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Ecological Analysis of a Tourism Business Network¹

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ABSTRACT

Objective – Institutionalism as an adaptation theory has contributed to understanding of the changing characteristics in governance structures. At the same time, community ecology has enhanced the evaluation of change within organizational communities. This study aims to analyze the relations and interactions of a business network, using institutional ecology concepts.

Design/methodology/approach – We applied the methods of institutionalism, as an adaptation theory, and community ecology, as evolution theory, in a network comprised of 45 businesses. Data for the flow of resources and institutional ecology were obtained using two separate instruments (designed by the researchers). Netdraw was used to graphically represent the various layers of the network and Ucinet 6 to generate the matrices.

Findings – While theory identifies information, services, decisions, solutions and money as resources, as far as the workers in the businesses researched are concerned, the first four flow naturally within the business network, but money is perceived as a resource that should always originate in the other nodes of the ecosystem.

Practical implications – Network stakeholders will make decisions that both strengthen relations among the members of the institutional arrangement and support the selection of institutional contexts more favorable to performing their activities.

Contributions – This is the first work that applies economic-evolutionary theories in order to analyze the relations and interactions within a business network.

Keywords – Institutional ecology. Institutional mapping. Business networks. Network analysis.



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1 INTRODUCTION

Organizational studies may be undertaken from two basic approaches: adaptation or evolution. In the adaptation approach, the two theories most commonly drawn upon are contingency theory and organizational learning theory, but this research has chosen to go with an alternative theory, institutionalism. In the evolution approach, community ecology is the one most commonly cited. Working from the premise that adaptation and evolution approaches are more complementary than contradictory, we decided to look to institutional ecology to support this study of higher life levels, be they ecosystems or communities. Thus, the unit of analysis can be an organization, or some form of organization, meaning that appropriate analytical methods, namely, institutional analysis and ecological institutional analysis, can be applied. While the field of business administration's organizational studies of business networks cannot be ignored, it should be acknowledged that the immense possibilities institutional theories – adaptation as well as evolution – offer for studying business networks have not been explored.

The object of this study was a business network comprised of 45 enterprises involved in various aspects of tourism (lodging, transportation, food and beverages, etc.) in five municipalities belonging to single department of Colombia. The network is connected to four agents: the public, consisting of 10 municipal, departmental and national public agencies; the social, consisting of three not-for-profit organizations; the private, made up of six commercial collectives; and the international, represented by a multilateral foundation. The sum of all relations among the 45 enterprises was called “community” (inter-organizational arrangement), while all relations between the business network and the four agents (nodes) were called “ecosystem” (inter-institutional arrangement). An organizational ecosystem's relations and interactions are analyzed using institutional ecology concepts. Drawing on these concepts, an instrument was designed

for use among the owners and workers of the 45 enterprises within the business network. The fundamental research hypotheses are: 1) workers, and the group of owners have differing perceptions with respect to network relations and interactions, and 2) owners believe the context's economic impacts on network activity are more important than the environmental and social impacts resulting from business activity.

Section one of this paper presents the conceptual references of organizational studies. Section two addresses institutionalism, and institutional analysis theory and methodology, critical for understanding section three, which focuses entirely on institutional ecology and ecological analysis. Section four applies the methodology to carry out an institutional mapping of the tourism network, the object of study; the graphic representations (of institutionalism and community ecology) are rendered using Netdraw software. Interpretation of the various maps occupies section five, the conclusions.

2 ORGANIZATIONAL STUDIES

The conceptual references of this research are outlined in Figure 1 and are addressed in this section and the following two. At the center of this research are institutions. The study of organizations (and their relationship with the surrounding contextual environment) can be conducted from an adaptation or selection (evolution) perspective.

According to the former, organizations monitor their surroundings, then formulate strategic responses to contextual changes in an attempt to adapt and ensure performance and organizational survival. From the selection point of view, it is organizations that select their surroundings, therefore adaptation to organizational changes rarely occurs. When change does occur, it takes place at the population level, i.e., an organizational population; populations change over time, but it is through selection (Singh, House & Tucker, 1986). Aldrich (1979

as cited in Carroll, 1984) was the first to link the selection approach (from natural sciences, such as ecology) to organizational theory, giving rise to an Evolutionary Logic of Population Ecology.

Similarly, organizational demography and community ecology come together as the product of linking evolution approaches to organizational theory (Carroll, 1984).

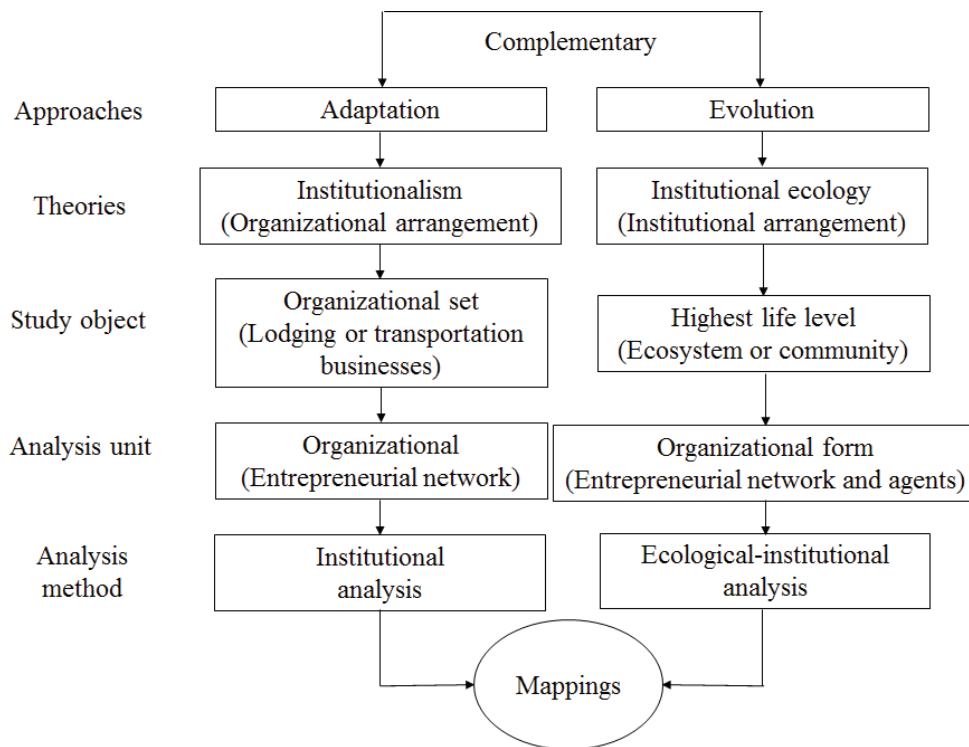


FIGURE 1 – Conceptual references in organizational studies

From the perspective of an adaptation theory such as institutionalism, changes are often introduced into organizations' formal structure in order to better align them with the changing institutional environment (Singh *et al.*, 1986). Community ecology, an evolution theory, studies relations among a collection of interacting populations in a region (Carroll, 1984). If the enterprises comprising a business network do in fact make up a community, when the network has relationships, interactions and mediations with other private, social, public or international agents, its life level is raised to an ecosystem.

