

Dan SERGHIE
Romanian Foundation for Business Intelligence

NETWORK IDENTITY - A POSSIBLE INDICATOR FOR EVALUATION

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Abstract

The objective of this article is to define the concept of network identity and to validate its role as a catalyst and its role to maintain in time the collaborative structure in order to achieve the goal of innovation.

I have analyzed collaborative structures in various fields of activity in which individual actions are linked and participants consider their effect on a common goal. Human behaviour in general, according to the sociological definitions, is a result of the native factors (as I think I should behave) and social factors (as I show that I should behave).

Non-economic motivations have a role as collaborative network builders and as supporters of individuals' intensity of connecting, but they also have a role in maintaining the collaborative sustainability. These are related to beliefs about how organizations - and particularly individuals - act and simultaneously have expectations of other network members. Non-economic motivations, in turn, are studied in particular by sociologists, these coming from the structure of the social individual (native characteristics or induced by the influence of the organizational environment or society as a whole).

A descriptive research is needed to identify the existence of a set of specific characteristics that can define the identity of collaborative structure.

THE SENSE OF THE STRUCTURING

Economic modelling designed to facilitate innovation in organizations led by classic management rules, hierarchically structured, largely ignored non-economic motivations of individuals. Developing communication through means facilitated primarily by the platform provided by internet has shed light, in a surprising and totally opposite perspective, an innovation potential resulting from collaboration. Individuals work and interact together without being economically motivated (by immediate financial gain or own utility in the economic sense). This view stands against the accepted psychological rationalism of classical economic theory, centred on "*homo economicus*".

Two elements maintain over time the collaborative structure and conceptualize the term of network identity: actors' behaviours (seen as interrelated actions) and the manner in which they are motivated to connect their knowledge and actions. By identifying specific characteristics of identity and their combination in different proportions, I will propose a model for analyzing the interorganizational collaborative structure, oriented towards innovative performance. In this sense, I formulate the working hypothesis:

Network Identity is directly correlated positively with the interorganizational collaborative performance innovation.

The defining approach proposed by the descriptive research consists in highlighting the fact that the community identity sustained by leaders is a discursive means of legitimating of the collaborative network and its aim is to maintain on long term the mutual connection structure of component entities, possessing different and complementary knowledge bases.

By the external observation method on industrial technology companies, we have identified two main types of structuring collaborative networks:

1) **Networks centred on a contractual relationship**, in which inventors can join or not other organizations that exploit invention patents.

In this case, the success of the innovative nature of the collaboration comes from the subordination purpose of making money, at least in the short term, and network identity becomes an extension of the network identity of the dominant firm. This method of establishing a network on pragmatic-economic considerations, follows, most often, a series of standardized actions:

- Leaders responsible for the innovation identify ways to scan the market, opening and popularization of intentional channels. The initiative of such an opening to outside the company can derive from a project manager or from a development department;
- By identifying organizations in a field of expertise placed in a sphere of complementary knowledge of their activities, holding or not the patents or invention patents, leaders or project managers will set the limits of their own business segment or selected products for innovation;
- Depending on the economic strength of partners, stakeholders positions and the interorganizational dominants are ordered;
- Gains or potential losses of network collaboration are estimated and the contractual conditions of actions are prefigured;

2) **Networks constituted most of the times unintentionally**, around some areas of interest of knowledge, become attractive for the organization, in terms

of their potential complementarity to their skills.

I personally experienced interorganizational creativity when I ran Expert Moldova Trading Company, within a project for creating a common interface for managing campaigns stocks and reductions, along with a producer. I used the possibility of internet transferring, through "File Transfer Protocol" and I centralized data on a shared server. The project was carried out without a budget, only through involvement and trust between team members, which ensured full transparency on common issues and even nonconformist ideas were encouraged. The aim consisted in confronting us information resources, inventories and promotions so that sales people can provide direct, in a telephone conversation for example, responses to customer requests. The idea of this common project emerged in informal discussions started during an informal meeting organized by the manufacturer.

Such collaborative structures crystallize mostly as a result of entrainment with skills and qualities related to an employee. Mr. Gabriel Leeb, director of sales for the brand DeWalt Romania, subsequently for the Projan brand, currently for Unior, presented me a pyramid of motivations that inspire collaborative projects involving, related to brand marketing activity.

