close and comprehensive interaction to facilitate the exchange of tacit knowledge information, to create technological skills and to solve problems of resources and capacities not always available in the company [22].

The collaborative network is a link between several organizations that are independent, geographically distributed and heterogeneous in terms of their operational environment, culture, goals and social capital, but which share information, resources and responsibilities to plan, implement and evaluate activities together To achieve common and compatible objectives [23] [22].

The main benefit of networks is that they bring together participants (in this case individuals and organizations) who could not normally have access to each other. Although there is a tendency for participants to be attracted to others as themselves, studies on networks have demonstrated the importance of heterogeneous agents [23] [13] [18].

[23] list as benefits and reasons for the collaborative work: to increase performance in the market; Increase the use of resources (assets and liabilities); Improve customer service; Reduce the cost and time of product development; Share costs to increase product quality; Increase and improve technical and managerial skills and knowledge; Obtain technology with participating companies to achieve economies of scale in production; Reduce risk; Reduce inventory to gain rapid market access and increase flexibility to reach an international presence for micro and small enterprises; To deal with change.

Similarly, other authors have identified that the effectiveness of collaboration in networks, especially those of innovation, can be determined by elements related to the participants, such as the company's overall strategy, the intensity of innovation [24], technological capabilities of [25]. [26] pointed out that power, trust, coordination, communication, efficiency and research and development harmony are the key elements for effective management of innovation networks.

The concept or notion of innovation networks is shaded by the evolution of concepts of innovation systems. This is especially true when one presents the broader notion that innovation networks involve processes of interaction between heterogeneous actors producing innovations at any level of aggregation (regional, national, global). In principle, processes of interaction between heterogeneous actors occur in innovation systems, although in the approach of innovation systems, the most relevant concern is the capacity or elements necessary for companies to innovate. Viewed from the perspective of public policies, innovation systems refer to innovation processes in a generic way and to how they affect the economic development of a country, region or sector [27].

Harmony is defined as the development of mutual interests among the actors in a network. Actors involved in partnerships, at any stage of an innovation process, should seek to understand one another's perspectives, to resolve their conflicts on the smallest possible issues, at the level of debate rather than simply to accept them. A degree of conflict may be necessary for innovation, while at the same time cooperation may be necessary for efficiency [26].

In order to be competitive in a cooperative network, organizations must adopt a mutually beneficial position with the other participants of the network, where each one has its specific competence, and it is essential to develop a compatible organizational infrastructure, allowing members of the cooperation network to share their Resources, supporting at the same time the operations to be carried out in order to achieve the proposed objectives, and to build adequate management methodologies,

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guaranteeing high performance of the business activities [23].

The networks have a cycle composed of the identification of an opportunity, the identification of an opportunity, the identification of an opportunity, the identification of an opportunity, Creation, operation and dissolution. After identifying the business opportunities, the organizations belonging to the networks need to be structured in order to achieve certain objectives. Once you reach your goals, the network disappears and you are either looking for new business opportunities.

Network actors are often heterogeneous, needing tools that match language and procedures. Thus, protocols or planning are developed, identifying the responsibilities of each one, cultural aspects and ethical values, as well as the common way of doing the actions. There is a division of the tasks, so that those who have a certain competence suppress the actors who do not have them. In most cases, it has been found that there is an attempt to equalize knowledge so that the transfer process is well assimilated, impacting on the result to be achieved (for example, a training program) [11] [23] [13] [28] [25] [29] [30].

Facing the challenges, [25] stresses that an appropriate reference model, support infrastructures, management and technological alignment of relationships are necessary for the success of networks. Inhibitors and challenges can be mitigated through clear organization, adequate workforce, finance, communication, skills and partnership development. It is necessary to develop the capacity for interoperability, that is, solutions that ensure the minimum exchange of data and information between autonomous and heterogeneous actors belonging to the network, all without losing focus on their commercial activities. In such contexts, companies must continue their routine activities of distribution and marketing of products. At the same time, they are developing new network innovation activities.