Presented in this way, the research could have gone in one of two different directions: either built on the previously mentioned Evolutionary Logic of Population Ecology idea, or moving

towards Institutional Ecology and its focus on institutional arrangements. This research chose the latter path; it is necessary, therefore, to first address institutionalism and institutional analysis methodology, then institutional ecology and the ecological analysis of institutional arrangements.

3 INSTITUTIONALISM AND INSTITUTIONAL ANALYSIS

The topic of institutions has undeniably been dealt with in various disciplines, and this has somehow contributed to the broadening and diversification of the language that is used to this end. Thus, it is sometimes necessary to “define coherent meanings that allow for expression and

comparison of different theories and models of theories applied to particular problems” (Ostrom, 1999, p. 36). In business administration, for example, it is very common to confuse the term “institution” with “organization”, and more specifically, with “business”. Although many organizations are recognized as true institutions (family, church, police, parliament), the existence of enterprises that are truly institutions has yet to be demonstrated – at least in Colombia.

Institutions are unnecessary in a world where knowledge is perfect and information complete, but they are needed in other worlds. While economies develop and become more diverse and complex, uncertainty grows, and reliance on institutions to minimize behavioral uncertainty increases (Coase, 1960 as cited in Dinar & Saleth, 2004). Institutions provide the base on which rational decisions can be made, since they guarantee others’ behavior (North, 1990 as cited in Dinar & Saleth, 2004). Institutions as a whole are made up of component institutions that may, in turn, be connected as a system. From an atomic perspective, they are viewed as separate entities randomly joined together inside a whole. From a holistic point of view, connections between the global structure and its parts are seen as being closer, that is, parts are shaped by their place in the whole (Lane & Ersson, 1999).

Institution refers to a general model, to a categorization of activity or a specific human arrangement that is either formally or informally constructed and organized (Keohane, 1988). Similarly, it is a set of rules that structure social interactions (Knight, 1992 as cited in Bartels, 2009). These rules allow, require or prohibit people’s specific behavior in certain contexts (Ostrom, Gardner & Walker, 1994 as cited in Bartels, 2009). Specifically, these rules provide information about how people are excluded from behaving in given situations; they may be recognized by members of a relevant group as standards to be followed by others [...] and they shape peoples’ strategic decisions, thereby

producing stable results (Knight, 1992 as cited in Bartels, 2009).

Although institutions work as a system, for analysis’ sake they may be grouped into two segments, i.e., institutional context and institutional arrangement, to better understand their functions. In fact, in social sciences, institutionalization (a process) is understood as a concept for studying relationships between organizational characteristics and organizational context (Keohane, 1969). Institutional context is defined as a set of fundamental legal and social policies that form the bases for production, exchange and distribution. Institutional arrangements, or governance structures, provide the structure in which the members of a society – individually or collectively – cooperate or compete with one another (Dinar & Saleth, 2004). Institutions are characterized by three basic traits: interlinkages, malleability and hierarchical nature (Dinar & Saleth, 2004). The governance structure includes the economic, political and social organizations belonging to the institutional arrangement (Williamson, 1992). The line separating context from arrangement is not fixed, but shifts, depending on the level and focus of analysis (Dinar & Saleth, 2004). When the institutional arrangements of a specific region or subsector are the focus, their webs become part of the institutional context at the national and sectorial levels (Dinar & Saleth, 2004). As a result, laws and policies (rules) are considered part of the institutional context, and organizations (social units) considered part of an institutional arrangement. Moreover, institutional arrangements are made up of laws, regulations, operations practices and organizational structures, assembled into simple hierarchies. At the bottom level are the procedures agreed upon by people involved in order to make decision-making easier.

In the public policy process, three institutional arrangements have been examined: mechanisms for involving citizens in economic development decision-making processes; the pivot point of the development decision-making process – be it governmental or in private or local

corporate hands; and reform or ratification of local government political institutions. (Sharp, 1991, as cited in Feiock & Cable, 1992.) Mechanisms include citizen surveys, self-appointed community advisory committees, elected neighborhood commissions and public hearings (Feiock & Cable, 1992). Decisions can be made within government bureaucracy or through external organizations (businesses, chambers of commerce or quasi-governmental community development entities). Government reforms, in turn, similarly impact local policies (Feiock & Cable, 1992).

International institutional arrangements, especially concerning global organizations (health, trade, labor, tourism etc.), international agreements and codes (coffee, humanitarian, ethical, tourism, etc.), generally play an important role in the development of national systems. These arrangements, which strive to standardize guidelines along which domestic regulations can then be established, are important drivers of change in national systems (Spriggs & Grant, 2001). Including the World Tourism Organization (UNWTO) and the Global Code of Ethics for Tourism (UNGCE) in a tourism business ecosystem's institutional arrangement would undoubtedly be crucial to its functioning.

Global models define and legitimize agendas for local action, shaping the structures and policies of nations, and national and local stakeholders from all realms of social life: business, politics, education, science, even family life and religion (Meyer *et al.*, 1997 as cited in Schneiberg & Clemens, 2006). The effects of global policy on nations can be measured using three strategies: the effects reveal an absence of associations between factors at a national level and national state policies; the effects of global events reveal associations between global developments and national policies; and the effects of global vs. national factors change over time (Schneiberg & Clemens, 2006).

Linkages occurring inside an institutional arrangement are called institutional linkages, while those established between an arrangement

and the performance of an environmental context are labeled institution-performance connections. Institutional links can be *intra-*, that is, they relate to matters taking place inside a given arrangement, or *inter-*, they occur across the components. There is also influence from factors that are exogenous to institutional and contextual performance, which is why connections to the inside and those among institution, context and exogenous factors are viewed as dimensions, or layers, of the institution-performance process (Dinar & Saleth, 2004). It should be pointed out that a business network and its nodes, that is, an ecosystem, will be an independent, solid institution when within the framework of a department, a region or country, its linkages, interactions and mediations flow smoothly, thereby imparting the network with dynamism.

The crux of institutional analysis is the action situation around which individuals take action or implement strategies. This situation is ordered in relation to three sets of contextual attributes: the attributes of the physical resource, the attributes of the participating community, and the set of institutional attributes utilized. Participants behave differently depending on incentives and restrictions inherent to the situation. Strategic interactions among participants in an action situation generate distinct results. Politically speaking, arrangements have the most significance and are defined as rules, commonly known prescriptions employed by a series of participants to order reiterative and interdependent relations (Ostrom, 1986 as cited in Tan, 1991). In a situation structured according to rules, individuals choose behaviors from among a large array of permissible actions dictated by existing incentives. As social artifacts, rules are subject to human design and intervention: operative rules determine who may participate in what situations; who may, should or should not participate and how they should be rewarded or punished. Rules regarding collective action must be established to mediate conflicts, enforce decisions and re-formulate or modify operative rules (Tan, 1991).