At the base of the pyramid, the ego of the sales' people from distributing companies is identified, people who want to be noted by their own ideas. At the next level, there is the mutual desire of accumulation of knowledge about the brand's marketing policies by the distributor and, on the other hand, knowledge of the distributor's local policies by the official representative. On the upper level of motivation there is the pleasure of

creating something useful together. Of course, this kind of collaborations is not limited to the formation of a creative dyad. A good idea coming from such a dyad is enhanced and used as an innovation prerequisite for the marketing segment in an extensive network that includes a multitude of national distributors and not merely. The innovative final result is reflected in the development of new models of chain sale.

A sequence of actions for this type of collaboration can be described more or less accurately by the following steps:

- The identification, most of the times at random, of some organizations and individuals that can bring extra knowledge and innovation potential in different segments of their business;
- Comparing and quantifying the compatibility between organizational cultures and predominant norms at the level of organizations and individuals;
- Estimating, at the executive management level, of the potential gains or losses;
- Connecting actors through collaborative actions.

THE FRAMEWORK OF CONNECTION AND SPREAD OF IDEAS

The structure elements, human resources, financial resources or otherwise, as well as network specific processes, collaborative innovation circumscribed structures can be characterized by an identity form of their own. Based on this genetic sequences identified by the concept of identity, complex collaborative structures, arrived in various stages of maturity, will give rise to new structures in a continuously evolving model. I will develop this approach in a future article.

The identity form absorbs knowledge, actors, resources and uses them to build interorganizational collaborative ecosystem. Based on the

observations in the preceding paragraphs, there can be created categories of identity characteristics:

1. involvement, mutual trust, transparency of actions and results, encouraging nonconformist ideas, self training ability, elements that make up an ethical code structure,
2. personal ego, mutual desire to accumulate knowledge, the pleasure of creating something useful together elements that fall within non-economic motivations,
3. employees belonging to common or complementary fields, which gives them a level of common expertise,
4. their involvement in the same purpose, the lack of a strong regulative body and the common perspective to see the cooperation's finality induce a common vision of the community.

In conclusion, the definition of identity includes the following network components:

1. Rules of ethical conduct of the community's members;
2. Non-economic motivations;
3. The regulative body;
4. Interactional dynamics of the actors showing how to build a vision similar or complementary of organizations;
5. A high level of sharing expertise, ideals and common objectives.

Collaborative structures can retrieve elements of the identity of one or more dominated firms or they can acquire their own identity. From this point of view, there are two types of collaborative networks:

1. **Structure based on domination**, in which one or more firms with dominant market position impose their identity to the other partners,
2. **Structure generated and maintained by a community's own identity**, without having weight the culture or the identity of participating organizations. Typically, such an identity is not valued financially or

through the influence of the economic power of stakeholders. The valorisation at a network level with its own identity realizes by using attributes of informational intelligence and collaborative skills of the stakeholders.

Network identity is maintained and communicated by leaders both individually and as a community cultural component. Establishing trust is done on a personal level and not procedural (such as organizational environment). Analyzed in terms of order of interaction, network structure is established through a chain of wilful or induced involvement, or at social events (conferences, business meetings, parties, golf and so on that produce information exchange organizational and personal), or by studying the internal and external documents (information, statistics, reports, followed by further contacting potential partners). Simultaneously, organizations that occupy the same competitive positions on the market have a supplier-customer relationship or are positioned on a common landing of knowledge; they study each other as an inherent resultant in the current economic activities. Analysis and scanning occur even if there is no mutual communication and there is a working connection between organizations. For example, in the field of industrial technology is common practice to observe and attempt to copy an innovation of a competitive firm.

If we extend these definitions of interorganizational scanning, we can conceptualize a model of interaction between two or more collaborative networks with different identities. What is perceived as an innovation outside network can be perceived in a completely different way in the interior of the generating network.

In conclusion, we can say that the identity of the network is the foundation that fosters and on which the "fluid" environment is built, an environment that will allow for increased dynamic

informational flows. On the other hand, the leadership at the network level mediates the connections between organizations and sub networks (groups).