2.2 Structure and Dynamics of Collaboration Networks

The structure of a network is defined as the web of links that are established between the elements that constitute a set of organizations. In this sense, the structure can provide elements for the integration and coordination between companies, it allows to verify the interfaces and to seek the optimization of resources and competences. Its dynamics is related to the exchange of information, the necessary relations for the achievement of the objectives to which the networks propose [31].

The structure and dynamics of a network can demonstrate how interorganizational relationships occur, the flow of knowledge between the institutions that comprise it, the form of information exchange, the services used, the use of infrastructure, technological development and technology transfer. Interorganizational relationships refer to any type of contacts between two or more organizations, and may occur between similar or unlike organizations, involving transactions, flows and resource links.

[13] detected that the relations between the actors existed even before the formation of the network. The proposal to create a network that solved a certain situation was presented by the participants who saw the possibility of reducing their institutional deficiencies. Such relationships can facilitate the dissemination of information and knowledge to centers and work groups that were not initially connected.

These informal relationships (networks) tend to be based on personal contacts or "communities of practitioners," or simply arise in the normal course of business. It is important to note that formal or coordinated networks can be targeted, facilitate the achievement of objectives and can be coordinated by business organizations such as chambers of commerce, research associations, technology services companies, consultants, universities, public Research or sponsored by local, regional or central government resources [32].

Partnerships between organizations allow existing constraints in organizations to be overcome. Networks can be considered instruments favorable to the development and success of organizations. The links between the members can be a channel for transferring knowledge and technologies, stimulating innovation and competitiveness [32].

According to the [32], the number of different partners for each category is relevant because it makes it possible to distinguish between the largest and the smallest agents in the networks. The number and duration of relationships are also important. Ideally, this could contribute to the identification of the importance of the different relationships that constitute the networks around the companies.

[3] presented the structure and dynamics of three sub-networks of knowledge originated from the production of cosmetics set up in 2002, from the signing of a contract, established under the Technological Export Support Program (PROGEX) Between Renata Baraúna Silva, SA Pharmakos, Pronatus do Amazônas Industry and trade in pharmaceuticals and cosmetics Ltda., Companies in the cosmetics and pharmaceutical manufacturing sector, located at Centro de Incubação e Desenvolvimento Empresarial - CIDE and FUCAPI, for survey and study To overcome technical barriers (various analyzes) aimed at the export and adaptation of the products to the standards of ANVISA and the European community.

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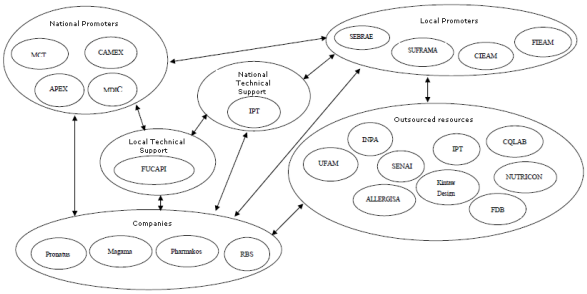

Fig. 1. Network and flow of knowledge established by the PROGEX mobilizing agent, where three cosmetics manufacturers were presented in the State of Amazonas. Source: [3].

According with Pimenta's (2005) research (Figure 1), The national promoters (MCT, MDIC, CAMEX and APEX) and local (SUFRAMA, FIEAM, CIEAM and SEBRAE) promoters of PROGEX responsible for local technical support (FUCAPI), CIDE and the company Renata Baraúna Silva [3]. The knowledge required for the improvement of product quality and the implementation of the studied production process flow through the network; Compliance with international technical standards; The conduct of laboratory tests and safety and efficacy tests of the product; The adequacy of product design and the development of packaging.

According to [8], currently this segment of cosmetics, personal hygiene products and perfumes count with 15 companies installed and operating in the State. Despite the importance of phytoindustry for the development of the State, few have been the big companies that have settled for the production of phytocosmetics in the Amazon.