The agency position (situational to the stakeholders) is a function of resources available to it (material and economic) and the political strategies they call for. This implies that stakeholders who have the resources to invest in their political causes have greater autonomy than those who do not; stakeholders who are capable of mobilizing sympathizers are less dependent than those who lack said capacity. Stakeholders' positions in the structure reflects the degree to which they are, structurally speaking, dependent on the decisions and practices of other stakeholders within the contextual environment to achieve collective goals (security, economic growth, etc.). Stakeholders have more autonomy if supporting them contributes to the general purpose. Possession of resources, choice of favorable strategies and structural position are determined and altered by, the established institutional arrangements. The institutional framework in which political struggles take place may also reveal how effective particular resources, strategies and positions are (Chorev, 2007).

Institutional analysis should also focus on how the stakeholders' situational and structural positions are affected. It is helpful, analytically speaking, to distinguish among three types of relations affected by established institutional arrangements: those between competing stakeholders; those between non-state stakeholders and state agencies; and those between various state agencies. By allowing nodes different levels of access to decision-making, institutional arrangements may give disproportionate advantage to some stakeholders at a cost to others. Institutions determine the stakeholders' relative political position via incentives, options and restrictions; they shape their strategies, alliances and prospective coalitions, inevitably impacting the final result (Chorev, 2007).

Institutional analysis helps explain the rules and incentives set in place to govern the behavior of agents comprising the web and their inter-institutional relations. It is based on an understanding of rules – formal constructions or informal constructions deeply rooted in cultural

practice – mediating and deviating (Holland, 2007). It can be carried out at both micro and macro levels. Microanalysis views sophisticated institutions as exogenous factors of the highest, most abstract level. Macro-analysis deals with institutions at a highly aggregate level; it focuses on production of *ad hoc* descriptions and taxonomies. Macro-analyses lend themselves to institutional decomposition, indispensable to development of the analytical framework needed for mapping, characterizing and evaluating distinct institutional layers and performance linkages (Dinar & Saleth, 2004). Five alternative methodologies have been widely used in institutional analysis: contextual delineation, subjective institutional change theory, the pluralistic approach, the decomposition and institutional analysis framework, and the Institutional Analysis and Development Framework (IAD) developed by Ostrom (1991, 2011).

4 INSTITUTIONAL ECOLOGY AND ECOLOGICAL ANALYSIS

Population ecology focuses on the contextual environment's effects on organizations and is interested as well in the material conditions of said context. Population density, in particular, reflects the intensity of competition for resources. This theory is concerned with birth and death rates of forms of organization (networks), or types of organizations, as primary dependent variables. It is through differential rates of birth and death that a population's forms change predominance (Hannan & Freeman, 1999 as cited in Pfeffer & Salancik, 2003). Population ecology emphasizes the importance of environmental context to understanding organizations. Among its principal ideas are: 1) consideration of selection processes – the product of competition and other environmental dimensions; 2) differential selection, through birth and death, as the primary mode of change in organizational populations; 3) passiveness in response to the way organizational structures and behaviors emerge for selection; 4)

birth and death studies over time, more explicitly longitudinal than other empirical studies; and 5) passiveness in response to internal organizational dynamics, such as power struggles, leadership succession, and similar matters (Pfeffer & Salanick, 2003).

At the beginning, ecology was reserved exclusively for the study of natural settings and the establish interactions of their components. Over time, it came to include the study of human and institutional interactions (Mercier, 1994). Among the general principles of the ecology movement – especially the branch inclined toward institutional arrangements – is the diversity of human nature, to which is attributed the fact that humans are unable to artificially standardize their creations. A second principle is the wisdom inherent to natural ecosystems; it rejects pure anthropocentrism. As a third principle, hierarchy has generated the most controversy. Does hierarchy exist in nature, or is the natural world based on equality? As institutional ecology interests diversified, tensions and debates emerged incrementally, in part because it became problematic to use nature to explain or criticize various phenomena. Ecology, be it scientific or institutional, is essentially an applied science, and its principles cannot be sustained linearly or abstractly within that domain without encountering, and clashing with another principle: paradox (Mercier, 1994).

Ecologists took on a set of problems that had their origins in evolution theory (adaptation and natural selection), geography (distribution and abundance) and physiology (the effects of physical factors, such as heat, light, soil and moisture on life history). At the same time, ecologists learned new quantitative and analytical methods and ways to use biological indicators. Ecology emerged as a sub-discipline, distinct from systems, morphology and genetics. Ecologists are interested in the bases for adaptation, in broadening physiology to take into account the dynamics of interacting groups of organisms, in quantifying the physical environment (physiography) and how these things affect the life history of organisms (Star & Griesemer, 1989).

The term institutional ecology is understood to mean that institutions are important for behavior, but in much more complex ways than those typically treated in economic models. Institutional ecology interacts with the state of technology, with cultural concepts of behavior, and with obligatory, emergent social practices which may be motivated, not only out of self-maximizing behavior, but a range of other psychological and social motivations too. In this complex ecology, institutions impact all of these other parameters and are, in turn, impacted by them. Institutions co-evolve with technology and social and market behavior. This co-evolution leads to periods of relative stability punctuated by periods of instability caused by external clashes or internally generated changes (Benkler, 2006).

Legitimacy is an essential concept for discussing institutional ecology, be it cognitive or sociopolitical in nature. Legitimacy is not achieved through numerical growth in an organizational population. The idea that the dimensions and measurement of legitimacy are strictly a function of the size of a population, and that these parameters are excellent and generalizable, is dismissed (Baum & Powell, 1995). Organizational ecologists have made considerable progress toward demonstrating that cultural understanding plays a fundamental role in the ecological dynamics of organizational populations, moreover, the evolution dynamics of organizational populations have transcended the exclusive reliance on size and now encompass the sociopolitical forces that provide vital support for organizational development. Further, it is emphasized that a population's development of norms and general practices, and the key support of its institutional stakeholders, are, to some extent, a product of competitive struggles, and consequently, vulnerable to limits on resources. If ecological theory is going to move from demographic to truly evolution [or macro-evolution] analyses of organizations, it must employ better, more robust tools to integrate the historical processes that connect organizations across time (Baum & Singh, 1994 as cited in

Baum & Powell, 1995). Similarly, in order for institutional analysis to capture the dynamic aspects of institutionalization, it must be open to alternative visions of the differential nature of interaction and ecological replication (Powell, 1991 as cited in Baum & Powell, 1995). And that is precisely what these writers suggest: to construct an institutional ecology of organizations – a more sophisticated theoretical understanding of the co-evolution nature of cultural interpretations, organizational forms, and limits on resources.