Some ways of communication such as meetings held in physical or virtual space through technologies such as Skype, promotes innovative network hierarchy structuring. For example, a product innovation is preceded by the circulation of information at different levels of the value chain of the product in different networks. These networks can be interconnected or not thereafter. Depending on the informational intelligence of the network, the interconnection may have reproductive or combinatory nature.

A POSSIBLE INDICATOR FOR EVALUATING NETWORK'S IDENTITY

Being a qualitative variable for network identity I propose an evaluation indicator estimated by weighting a number of parameters and characteristics subsumed under the concept of identity. This indicator is based on the assumption that a strong network identity, expressed by high values of the indicator helps to generate increased performance of the collaborative innovation. However, the inclusion of this indicator in the general model of sequential performance evaluation influence or cancel collaborative structure ability to achieve innovation results capitalized on the market. (Annex 1)

Similar to processes of building a questionnaire, the rating scale indicator has some control keys that also have the role to weight the importance of certain features in the total value (ie, items 9, 16 and 20 refer to the same feature on the absence of a strong regulative body etc.). Weighting each of these items according to the 1-5 scale, we get the value of the index of up to 100 and higher values indicating

stronger network ID, and the low value, the lower network identification.

Statistical testing and validating of the indicator.

I will develop them in a future article, using the survey as a research method and the introduction of network identity as an independent variable along with communication intensity and the collaborative culture induces by the organizational environment.

External validation and generalization.

In relation to the approach used for the statistical interpretation of elements from the behaviours area in interorganizational connecting, the causes and effects that are external to the individual experience of the researcher, it is obvious to easily appear conflicting results. At the philosophical level, Kant points out errors arising from the use of space and time coordinates, or other physical dimensions in research that cannot be experienced directly at the individual level (Kant, 1925). Buddhist perspective, and that adopted by Wittgenstein in the early 20th century, states that most of the assumptions in the mind of an explorer of knowledge are not true or false, but absurd, the problems resulting from the inability of the individual to understand the logic of our language (Wittgenstein, 1922).

It is not particularly rare that in many scientific analyzes hypothesis may not be true problems in the field of interorganizational collaborative research. We can easily identify the previous philosophic ideas in the picture of literature, reflected by the researcher's attempts to compare categories of factors (whether inter-organizational trust is more or less confused with the partnership, for example) or to identify causality (organizational culture as training binder networks and communities, for example). Economic research by a logical-positivist approach manages unquestionably to bridge theory to realities and economic

phenomena, but using variables in such research is conducted with a precision landing coarser than you find in the field of economic theory due to the lack of tools and accurate measurement (Akerlof, 2010). Any statistical test involves a huge number of options to identify the dependent or independent variables and functional relationship and the time interval considered. Each of these choices has a number of millions of possible specifications.

The individual factors influencing individual creativity and innovation can be identified and measured, but their measurement can be broad and relatively. Logically it can define a critical mass estimate for the each factor, which, in a particular combination, could provide the best results (Zait et. al, 2011).

The alternative method of careful observation, sometimes infinitesimal (microscopic) of details provides valid scientific results available in many areas and, therefore, in those of theories regarding collaborative innovation. George Akerlof, Nobel Laureate in Economics (2001) provides in favour of the acceptance of the details' method a comparison with the structure of life itself. Similarity and differences of living things come from the same DNA molecule characteristics (similarities or differences). Or, economic methodology that emphasizes statistical validation suggests that the intense studying of a single molecule of DNA is just an "anecdotal" case study. The Economist suggests that it is correct and valid to study codes because they are identical, induce duplications, and if distinct induce differences. The internal consistency of ethnography provides a validity criterion, although a different one from the statistical testing.

Analogous to the birth process of an innovative idea in interorganizational networks that connect individuals, generating ideas individually is also the result of collision information in a network, of a constellation of neural

working simultaneously. The individual innovative idea comes from multiple connections of a neural network that explores the adjacent knowledge possibilities of the individual's mind or, in other words, the idea is a network. (Johnson, 2010). Creative environment, academic networks, organizational or mixed, are likened to coral reefs, diverse colonies of creators who interact and influence each other.