Many reasons may be inhibiting or constraining the development and installation of these companies in the region such as technical standards, market-relevant legislation, lack of partners, funding, research and development. In order for the phytocosmetics industry to become a sustainable alternative to the economic model applied to the Northern Region, more efforts will be needed to optimize relations in research, teaching, technological development, production chain and relevant legislation among the actors involved in the Chain reaction [8].

III. METHODOLOGY

For this research, a multiple case study approach was used to understand the nature and complexity of a given phenomenon, occurring simultaneously in several institutions. Multiple case studies were chosen, since they allow a more dense research, increasing the external validity and contributing to obtain more realistic results [33].

The case studies were carried out in companies producing phytocosmetics (cosmetics, personal hygiene products and perfumes, which have some ingredient derived from the Amazonian biodiversity) installed in Amazonas, except handling pharmacies.

Through research carried out on a scientific basis, studies were identified that mentioned 15 different companies that would act in the manufacture of cosmetics, perfumery and hygiene products in the State. The survey on the web allowed the identification of another 12 companies in the segment. From a total of 27 companies identified, it can be confirmed that 15 of them are producing cosmetics, perfumes or personal hygiene products with inputs of the Amazonian biodiversity, presented in Table 1 [8].

According to the start date of operations of the identified companies, it was observed that 73% of them started operations after the year 2000, when there is an effort by the State of Amazonas to promote the local bio-industry. Still, according to cadastral data, it was possible to verify that, of the companies headquartered in the capital, 57% have some physical support from the State or from local Incubators [8].

Table 1: List of identified companies.

Seq	Companies
1	Amazon Ervas
2	Amazon Green
3	Anna Morena Fitocosmeticos da Amazônia
4	Aroma Ativo
5	Beleza da Floresta
6	Bella Cabocla Produtos Naturais Da Amazônia
7	Bio essência - Anauá
8	Cheiro Amazônico
9	Empório & Aromas da Amazônia
10	Gotas da Amazônia
11	Harmonia Nativa
12	N. L. Mayer – Amazon Biocare
13	Natus - Esponjas Vegetais da Amazônia
14	Pharmakos d´Amazonia
15	Pronatus do Amazonas

3.1 Methods of Data Collection

Contact was made with fifteen (15) companies, of which 13 (thirteen) of them were interviewed and the other two (two) did not return on the possibility of scheduling an interview.

The data collection instruments were composed of three (3) thematic sections to guide the research, the first one referring to the characterization of the organization, the second about the partnerships and the third identifies

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the types of knowledge generated and those received from the partners. For the thematic section 1 a questionnaire form was elaborated and in the sections two and three interview scripts were applied. The applications of the two instruments had an average duration of 50 minutes.

E-mail and telephone conversations were also used as a means to clarify doubts and supplement data. Data collection was performed between March and December 2014.

Personal interviews, considered as a vital source of information in case studies, were structured with key informants (managers) within the organizations and recorded in order not to lose any information that might be relevant to the work. Thematic sections were structured with the purpose of obtaining information about the organizational structure, taking into account that the partnership process and the creation of networks initially require a basic support of planning and management of the companies. Information was sought on who the partners would be and the nature of the partnership, as well as what types of knowledge were exchanged with these partners.

3.2 Tabulation and Data Analysis

The questionnaires were tabulated with the aid of electronic spreadsheets and analyzed by means of descriptive statistics. The results were presented by means of graphs.

The recorded interviews were transcribed and analyzed with the help of text editors and their analysis was carried out through the content. Attention was paid to aspects related to the thematic sections (characterization of the organization, partnerships, types of knowledge generated and those received from partners), established in this work, in order to obtain knowledge about the inherent aspects.

IV. RESULTS AND DISCUSSIONS

Of the fifteen companies currently operating in the cosmetics market in the State of Amazonas, it was possible to apply the research instruments to 13 (thirteen) of them. It was found that 31% of the companies interviewed produced and commercialized products from other segments as functional foods. All, however, produce and commercialize at least one cosmetic product.