As viewed by ecologists, institutional arrangements go beyond exclusively economic concerns. The broader the institutional framework under analysis, the greater the number of factors, contradictions and paradoxes to be considered (Mercier, 1994). The intervention of the ecologists and a heated theoretical debate with the institutionalists prompted researchers to re-examine the relationships between fields and organizations. This was accomplished by addressing the consequences of adoption for organizations. Three actions deserve highlighting: inclusion of organizational survival as a dependent variable, challenges to the presumption that all extra-organizational factors are institutional factors; and refinements to the way legitimacy is measured. The results are evident in the study how of environmental context impacts an organization's policies, and especially its survival. For example, research on businesses' adoption of labor practices in response to changes in the legal and political environment. The commitment to population ecology has pushed institutionalists to more closely tie measurement strategies to theory, especially with regard to the key concept, legitimization (Schneiberg & Clemens, 2006).

Although ecological and institutional perspectives differ concerning topics of a general organizational nature, they share common ground where collective organizational contextual environments are concerned. Theoretical institutionalists emphasize the cultural and normative framework in which populations are immersed. The ecologists examine the more specific effects of competition and legitimization

processes on population dynamics (Hannan & Carroll, 1992 and Scott, 1995 as cited in Baum & Oliver, 1996).

In organizational ecology, the potential for competition between organizations is seen as a function of their similarity with respect to demand for resources: the more similar the resources are, the greater the potential for competition. On the one hand, organizations that share the same organizational niche (i.e., organizations having the same demands for resources) are perfect competitors. On the other hand, organizations that have different demands quite simply do not compete. In general terms, the potential for competition between two organizations is proportional to the overlap of their organizational niches (Baum & Oliver, 1996).

Both institutional analysis and population ecology reject reductionism. According to the latter, however, critical contextual factors do not share scripts, norms or regulatory regimens; on the contrary, they are a function of organizational density. Emphasizing that institutionalized beliefs are embedded, some population ecologists maintain that legitimacy is, in essence, unobservable, that it is a state of mind that can be inferred from observing the effects of organizational density on crucial rates (Hannan *et al.*, 1995 as cited in Schneiberg & Clemens, 2006). Density may be understood as the empowering of sociopolitical processes, such as approval, or the establishing of relations with regulatory agencies (Baum & Powell, 1995).

The challenge on the institutional side has been centered on developing an alternative methodology for the systematic evaluation of institutional linkages and their strategic implications that draws on stakeholders' and decision-makers' subjective, pre-formed perceptions. Linkages can be defined as points of interaction or cooperation between two or more agents or collective bodies, such as organizations or government units. Linkages can be established through rules and shared strategies, or regulatory standards for interaction, thereby creating functional interdependencies among different

agents or collective groups (Young, 2002 as cited in Heikkila, Schlager, & Davis, 2011). Among the alternative methodologies that have been proposed to carry out institutional analysis is the ecosystems perspective, which may well support an ecological analysis of institutional arrangement (Dinar & Saleth, 2004).

An institutional structure may be viewed as an ecosystem that develops within a context, defined by social, political, cultural, political and economic conditions, for the purpose of performing. In this vein, institutional ecology principle looks at the different levels of institutional structures as a single, interconnected ecosystem that [co-]evolves along with an institutional context characterized by cultural, social economic and political factors. This principle facilitates clear conceptualization of the interconnections among institutions and the interaction of institutions with their contextual environments. From a theoretical point of view, the principle resolves the conflict between evolution and traditional approaches. From an analytical perspective, the principle provides the conceptual basis for institutional decomposition and the mapping of linkages. Furthermore, the principle makes it possible to treat the context and the institutional structure as a system, and to separate the system from its physical, social, economic and political frameworks (Dinar & Saleth, 2004).

Drawing on institutional ecology methodology, Dinar and Saleth (2004) offer a unique analytical framework based on the detailed decomposition of select institutions, sector performance, and characterization of analytical and operative linkages among various components of a standard model. Another of the strategies used to evaluate heterogeneity in institutional arrangements focuses on organizational forms (community, species, population), and uses counts, over time, of organizations that have diverged from the dominant model and act as locations and carriers of models and alternative logics. This method has been used to track the entrance of socialist cooperativism in Israeli economy (Simons & Ingram, 2004) and the

ways US populists and progressivists fought to set up a decentralized, regional economy of farmers, independent producers, and markets in self-governing cities (Schneiberg, 2002 as cited in Schneiberg & Clemens, 2006).

Since ecologists adopted a set of problems with origins in evolution theory (adaptation and natural selection) and geography (distribution and abundance), an ecological institutional analysis could be conducted with a tool widely used by geographers and institutionalists alike: mapping (Holland, 2007). In simple terms, this tool helps prove hypotheses about the interests of social stakeholders and governing rules of any arrangement. Perhaps it is because mapping is such a basic geographical tool that scholars in the other social sciences limit its application to the tracing and production of maps. It is important to realize that a map is an intermediate mechanism for analysis, a bridge between collected data and conclusions. The map's primary contribution is its capacity to reduce reality to a scale that allows understanding (Ullman, 1953). It is because of maps' contributions to space and spatial interrelationships that sociology has relied on them for the execution of studies on social interactions.

5 APPLYING INSTITUTIONAL MAPPING

Regardless of the type of network (business, governmental, societal) being discussed, it will always be comprised of organizations, thus it can be studied as either an organizational aggregate or as an institutional arrangement. As an organizational aggregate, a network is the relatively stable and complex location where relations among multiple, interdependent members (social, political or economic stakeholders) occur and make up, as a whole, a self-organized system (Morçöl & Wachhaus, 2009). As an institutional or governance arrangement, the network provides a structure in which the members of a society (individually or collectively) cooperate or compete (Dinar & Saleth, 2004).

Drawing on the analytical considerations laid out above, this section will deal with the application of institutional ecology methods to a network comprised of 45 businesses. Said enterprises establish relations with four nodes – labeled agents in this research – namely: 1) a public agent, represented by ten government entities; 2) a private agent made up of six enterprises from outside the sector, in this case, tourism; 3) a social agent composed of three third sector entities; and 4) an international agent in the shape of a multilateral body. The tracing of institutional ecology and network relations, together with their various nodes, was carried out for two populations. Data on the flow of resources and institutional ecology were obtained using two separate instruments (designed by the researchers); one was administered to the 45 business owners, the other was administered to 37 workers. The first instrument is made up of 61 items designed to identify relations (interaction, cooperation, and interdependence) with the remaining members of the network, as well as other agents. The frequency of their relations traces actual (35 items) as well as ideal (11 items) flows of resources. The institutional mapping derives from the business leaders' responses to 15 items. In complementary fashion, a second instrument was administered to 37 workers from different businesses. The reason the number of workers consulted does not match the number of businesses is transparent: members of the family work in some of the businesses but are not classified as workers. The instrument administered to workers is made up of 25 items designed to identify relations (interaction, cooperation, and interdependence) with the remaining members of the network, as well as other agents. The frequency of their relations traces actual (18 items) as well as ideal (3 items) flows of resources. The institutional mapping is a product of the workers' responses to four items. It should be explained that the instrument offered to workers did not investigate business relations with each one of the agents' stakeholders, but rather, focused on a single stakeholder for each of the agents.