Coming down to the microscopic level, neuronal, there are two assumptions of innovative network efficiency: a) the structure is sufficiently large in nodes and connections (in case of normal operation, the neural network contains about 100 billion neurons that run about 100 trillion distinct connections) and, b) to be liquid, to be able to form new models to probe adjacent possibilities of knowledge. Steven Johnson's prediction is that innovative environments have at different scales defining common characteristics. The rational analysis of the factors and framework of variables by which we explore a network of innovation is a dominant way of research in this paper, but metaphysical and transdisciplinary parallels with connected systems that are related to a structure of interorganizational interaction still constitute viable starting points in the construction of new hypotheses and sometimes an assertion of facts of similar performance. The current state of research in the spectrum of innovative collaborative networks is, in my opinion, a cognitive reflection based more on ignorance than on knowledge of the performance of such a structure, performance evidenced primarily on different levels of knowledge.

The structuring of high complexity environments and yet possessing the attribute of liquidity is enhanced by other means of communication such as the Internet or social networks overall. In this case, the motivational framework and of identity of collaborative networks, because typically it integrates a large number of

private individuals, may differ slightly from the corresponding framework of the structures built around the organizations as network nodes. The literature abounds in studies on open source software platforms such as Linux (Von Hippie, 2005), Wikipedia etc.

The motivations identified by researchers in the case of this type of network can be divided into three main categories:

1. Collective motivations that induce adherence to the aims of community's developers. Their approach converges towards these objectives through joint efforts, shared efforts.
2. Motivations for recognition, which, in the case of the network, are not of particular nature, but include only the desire of collective recognition, the team, for the common results.
3. Reward motivations primarily include the organizations or individuals acquirement of new knowledge and skills in collaborating with others and sometimes financial gain or capital by enhancing new friendships.

Eric Von Hippie creates a framework in his research regarding non-economic motivations for open source innovation networks, a similar frame to my concept of network identity. Also Eric Von Hippie, within his paper from 2005, extends this typology of non-network. The profound mutation produced in the manufacturing industry of bicycles was generated by the adoption of the product, long after it was created, through a series of product innovations in collaborative communities of passionate users. More than ten years, the market niche for bicycles mountain

bike was covered in small workshops or small producers based on order, and currently, mountain bike sales exceed more than half of the overall sales volume of bicycles.

By analytic induction, we reviewed the concept of identity successively eliminating those features that did not fit with the others (Fielding, 1986), we reconstructed inductively the matrix of characteristics identified by each specialist used in mediating and maintaining interorganizational collaboration. We compared these characteristics with the necessary conditions of existence of collaborative structures in the literature as well as the sufficiency conditions of the network to generate innovation.

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Annex 1

The scorecard of the Indicator's network identity / community

Rate the following statements on a scale from 1 to 5 as: 5 = to a great extent, 4 = largely, 3 = medium, 2 = little or 1 = not at all,

1. Community adopts a long-term perspective for collaborative innovation.
2. There is a strong level of involvement of community members (reviewed in general affected by working time collaboration).
3. The vision and philosophy of the network are well publicized and known (through discursive means) by its members.
4. The level of trust between partners is high.
5. It shows a high level of transmission of feedback and constructive criticism to the ideas circulating in the network.
6. The intense exercise of lateral network communication.
7. It easily creates opportunities in the collaborative structure for informal communication for the exchange of ideas.
8. The community members are motivated under non-economic aspect by:
 - the intention to be distinguished by their own ideas
 - the desire to increase their knowledge
 - the pleasure to create something useful with other members
9. The network practice does not include mandatory acting rules acted like "if when only "(there is a degree of freedom of the mode of action).
10. Failures and mistakes are accepted as part of a tacit psychological contract that stimulates risk taking within the community.
11. There is a general commitment of community members for collaborative innovation.
12. Community members are currently involved in joint or complementary fields, which give a level of common expertise.
13. Community members have generally self training capacities.
14. Resources are available in the network to support new initiatives or nonconformist ones.
15. Community actions and results are disseminated in the network transparently.
16. Functional structure is decentralized; there are no authoritarian leaders or managers.

17. Collaborative interactions of nature of ideas' exchange, experimentation, and joint observation are subsumed under a common goal of the members, also known and broadcast in the network.
18. There is an acceptable agreement, written or implied, about the benefits and losses that they each organization involved in the collaboration take.
19. Working environment and network interactions are relaxed and often involve fun.
20. Decision-making activities are pushed from organizations to the collaborative community, any of the members being able to involve voluntarily.