In agreement to [34], cosmetics are hygiene products and perfumes consisting of natural or synthetic substances, used externally in various parts of the human body, skin, capillary system, nails, lips, external genitals, teeth and mucous membranes of the Oral cavity, have the sole and primary purpose of cleaning, perfuming, altering their appearance and / or correcting bodily odors and either protecting or keeping them in good condition. Among the cosmetic products produced by the companies interviewed we have soaps, intimate soaps, vegetable sponges, shampoos, hair conditioners, bath oils, environmental scents and others.

4.1 Characterization of the Organizations Producing Phytocosmetics in the State of Amazonas.

It was verified that 84% of the companies interviewed are small and medium-sized enterprises, which, according to studies cited by [22], "have scarce human and financial resources, limited managerial competence, making it difficult to anticipate market needs." Small and medium-sized enterprises are considered to be important economic pillars [35], and are more likely to establish collaboration agreements with other organizations to meet their undeveloped or insufficient skills [22].

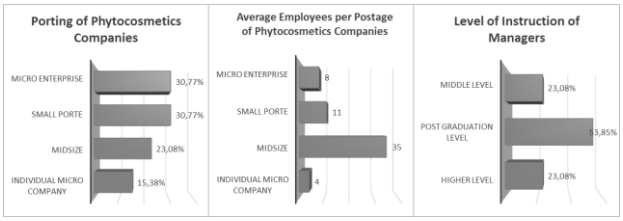

Fig. 2. Portion of the Phytocosmetics Companies of the State of Amazonas and Average Employees.

The average number of employees per company size is in line with the SEBRAE classification (2014), of which: companies with up to 19 employees are considered micro enterprises; From 20 to 99 employees are small companies; 100 to 499 employees are medium-sized companies; And above 500. According to [36] all companies surveyed are included in the Small Business Classification, are made up of micro and small enterprises and individual microentrepreneurs.

It was also verified that the level of education of the managers of these phytocosmetics companies is that 77% have undergraduate or postgraduate studies and have family management.

These micro, small and medium-sized enterprises have, in their almost total majority (92.31%), a clear division of activities and responsibilities within the organization, even though sometimes the same person has different responsibilities [37].

About 92% of companies have planned to develop new products or processes, however, only 23.08% of companies interviewed have stated formalized strategic planning. According to the interviewees, their plans are not coded, but they do forecast costs and investments. The lack of well-defined planning can imply in the company's internal capacity to implement competitive strategies with a focus on innovation [38] [39].

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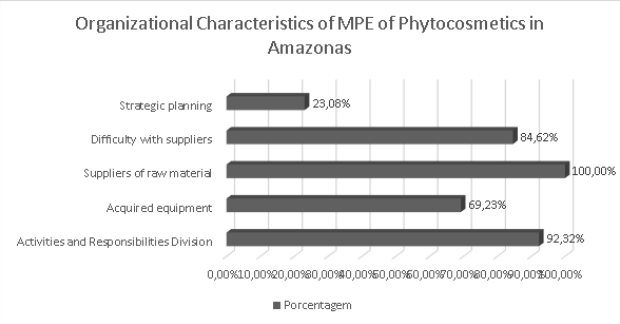

Fig. 3. Characteristics of Phytocosmetics companies in the State of Amazonas.

The equipment used for the production process was in 69.23% of the companies interviewed, acquired. The remaining 30.77% reported having purchased non-specific equipment from the production area, adapting them to production requirements. This can be considered the initial step in an innovation process, which results from adaptation / improvement of existing machines and equipment or product-related processes, adaptations and improvements [40].

All the interviewees stated that the raw materials used in their phytocosmetics production processes come from local suppliers and 84.62% of the interviewees have some difficulty in cooperation / negotiation with suppliers due to technical and / or geographical issues, Difficulty in maintaining the quality and continuity of inputs. [41] suggest as an alternative to this type of situation, the use of raw material from cultivated areas, thus improving supply chain control, chemical variation and quality of inputs, which in the State practically Has not been done, with the exception of two interviewees who mentioned having cultivated areas for the partial supply of their production lines.