Netdraw network visualization program software was used to graphically represent the various layers of the network. Ucinet 6 was used to generate the matrices. Thus, three different graphs were obtained for each population: a static mapping, a process tracing, and an institutional mapping. The three were subsequently integrated into a single graph illustrating the three corresponding dimensions. The graphic representation of the networks incorporates both actual and ideal connections among network businesses (identified in the graph as business nodes), as well as linkages between said node and the four agents. This graphic analysis is justifiable as it accounts for all the elements the network requires: its nodes (business, private, public, social and international), as well as linkages and flows of resources (money, information, services, decisions and solutions.)

The institutional mapping proposed assumes that the network (of 45 enterprises) comprises a business community; the community establishes relations of varying types with the network's nodes, thereby configuring an institutional ecosystem. Based on the tenets of traditional and evolution methodologies, the proposed institutional mapping contemplates the matter of levels or layers. The first layer is static mapping, that is, the actual flow of resources (continuous lines) between the businesses in the network and the public, social, private and international agents concerned. According to theory, resources can take many forms, primarily as money, information, and various services, but also as decisions and solutions. The next layer is the process tracing where flows of resources considered ideal to the functioning of the business network are drawn (dotted lines). The third layer structures the environmental context, which can be local, regional or national. Since the enterprises in the investigated network are located in five municipalities within a single department, mapping of the regional context (department) was deemed appropriate. As the business community does not establish a clear relationship with members of society, it is here

in this regional context that community and society members are situated. It is also here that the environmental component (natural resources and species) resides.

5.1 Static mapping

Static mapping gives a snapshot of a community's contextual environment through illustration of the resources and responsibilities associated with the agencies and organizations with which the community interacts. The operative incentives and information available to stakeholders can be determined through case study analysis and interviews with key informants. This tool has been used to illustrate both the process and participants, and even to diagram the organizational flow that maps out formal links among relevant stakeholders (Holland, 2007). Static mapping relates to fixed position, such as that indicated by latitude, longitude, climate or land use in a specific area. It does not, of course, represent the dynamic reality of contemporary geography, nor does it adequately explain the underlying causes and consequences of relations portrayed on the maps (Rycroft & Cosgrove, 1995). This mapping is also viewed as a representation of the actual flow of resources (always continuous lines) between enterprises in the business network and the various public, social, private and international agents. Its theory identifies money, information, services, decisions and solutions as primary resources.

Relations between the network and its various nodes are determined through static mapping, which in turn establishes a first level for analysis and the level of institutional interaction or dynamics. Since this layer condenses the actual flow of resources, mapping of the businesses'

current relations was carried out using information provided by workers, and owners (Figure 2). Data gathered from the survey instrument regarding interaction, cooperation and interdependence served as the basis for the static mapping of the network.

Workers were interviewed about three levels of relations. The first involved determination of the reciprocity of relations with other workers and owners; collective decision making processes; commitment to the needs of all members; trust in the information and other things businesses have to offer; and transparency in the businesses' behavior, and commitment to success and overall performance.

Relations with all the other businesses and the network's executive administration were examined at the second level. And, at the third relational level (nodes), the instrument looked into interactions with officials from local government agencies; a foundation representing the social agent; a business of the private agent, a multilateral body, the neighborhood and the environment.

Workers (net center) confirm their relationships with workers and managers from other network enterprises (E), as seen in figure 5.1.A. Relations with international (I), private (Pr), third sector (TS), public (Pu), and community (C) agents are proportionally fewer. Based on a visual analysis of the graph, if an adequate exchange of resources among network businesses does in fact exist, interactions with stakeholders from other agents should be more robust. Even though the most representative member of each node (private, public, third sector and international) was investigated, some workers acknowledged no interactions with them.

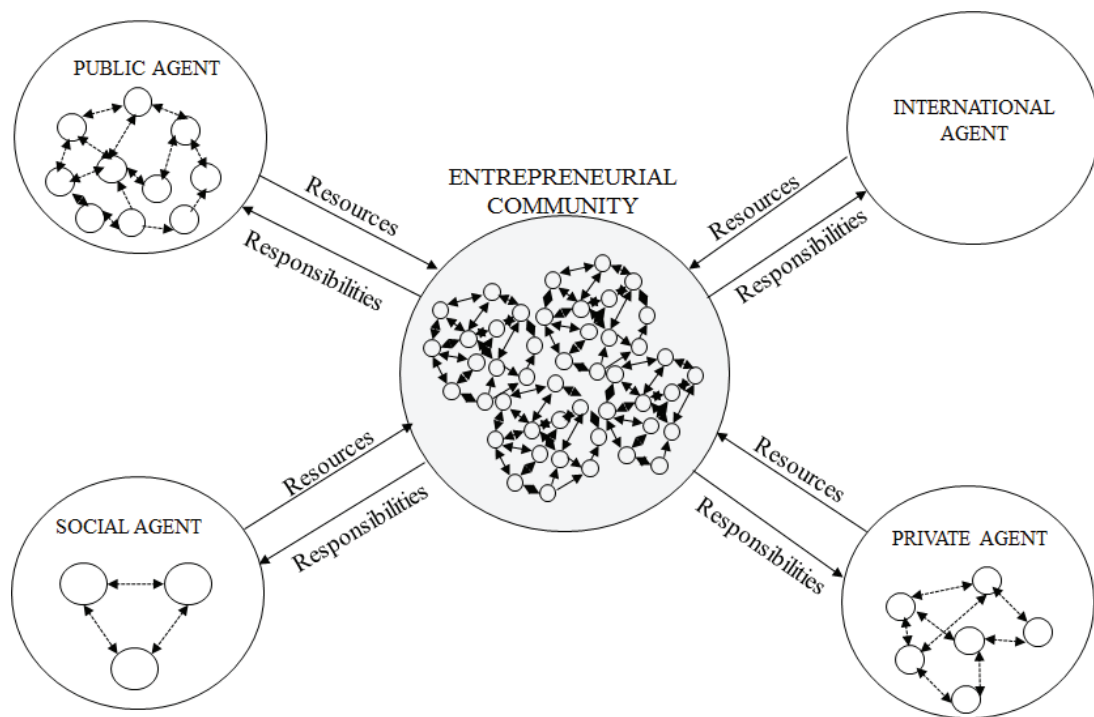


FIGURE 2 – Static mapping of the network.

