
Assessing the impact of participative methods on the structuration of networks: proposition of a model

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Abstract: Networks are systems of actors who have decided, on a voluntary basis, to cooperate and achieve goals they could not achieve at an individual level, generating interdependency among themselves. From a structurationist views, –they are both medium for collaborative action and its institutionalized result. Wishing to analyze the impact of the Network ScoreCard Suite (NSC) – a participative method that tackles the issue of networks’ strategic management - on the structuration of the network itself, the authors rely on the duality of structure to interpret how network members enact the network’s structures in (inter-) action, binding those very structures in time and space, granting them their systemic status. They have designed a specific tool: the Network Analytical Observation Grid (NAOG) to support the observation and analysis of networks progressive structuration through enactment scripts. A use case presents the analysis of the structuration of an emergent network experimenting the NSC and illustrates the interest of the NAOG.

Keywords: Network - structuration – processual analysis - assessment – theory of structuration

1 Introduction

The objective of the authors is to develop a method to assess the progressive structuration of networks. Giddens structuration theory provides a comprehensive but very theoretical framework to understand the structuration of social systems. This research is an attempt to operationalize it in a concrete method in the field of organization studies.

Public Research Centre Henri Tudor in its mission to enhance innovation in Luxemburg supports associative networks. One of the services developed in this framework, is the Network Scorecard Suite (NSC Suite): a method addressing the issue of networks management, which consists in accompanying networks in the collective definition of a strategy, a plan of action and a ScoreCard. The authors, aiming to assess the impact of the NSC Suite on participating networks, mobilize the Structuration Theory to analyze the progressive structuration of those networks. They develop a methodology for the analysis of networks structuration based on the concept of scripts, evidences for the iterative and ongoing processes of social and systemic structuration. Supporting the whole methodology, the Network Analytical Observation Grid (NAOG) offers different levels of utilization according to the purpose of the observer. A case study: the participation of an emerging network in the field of ICT to the NSC Suite illustrates the utilization of the NAOG. As a conclusion, the authors analyze the benefits of the NAOG as a tool to assess networks evolution and propose perspectives of use.

2 A structurationist framework

Anthony Giddens theory of structuration is aimed at studying the ways in which social systems are produced and reproduced in social interaction (1984) [1]. Far from determinism, the theory of structuration redefines the traditional relations of dualism between structure and action in the concept of *duality of structure*, which states that structure –makes social action (praxis) possible – both enforcing and maintaining it, while at the same time recursive praxis creates and reproduces those very structures. Another pillar of the structuration theory is the concept of *Agency*, which includes human acts and the resulting activities.

The duality of structure

The duality of structure relies on the distinction between structures and social systems, which Giddens deeply reformulated.

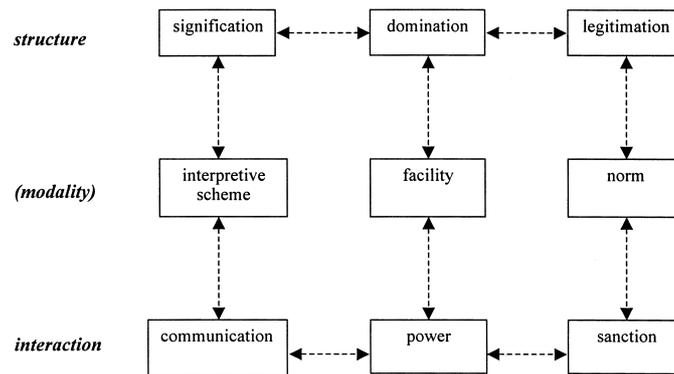
Social systems are seen as “a set of social practices which are reproduced over time and space” [1]. Interrelations and actions of agents composing the network are organized as recurrent social practices and imply interdependencies among them. The constitution of the network occurs through ruled schemes of social relations – considered as practices reproduced over time and space.

Structure is a set of and resources, organized as properties of social systems that enforce and maintain the action of the agents at the same time, enabling social practices to unfold in contexts of times and spaces and giving these practices a systemic character. Giving form and shape to social life, structural proprieties of systems are not themselves form and shape, as they only exist in the activities of human agents (Giddens, 1989) [2].

Structure and interaction are related by *modalities of structuration*, which are the concrete means agents use in a situated action context. They characterize how agents make use of these rules and resources therein.