All phytocosmetics firms interviewed stated that training is fundamentally important and encouraged by company managers. However, only 30.77% of them declared that they can apply the knowledge obtained in their productive processes. This fact is, according to interviewees, because many training programs have impractical content for their current technological and financial levels.

Information and communication technologies are considered relevant by all companies interviewing and all have stated that they use some degree of technology investment to improve their products or production processes (through market surveys and technical information).

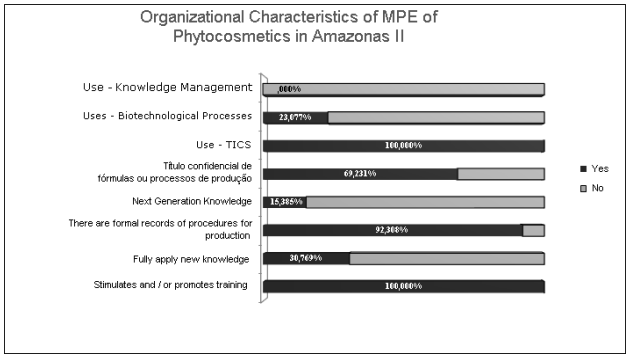

Fig. 4. Characteristics of Phytocosmetics companies in the State of Amazonas.

Only 15.38% of the phytocosmetics companies interviewed stated that they use state-of-the-art knowledge in the development of their products, which means that, according to managers, their production processes are relatively simple, with low aggregate inputs and Their equipment does not require high technologies. Despite the low technology added to the production process, 69.23% declared to make the greatest possible secrecy about their production processes.

In the perception of the managers interviewed, only 23.08% use biotechnological processes in the development and production of their products. However, they emphasized the importance of processes for the development and use of new components of biodiversity in the cosmetics segment. No organization interviewed has any knowledge management system implemented in their companies. They recognize the importance of "knowledge", especially those related to plant properties. However, knowledge in companies is at an unspoken level.

In the matter of the networks presented by [3] they were not mentioned by the managers. This may have occurred because of the end of the network life cycle. After the objectives have been reached, they will be dissolved [11] [23] [13] [28] [25] [29] [30]. Several actors mentioned by the managers in this research are the same ones described in the work of [3], which reflects their continuous performance.

4.2 Partnerships and Recognized Competencies

Contemporary organizations are embedded in a dynamic system, subject to abrupt changes, with emerging technological complexities in the goods and services segments, and in order to remain in the market, they must achieve ever higher levels of efficiency and effectiveness. Innovation, whether product, process, marketing or management, must be constant to meet the demands of an increasingly dynamic market. Small and medium-sized phytocosmetics companies in the state of Amazonas do not escape the general rule and, in order to

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obtain competitive advantages, they need to win partners to develop competences that, alone, could not achieve their limitations. "In the new scenario, there is a need for partnerships so that new products and processes achieve their true usefulness, which is to improve the quality of life of humanity" [21].

It was found that 92,31% of the phytocosmetics companies interviewed stated that they were part of or have already done some kind of partnership with government / non-profit institutions / bodies. Suppliers are seen as partners by 76.92% of respondents and 53.85% of respondents said they have or have already partnered with competitors.

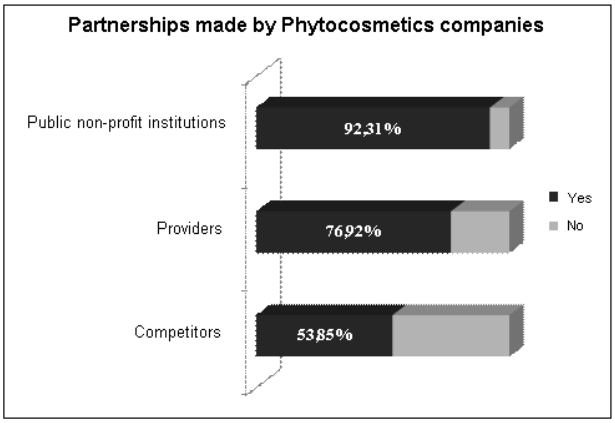

Fig. 5. Partnerships

Partnerships between organizations allow existing constraints in organizations to be overcome. Networks can be considered instruments favorable to the development and success of organizations. The links between the members can be a channel for transferring knowledge and technologies, stimulating innovation and competitiveness [32].