The business owners in turn expressed their opinions on government investment; the favorableness of legislation for industry and the region; they made reference to ties with government entities, non-governmental organizations, members of society, the media and the political, social, economic, regional, cultural and global environment. They spoke about representation and the fight for collective interests; involvement in public decisions (environmental, social and sectorial policy), identification with the business community, and responses and adaptations to changes in the various nodes. They shared their thoughts on sectorial, social, community and environmental demands in planning; the fluidity of relations with the executive administration of the network; interactions with local authorities, the social agent's foundation, the multilateral body, other network enterprises and suppliers. They talked about their trust in the other businesses and the information they share; their perceptions of other owners' transparency, commitment and follow through.

It appears that the owners' dynamic is quite distinct from the workers' (Figure 5.1.B). The owners (net center) perceive more interaction and cooperation not only with the other members in the network (E), but with other nodes as well, including the public node (Pu), the community node (C), the private node (Pr), the non-governmental node (Ng), the international node (I) and the social node (TS). In both mappings, continuous lines indicate the flow of a resource; the arrow indicates the direction relative to the agent. The conclusion can be drawn that the owners perceive more connections to the ecosystem's exterior nodes (Es); for workers connections exist only within the interior of the business community. The first research hypothesis is therefore accepted: workers' and owners' perceptions are different with respect to network relations and interactions.

5.2 Process tracing

Process tracing is a qualitative method that allows the trajectory of resources to be

tracked or followed; it identifies ideal paths and reveals risk or problem areas and potential solutions. Systems theory focuses on two types of resources: material and information. Material resources include personnel services and money. Information resources include participation in decision making, data and solutions. The purpose of process tracing is to test hypotheses about expected impacts on a community. When

carefully applied it clearly illustrates, sometimes, complicated linkages and sequences (Holland, 2007). The tracing maps analysis of the origins and destinations of the flows of goods and personnel and establishment of connections between areas. Process tracing outlines the flows of resources deemed ideal (dotted lines) for the functioning of a business community (Figure 3).

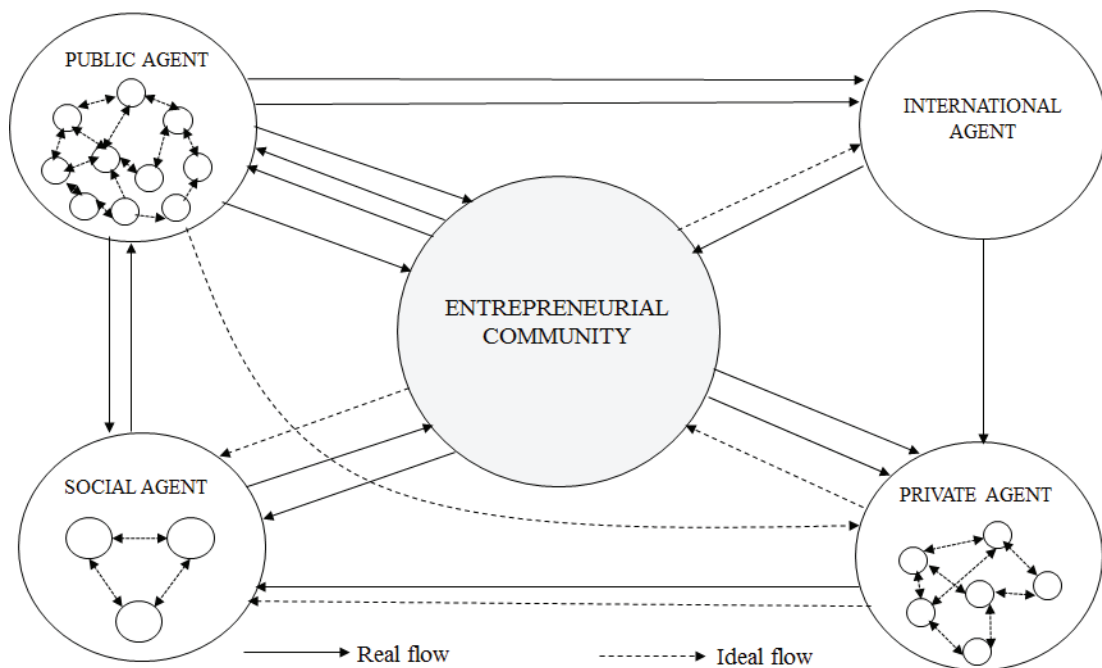


FIGURE 3 – Process tracing of network.

The objective of process tracing here is to track the ideal flows of resources and visually represent risks, deficiencies, and potential solutions from the points of view of workers, and owners. Using current relations as a starting point, the ideal flow of resources among the ecosystem's nodes is traced. The process tracing in figure 5.2 diverges significantly from the static mapping in a fundamental way: reciprocity of relations (two-way arrows). It should be remembered that dotted lines represent ideal flow, continuous line represent actual flow.

This means that each business could not only exchange a resource with the other businesses in the network, but with the agents or nodes as well. The data gathering instruments identified the stakeholders with whom it would be necessary to establish more robust interaction. In figure 5.2.A, workers (net center) were asked about reciprocal relations with other businesses in the network. Such as support from local authorities and officials (Pu); involvement of the foundation (TS) and one of the private agent's businesses (E); the flow of resources from the multilateral body

(I); pro-environment actions and awareness of the ecological impact of present-day activities (Es), and neighborhood interactions (C).

The instrument explored the business owners' positions (net center) on certain ideal matters, such as respect for public democratic values, commitment to and transparency with stakeholders, and investment in community improvements (figure 5.2.B). It also asked about who might be affected by the business' activities and the business' commitment to solving social problems (C). Similarly, owners were questioned about the timely payment of taxes into social spending and welfare funds, social well-being, eradication of activities that put society and nature at risk, and planning for the mitigation of injustices against society and nature (S). Finally, the instrument explored implementation of programs that promote protection of the environment (Es) and active participation in national and sub-national public political processes (Pu).

It is beneficial to strengthen relations between the business community and stakeholders from the public, private, and social agents. As the static mapping pointed out, workers are seldom familiar with even one stakeholder from each agent. Similarly, the business community should recognize that society and the environment are fundamental agents. Given these circumstances, the network should aim at achieving the ideal tracing (starting from the vision of both workers and business owners) and implement the strategies necessary to strengthen and consolidate relations, interaction and cooperation with the previously mentioned nodes in the ecosystem.

5.3 Institutional mapping

Institutional mapping is a tool that illustrates, in map form, the broad network of

flows of decisions, resources and information. It is a diagram created from process tracing's many individual threads. It can be used to identify bottlenecks, constraints and opportunities to change processes to make them more efficient and effective (Holland, 2007). It identifies formal and informal rules and procedures, and relates resources to activities.