Finally the interaction dimension is the one in which agents interact, in the framework of structure, producing and reproducing them. It has communicative, power and

sanctioning aspects: agents execute power by applying facilities they have access contextually and individually (these facilities are selected, combined, used, and recreated: they enable agents to transform interaction sequences). Agents communicate in interaction and reflexively apply interpretative schemes drawing upon rules of signification. (Ex: different levels of membership on networks). Finally, agents sanction behavior or events by applying norms – derived from rules of legitimation. (Co-option, rewards) (figure 1).



Source: Adapted from Giddens (1984) p. 29

Figure 1 The duality of structure (Giddens, 1984).

Giddens structuration theory is mainly criticized for its static character. Barley and Tolbert (1997) [3] have tried and translated it “into a more dynamic model that links action to the maintenance and change of an institution and that provides a framework for empirical research“. Relying on the concept of Script, defined as observable, recurrent activities and patterns of interaction characteristic of a particular setting, the authors describe a conceptual framework that specifies the relations between interactional episodes and structural principles. The model considers structuration as a continuous process, like cycles succession, whose operation can be observed only through time in a dynamic process (figure 2).

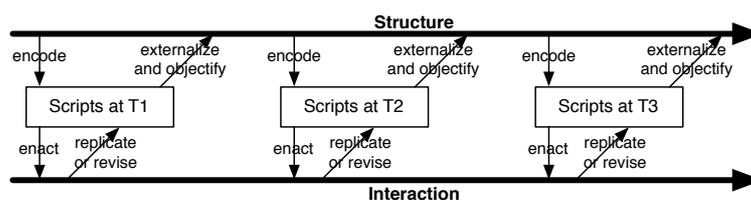


Figure 2 Dynamic model of structuration (adapted of Barley and Tolbert, 1997).

Barley and Tolbert (1997) [3] dynamic model follows as temporal progression, where structure and interaction realms are interdependent. The two realms are linked by the progressive integration of scripts. Thus, a first step entails the encoding of structure’s principles in the scripts used in specific settings. Then, actors enact scripts. Encoding and enacting the structure in action represent what Bellemare and al. call the “social integration process”, the structure’s constraints on action. The second step describes the degree to which behaviors revise or replicate the scripts that informed the action. Barley and Tolbert (1997) [3] underline that « changes in technology, cross-cultural contacts,

economic downturns, and similar events increase the odds that actors will realize that they can (or must) modify an institution or a interaction in our case ». To finish, it acts of objectification and externalization of the patterned behaviors and interactions produced during the cycle. The second step represents the maintenance or modification of the structure through action.

This model interests us particularly because of it will be possible to comparing the scripts uncovered at T to those T+1, one can access whether change in an interaction order has (or has not) occurred. Thus, « given such a systematic comparison, the task is then to identify the forces in the interactional setting and beyond that produced the observed outcomes and to link the findings to other indicators of institutional change beyond those found in the research site itself » (Barley & Tolbert, 1997) [3].

Knowledgeable agents

In acting, agents are not totally maintained by structure, nor totally free of action. They are not merely passive and have the capacity to transform situations.

Their action is stratified in three levels: first of all determined by their *motivation*, their ability to act, to achieve their desired results, in Giddens understanding. To do so, Agents uses both resources and constraints, be they individual, organizational or social.

Mobilizing the tacit knowledge they have of the conventions, constraints and social rules, as well as of the consequences of their action on the process of social life, agents *rationalize* their action.

Finally, after they have acted, agents look at their action to judge their effectiveness in achieving their objectives through, what Giddens calls *reflexive monitoring*.

As shown on figure 3, two limits exist to the action of agents: the unacknowledged conditions of action and their unintended consequences, which can become unacknowledged conditions of following actions.

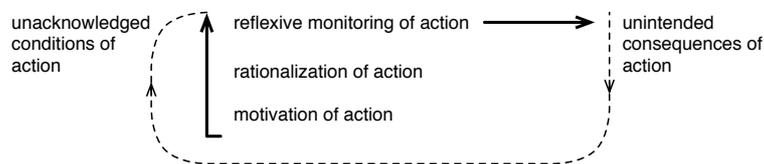


Figure 3 Stratification model of action (Giddens, 1984) [1]

As structures are virtual by nature and the mutual knowledge the actors have of it is mostly tacit (understood as a practical consciousness), the question is how to observe structuration? Orlikowski [4], addressing technological topics, considered that it is only when technological elements “are routinely mobilized in use that we can say they structure human action, and in this way they become implicated as rules and resources in the constitution of a particular recurrent social practice”.