Six different companies were mentioned as partners. However, it was observed that the perception of partnership was not always reciprocal. [25] emphasizes that many small and medium-sized enterprises may lack experience and techniques for building relationships beyond the immediate contractual status and lose to the efficiency of approaches.

The lack of reciprocity leads one to consider the existence of unresolved conflicts in the partnerships. There was an absence of harmony. As for the suppliers mentioned, these are outsourced laboratories responsible for testing on cosmetics or on prototypes. Also mentioned were cooperatives, responsible for material for packaging and raw materials.

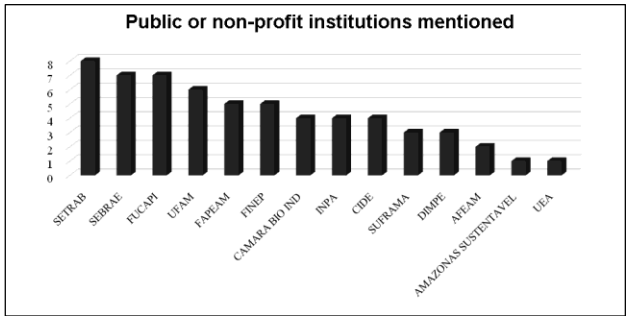

Fig. 6. Public or non-profit institutions mentioned as partners

Figure 6, shows the public and/or non-profit institutions mentioned as partners

1. SETRAB - Secretaria de Estado do Trabalho do Amazonas is responsible for implementing government policy. It was mentioned for having organized and invited companies to participate in fairs. She was also mentioned as responsible for the Handicraft Fair of the Avenida Eduardo Ribeiro. It was noticed, however, that currently the fair is under the responsibility of the Association of Handicrafts Fairs of Amazonas, non-profit entity. This mistake can also be explained by the fact that SETRAB is responsible for the registration of Artisans in the State. Thus, for owners of small and medium businesses in the area of cosmetics in the state to trade in the fair, held on Sundays, must own a portfolio of craftsman obtained at this Secretariat.

2. SEBRAE - Serviço Brasileiro de Apoio às Micro e Pequenas Empresas is a private not-for-profit entity. IT was mentioned as a partner because of the numerous courses offered, mainly in the area of management.

3. FUCAPI - Fundação Centro de Análise, Pesquisa e Inovação Tecnológica is recognized by managers of phytocosmetics companies as a partner in educational and technological activities and was also mentioned by virtue of the business incubator.

4. UFAM – Universidade Federal do Amazonas. The Institution was mentioned as a partner in staff training and also in the development of research.

5. FAPEAM (Fundação de Amparo à Pesquisa do Estado do Amazonas) and FINEP (Financiadora de Estudos e Projetos), were mentioned for making available to the segment the promotion to the research and development of its products / processes. It was also mentioned, in the development segment, the AFEAM - Agencia de Fomento do Estado do Amazonas.

As partners that provided physical support were mentioned:

- DIMPE - Distrito Industrial de Microempresas e Empresas de Pequeno Porte do Amazonas, connected to Secretaria de Estado de Planejamento, Desenvolvimento, Ciência, Tecnologia e Inovação – (SEPLAN-CTI).

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- SUFRAMA - Superintendência da Zona Franca de Manaus, autarquia vinculada ao Ministério do Desenvolvimento, Indústria e Comércio Exterior which manages the Zona Franca de Manaus, and CIDE - Centro de Incubação e Desenvolvimento Empresarial which in addition to the physical support also provides technical and management support through the partnerships).