One last important objective of the mapping process is identification of the means, incentives and mechanisms for mitigating obstacles and turning bottlenecks into opportunities for change (Holland, 2007). This mapping structures the environmental context, be it local regional or national. As the enterprises in the network researched are geographically situated in five municipalities of a single Colombian department, it seems most appropriate to map a regional context (figure 4).

Since a business community does not have a clear relationship with members of society, it is within a regional context where members are included in their two dimensions: community and societal. It is in this context as well that the environmental component (natural resources and species) resides.

In all cases, cross-scale institutional linkages join collective bodies functioning on different scales or levels of social organization or political jurisdiction. Institutional nestedness is defined as "appropriation, provision, monitoring, enforcement, conflict resolution and government activities [...] organized at multiple layers" (Ostrom, 1990 as cited in Heikkilä *et al.*, 2011, p. 123).

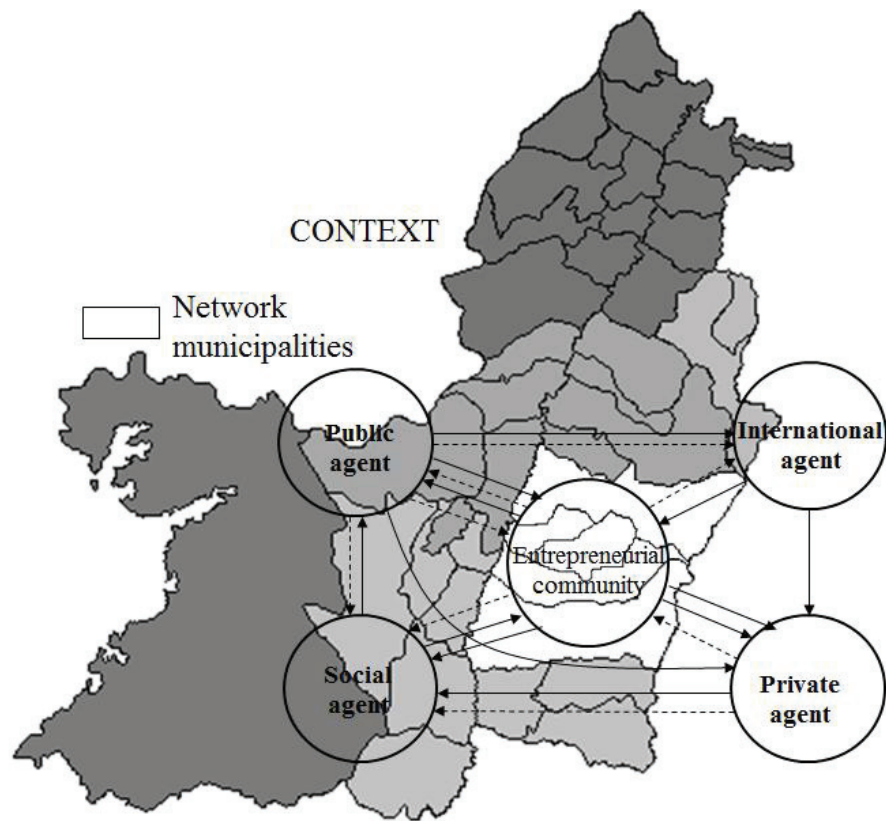


FIGURE 4 – Institutional mapping.

Nestedness has involved action situations linking smaller scale groups, such as local users, with those of a larger scale (government entities). On the opposite side, polycentrism describes arrangements where multiple independent decision makers have overlapping authority, and

therefore participants have multiple opportunities to forge or dissolve linkages among different collective entities (Ostrom, Tiebout & Warren, 1961 and McGinnis, 1999 as cited in Heikkilä *et al.*, 2011).

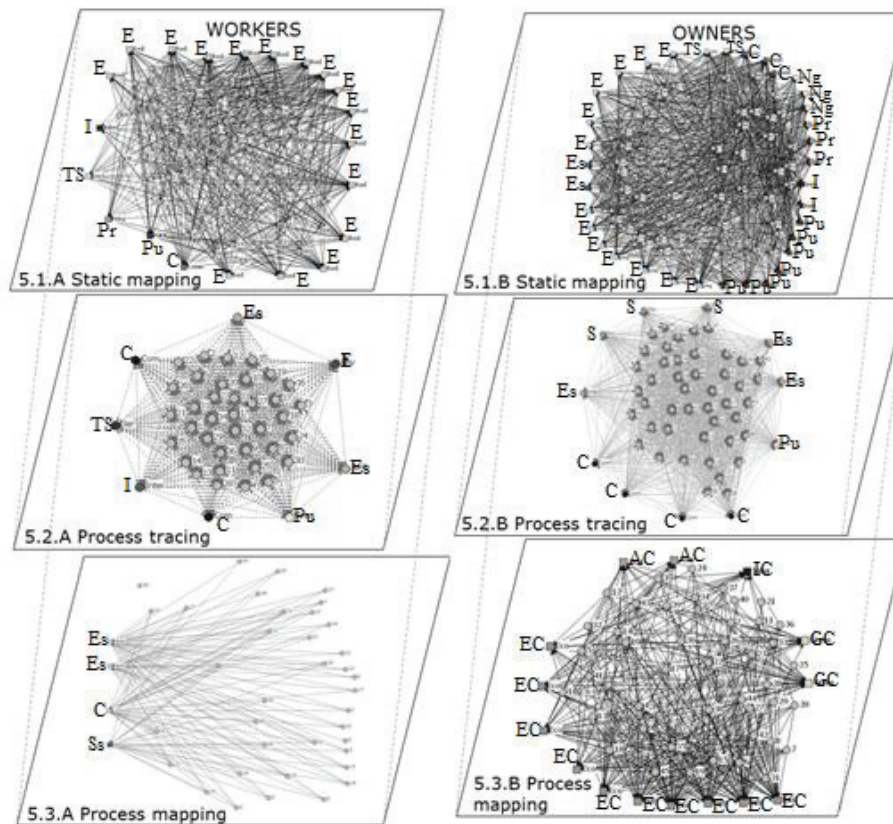


FIGURE 5 – Institutional mapping.

The instrument administered to workers (numbers) assessed the importance given to sectorial, community, societal and environmental contexts. Figure 5.3. A maps such things as alignment between strategies and community demands (C); the effects of unanticipated sectorial situations and events (Ss); implementation of actions to protect the environment and awareness of the environmental impact of activities on a neighboring context (Es). Consistent with their station, the business leaders (numbers) assessed the impact of economic, union, as well as academic and international contexts (5.3.B).

Among the topics they identified as highly impacting business activities are rate of unemployment, business credit interest rates, regional economic expansion, overland transportation conditions, proximity of air and sea terminals, telecommunications system, departmental health system (EC). Also, the existence of regional training centers and public

and private universities (AC), operation of entities for the promotion of business and research (GC), and the presence of multilateral bodies promoting innovation (IC).