Translating this statement in the field of organizational studies, we consider that an organization, as a technology, “does not embody structures because those are only instantiated in practice” [4]. Therefore, structures are not embodied in organizations but emergent as they are being enacted in action.

Structuration can therefore only be identified through the observation of daily activities of agents.

Organizational studies: the structuration of networks

Structuration theory has progressively entered the field of organization studies [4-5-6-7]. In the 80's a structurationist approach of organization emerges, which consists of the following statements [6]:

- Organization is an individual and social construction resulting from previous constructions;
- Organizational forms are reproduced and adopted or invented through every day practices and interactions;
- Organization is both an interiorized and objective reality;
- Actors are reflexive subjects.

This structurationist approach of organizations integrates progressively the duality of structure to apprehend social innovation processes.

We here see networks both as a new form of organization structuring cooperation and as a process of collaboration structuring the reticular organization. They are a construction, enabling different agents to cooperate to achieve a particular objective.

Therefore, the theory of structuration provides a methodological framework to study the progressive structuration of networks as social systems: if neither structures, nor relationships among actors can explain social processes, the duality of structure can: it can be understood through the modalities, relying the structural and the relationships dimensions.

The structures of networks, processes of regulation of collective interactions are produced recursively by the very actions and interactions of the networks members, enabling and constraining these actions.

Bellemare & Briand [7] recommend starting any structurationist analysis by studying social integration practices, i.e. with the exploration of the *mutual knowledge* of the network: referring to governance, coordination and control practices (programming, organizational structure, budgetary control, performance indicators, etc.). As presented before, this mutual knowledge, embedded in scripts is enacted in social action of the networks members.

3 Methodology

Highlighting the progressive structuration of a network requires starting with human action and examining how it enacts emergent structures through recurrent interaction with the organization.

This implies a longitudinal observation. The duration of the observation is to be set at the beginning of the observation phase.

The Network Analytical Observation Grid

The authors have developed a tool to support the observation of the praxis in a network: the inter-actions of their members and the exploration of the *mutual knowledge* of the network through its enactment. As presented before, this mutual knowledge, embedded in scripts is enacted in social action of the networks members.

The Network Analytical Observation Grid (NAOG)¹ helps to observe the everyday activities and interactions of networks members, i.e. how they enact their mutual knowledge in the praxis.

The lines of the grid help sorting out the topics of the members' activities. As the mutual knowledge in networks refers to governance, coordination and control practices (programming, organizational structure, etc., the lines of the grid highlight the topics of networks issues: strategy, activities, management, membership, external relationships.

The grid's columns refer to the longitudinal character of the observation. It helps highlighting the evolutions of these topics, how the emerging structures of a network are progressively enacted into the field of action.

Using NAOG is presented in the methodology hereunder.

First step: Studying social interactions

For Jörg Sydow [5] evaluating networks in a structuration perspective is evaluating the process of interaction in which managers, by reflexively monitoring the contextual embedded activities and their effects, try to control the outcome, and eventually the process of organizing with respect to particular criteria. The exploration takes to describe in detail everyday social activities of the members of the network, based on empirical data and to interpret these practices by translating them into the mutual knowledge they contain. Practically, the researchers should start with collecting empirical data: documenting actions and meaningful phenomena in order to describe social activity. The detailed description of social activity is to highlight the conditions of action, and the dialectic of control of each context, and parameters that are relevant to actors: concepts, reasons, etc.

Collecting data

The collection of information is a crucial phase and should be performed through a **triangulated information collection** to draw on the particular and different strengths of various data collection methods and to cross multiple sources of evidence. According to Pettigrew [8]: "data collection is concerned with observation and verification and, in longitudinal field studies, these are iterative processes. One observes, follows themes and trails, identifies patterns, have those patterns disconfirmed or verified by further data, and the process moves on."