Researchers from Instituto Nacional de Pesquisas da Amazônia – INPA and Universidade Federal do Amazonas – UFAM were mentioned as partners in the development of research and professional training.

When questioned about participating in a network or group that dealt with the development of the segment or that had this function, four managers mentioned the possible participation in meetings of the Câmara Setorial da Bioindústria, collegiate, consultative, support and intermediary organizations in the representations, promotions and Defense of the interests of the State's economic development, together with other chambers, makes up the organizational structure of the Secretaria de Estado de Planejamento, Desenvolvimento, Ciência, Tecnologia e Inovação – SEPLAN-CTI. They also expressed some dissatisfaction with the content of the discussions and did not have an interest in maintaining participation in the meetings of the chamber.

They also expressed some dissatisfaction with the content of the discussions and did not have an interest in maintaining participation in the meetings of the chamber.

Credibility and trust in coordinating a network are extremely important to ensure that multiple actors can work with cohesion. Coordination is defined as the concatenation of different actors, so that each part of the relationship can perform some tasks to achieve collective goals [26].

4.3 Knowledge used by Phytocosmetics Companies

At this time, organizations face a new competitive and unstable scenario, which requires a rapid response to the market and the consumer. To do this, you need to have the knowledge to respond effectively to change. It was verified that the companies of the segment of phytocosmetics demand knowledge of management, marketing, technical and scientific knowledge. What differs between the companies studied is the level of knowledge that each one holds until the moment.

The main knowledge they develop is related to the areas of formulation of their products, improvements in the production process, equipment adaptation, raw material quality, testing and product quality control.

According to [34], personal hygiene products, cosmetics and perfumes are classified in Group 1 and Group 2, according to the "probability of occurrence of unwanted effects due to improper use of the product, its formulation, purpose of use, areas of Body to which they are intended and care to be observed when in use ". The products of Group 2 require larger manufacturers require, safety and / or efficacy proof as well as information and care, mode and usage restrictions, which requires companies to higher level of knowledge.

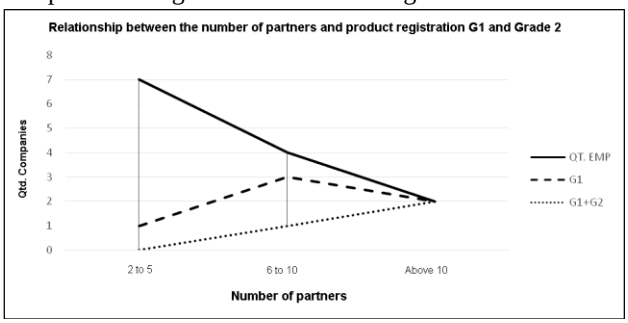

Fig. 7. Relationship between number of partnerships and registration of Products G1 and G2.

It was found that companies with fewer partners have more lack of knowledge related to business management, bureaucracies with sanitary surveillance agencies, need technical support for stability and quality of production.

As shown in Figure 7, seven companies surveyed have up to five partners and among them only one has notification on the ANVISA website. The company that has the notification of products of Group 1 has few partnerships because its management is made by a Mexican group that bought the company from the former owners.

Among four companies with 6 to 10 partners, it was found that 3 of them have records of Group 1 products and one of these three also has a Group 2 record. A company in this group does not have any type of product registration. This fact may have occurred because this company was newly incubated and still in the process of regularization with the agency. The two companies with more than ten partners have records of Group 1 and Group 2 products.

Thus, it was found that only 46% of phytocosmetics companies have their production procedures duly coded and authorized or notified by ANVISA.

It is understood that these procedures duly registered or notified to the agency were constituted by the technical and management knowledge of the companies in the segment.

The managers of the companies have stated that they do not use their knowledge of traditional communities in the development of their products, they use popular knowledge, usually derived from the knowledge of families about the use of plants and are transferred from generation to generation through stories and recipes "curators ".