As displayed on the institutional map, workers believe that more attention is paid to environmental than community concerns, such that greater importance is attached to the impact of business activities on efforts to protect the environment and environmental awareness than to business decisions that align with community demands. There is no doubt that within the community of business owners, economic policy is seen to have a greater impact on the network; of concern, though not surprising, is the low impact academia has on network activities. This is justifiable at both departmental and national levels due to the declining involvement of private universities and centers for research and innovation in business. With this, the second research hypothesis is accepted: business

owners believe that the contextual environment's economic impacts on network activities are more important than the environmental and social impacts resulting from business activity.

6 CONCLUSIONS

Data for this research was gathered through applying an instrument designed by the authors. These data were then used to construct the maps in Figure 5. The moment has arrived to use these intermediate analytical tools to formulate conclusions. The business network being researched is an aggregate of organizations in the tourism industry; the network links the organizations to one another and allows them to establish relations with four types of agents: public, private, the third sector and international. The interdependence of the network and its nodes gives rise to a whole labeled an organizational ecosystem. Perhaps business administration has made progress in the organizational study of business networks with respect to adaptation points of view; however, institutional analysis of business networks from the perspective of selection has not.

This study demonstrated that a network can be analyzed as a business community (with 45 businesses comprising the network) and as an organizational ecosystem (45 networked enterprises, 10 public organizations, six private, three from the third sector and one international agent). Both the community and the ecosystem are collective entities which ecology identifies as organizational forms. From an institutional point of view, the network is made up of enterprises that are organizations in their own right; and the international node, for example, is represented

by an organization recognized as an institution. Altogether, the aggregate of 45 businesses and 20 organizations comprising the various public, private, third sector and international agents constitutes an institutional arrangement or governance structure. The chief conceptual contributions of this research are summarized in Table 1.

The linkages among the stakeholders of each agent (public, private and social) were always drawn using dotted lines, that is, as ideal flows, given that this project did not look at established relations inside each agent. The research focused on the business community's (45 businesses) workers, and owners, but the possibility of conducting research from the standpoint of the perceptions of stakeholders in the various nodes remains open.

The research examined one institutional arrangement (its network and nodes) and its institutional context (community, society and region). A personal survey for workers and a second one for business leaders were the mechanisms used for data collection.

Among the principal findings are: 1) While theory identifies information, services, decisions, solutions and money as resources, as far as the workers in the businesses researched are concerned, the first four flow naturally inside the business network, but money is perceived as a resource that should always originate in the other nodes of the ecosystem. 2) The business network context encompasses all 42 municipalities in the Colombian department, not just the five where the network's 45 businesses operate. From this perspective, citizens from the five municipalities make up the network's community dimension, but all citizens in the remaining 37 municipalities would be represented in its societal dimension.

TABLE 1 – Conceptual contributions of the research

Aspect	Institutional analysis	Ecological institutional analysis
Relations	Among the 45 businesses in the network (organizational arrangement)	Among the 45 businesses in the organizational arrangement and the agents' 20 organizations (ecosystem)
Change produced	Individualized to the various businesses in the network	Collectively in the network and in the four nodes
Link to the environmental context	The network's businesses and their contextual environment in five municipalities	The network's businesses, the ecosystem's organizations and their societal and environmental context
Purpose	Competition among sub-networks (lodging, transportation or entertainment enterprises)	Cooperation among the sub-networks (lodging, transportation or entertainment businesses)
Linkages	The ecosystem's enterprises and organizations	Ecosystem and socio-environmental context
Considerations	Economic	Economic, social, environmental, cultural, etc.
Legitimacy	Cognitive (self-proclaimed by the network)	Socio-political (recognized by societal agents)
Emphasis	Cultural and normative framework	Legitimization process
Mapping	Static mapping and process tracing	Institutional mapping
Map visualization	Flow of material and information resources	Means, incentives and rules
Data extracted by the surveys	According to workers there is sufficient exchange of resources among network enterprises, but interaction with stakeholders from the various agents is low; relations should be strengthened between the enterprises and stakeholders from the public, private and social agents. According to business leaders, there is greater interaction with other members of the network, the four nodes, and the community. It is important to recognize society and the environment as fundamental agents.	According to workers greater attention is paid to environmental actions (protection of the environment and awareness of environment) than to society's demands. According to business owners, economic policy is what most impacts the network, attribute academia as having minimal impact on network activities

According to workers, the exchange of resources among the businesses in the network is sufficient, however, interaction with stakeholders from the various agents is low. It is necessary, therefore, to build up the enterprises' relations with additional stakeholders from the public, private and social agents. On a different note, workers felt the network paid more attention to environmental efforts (protection of the environment and awareness of environmental impact) than to the demands of society. Owners believe there is more interaction with other network members, with the four nodes and with the community, but feel it is important to recognize society and the environment as fundamental agents. In their eyes, it is economic policy that has the greatest impact on the network, and they demand greater support from academia (universities) for network activities.

As derived from the ecological institutional analysis performed, the principal suggestions

being set before the business network are: 1) Clearly define the material (services, money) and information (participation in decision making, data, solutions) resources that can be exchanged among the various members of the community, the ecosystem, and users of the resources. 2) Define the rules for appropriating and providing resources with respect to regional, not municipal, conditions. 3) Collectively formulate policies, rules, norms and standards in situations where all agents are represented. 4) Assign duties for auditing use of common resources to a group of business leaders. 5) Define a system of sanctions for institutional violations of international arrangements, policies, rules, norms and decisions. 6) Establish mechanisms for resolution of conflicts in the community or ecosystem. 7) Call for the active participation of the political agent and its various stakeholders.

It is the authors' hope that the executive administration of the network, network business

owners, and stakeholders' representatives will make decisions that both strengthen relations among the members of the institutional arrangement and support selection of institutional contexts more favorable to performance of their activities (the goal of selection approaches). As international arrangements are important to the consolidation of national systems, it is essential that the network add more institutions, like a worldwide organization and a global code of ethics, to its international node. The network and its four nodes will be recognized as a unique, solid institution once its linkages, interactions and mediations flow appropriately (static mapping), and especially after suggested international arrangements (trace mapping and institutional mapping) are addressed.

Finally, the idea that a business network could serve as a very useful model for public policy networks cannot be ignored; after all, businesses will always be stakeholders that can be brought in on participative processes. At the same time, it will always be more practical to deal with business networks than with individual businesses. Further, as discussed in section three, the public policy process allows for the possibility that organizations external to government, such as businesses and chambers of commerce, take part in decision making. The institutional ecosystem under study accommodates 45 businesses from the tourism sector, three chambers of commerce and three enterprises from outside of tourism. This research points toward an institutional aggregate that participates actively in the formulation of the Colombian department's economic and industrial policy.

NOTE

- 1 This article was translated by Lynn Eddy-Zambrano. Master of Science, Management and Organization Development. Certified Translator (Spanish-English), American Translators Association. ledydzambrano@sbcglobal.net

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