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According to the managers, the great challenge is to prove the effectiveness of these revenues and register them. Codification of production knowledge is essential for companies in the phytocosmetics industry. In addition to regularization, such knowledge can be valuable in an innovation process at various stages of the process [12].

V. CONCLUSION

The phytocosmetics companies of the state of Amazonas are micro, small and medium-sized enterprises and individual microentrepreneurs, and are therefore small businesses;

- Most managers of micro, small and medium-sized companies have a complete upper level;
- Organizations have a clear view of activities and responsibilities within the organization, even when sometimes the same person has different responsibilities.
- Most companies do not have formal strategic planning; Make cost forecasts and investments empirically. Even so, they are always planning new products or new ways of producing, concerned with meeting market demand and reducing costs;
- Often the equipment available in the market to be used in the productive processes of these micro, small and medium enterprises do not meet the production capacity of the companies. They are generally developed for large companies, in some cases;
- The raw materials used in the great majority of companies come from suppliers located in the State itself and the managers experience difficulties in negotiating or technical issues of the quality of the inputs with these suppliers;
- Although all companies stimulate training and training, no company can put into practice all the knowledge gained. Generally the reality of the company is different from the theoretical model of the training and its physical and financial availability are incompatible with the instructions passed on in the training.
- They recognize the importance of biotechnology and knowledge management for their enterprises, but declare that they do not use or use very little of these processes. Relying on R & D expenditures and lack of patent registration, one can characterize applied technologies in the productive processes of companies as low technology.
- Despite the small amount of technology added to the production process and the product, companies seek to maintain the confidentiality of their production processes, avoiding to share them with third parties, which demonstrates a high degree of mistrust.
- They have not mentioned any network participation currently. Some have stated the existence of the industry chamber of the bioindustry and have not shown much interest in participating. According to some interviewees, the sectoral chamber was not very objective in the resolution of demands of the segment, the discussions were at the institutional political level and the businessmen of the segment demand concrete results. They also declare that they do not attend meetings because of the few observable results;
- Most of the declared partners are public and non-profit institutions, which demonstrates the importance of public policies for such support to be possible;
- There is a mistrust in partnering with competitors. Trust is greater when partnerships are sought with suppliers;
- The main partner mentioned was SETRAB - Secretaria de Estado do Trabalho do Amazonas for organizing companies to participate in fairs. They also mentioned the Eduardo Riberio Avenue Fair, which is currently coordinated by the Association of Craft Fairs of Amazonas. SEBRAE - Serviço Brasileiro de Apoio às Micro e Pequenas Empresas recognized by courses in the area of management. FUCAPI - Fundação Centro de Análise, Pesquisa e Inovação Tecnológica that is recognized by managers of phytocosmetics companies as a partner in educational and technological activities and was also mentioned by virtue of the business incubator. UFAM - Universidade Federal do Amazonas. was mentioned as a partner in staff training and also in the development of research.
- Also mentioned, Fundação de Amparo à Pesquisa do Amazonas – FAPEAM and Financiadora de Estudos e Projetos - FINEP were involved in the promotion of research and innovations as well as actors that provide physical and technical support such as the Distrito Industrial das Micro e Pequenas Empresas - DIMPE, and the Centro de Incubação e Desenvolvimento Empresarial – CIDE;
- State phytocosmetics companies have production, management, marketing and differentiated techniques. Of the interviewees, five more experienced companies demand knowledge related to science and technology, related to the development of new products and packaging while others need management knowledge and bureaucratic aspects related to sanitary surveillance agency authorizations;
- Knowledge in most companies is tacit. The codified knowledge was acquired mainly by the acquisition of machines and equipment;
- The main knowledge they develop is related to the areas of formulation of their products, improvements in the production process, equipment adaptation, raw material quality, testing and quality control of the product;
- There is a lack of cooperation strategies among most of the companies interviewed. Joint actions need to be

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designed to meet the real needs of micro, small and medium-sized companies in the segment;
- Local management companies that have more connections have more products notified at ANVISA.

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