Studying existing documents of the network is to be performed first, providing relevant information – mainly formal and static - on the situated context of action and giving a first insight of the formal side of the network: (Status, charter, minutes from general assembly, value proposal, website, evaluation report, Communication supports (press releases, radio interviews, etc.)).

Participation in some network activities or meetings helps getting deeper in the network's life and collect more informal and qualitative aspects on activities, relations and decision-making processes. "In a workshop situation reviewing facts, interpretation, and overall patterns in the process, there is an interactive dialogue at a richer and higher level than is normally possibly from data gathering with individual respondents. This richer mixture can add considerably to the iterative process of observation, verification and validation at this later stage in the process of discovery". [8]

Finally, through interviews with key informants get the missing – qualitative and subjective information. This will consist in:

Building interview support: The observer is to list the relevant missing information (quoting the missing items of the grid) and build an appropriate interview material (mainly informal, dynamic, subjective and individual information)

Identifying key informants: It is crucial to interview at least three different and particularly representative stakeholders (representatives from the public sector and private sector, members of the board, animator, founding members, etc.).

Taking contacts: The first contact should be made with the official representative of the network (President or animator) to introduce the study, its context, objective, functioning and perimeter, highlighting the benefits for the network. The official representative will be interviewed in any case.

Performing the interviews should involve two persons (one to ask questions and one to take notes and record) and be led as a semi directed conversation. Therefore the support material is to be quite light, just reminding of the main items. Output of the interviews, the report of the interview contains both description of the answers to question and informal information (feelings from the observer: climate, impressions, etc.) The content analysis will be performed on basis of the recorded material. In order to be considered as valid, oral data collected must be written down and acknowledged by the interviewee before being analyzed.

The collected data is uploaded in the NAOG.

Interpreting data

This first level of analysis consists in telling the story of the network in a chronological and historical way. The **network case analysis** will give the observer an insight of the evolution of the network: changes in its context (internal/external) and the processes implied by the change. The method consists in identifying the scripts in which the participants enact the structure in their social action. The difference between formal (study of documents) and informal data (participation in activities and interviews) will give a sight of the level of standardization / formalization / institutionalization of processes inside the network, while the differences between the interviews will provide information on the level of mutual knowledge shared by the interviewees: The observer should also consider individual members' representations, perceived constraints and opportunities to understand their choices or behaviors.

A feedback of the first level analysis will be presented to the network for empirical validation.

Second step: Analyzing the story of the network

The second level of analysis is aimed at raising the understanding of the constitution of the network through a deeper analysis of systemic integration practices (social and systemic) focusing on explaining how structures are produced and reproduced in action.

In compliance with Giddens propositions, this analysis leans on a structurationist explanation, i.e. on the dimensions of the duality of structure. Involving theoretical input, this analysis relies on ongoing iterations between practice and theory, structuration being but linear, coherent and unavoidable. Concretely, researchers will match identified phenomena with the framework of theoretical concepts: the dimensions of the duality of structure (structural proprieties, integration modalities and social interaction), as well as their analytical dimensions (signification, legitimation and domination).

The objective is to draw general patterns of network's functioning, by the identification of the scripts for each step composing the network case analysis and to interpret these scripts with regards to the dimensions of the structure, understanding the

progressive structuration of the network as a social system through systemic integration practices, linking empirical data with the theoretical dimension.

4 Case study: the structuration of YaJUG

Context of the research

The Public Research Centre Henri Tudor (CRPHT) is entitled to foster innovation, in particular through the creation of networks. From the detailed overview of existing networks have emerged some common characteristics:

they gather mainly individuals around a common thematic or concern and do not pursue a direct economic goal;

their members meet physically on a regular basis (geographic factor);

most of them have the legal status of non-profit association;

these networks seldom have a clear strategy and for those who do, it is hardly known by their members.

Drawing on these conclusions, in the framework of the TINIS project¹, CRPHT has addressed the issue of networks' management with the Network ScoreCard Suite. This method was proposed to an emerging network in the ICT field: Yet Another Java User Group in Luxembourg (YaJUG).

The network Scorecard: a participative method to support networks management

As both support for collaboration and its institutionalized result, networks do not match usual performance criteria [9]. Their functioning and performances are social constructions. This approach emphasizes the dynamic aspect of networks - funding of their activities - the situated aspect of collective learning, potential contradictions or unexpected consequences that may progressively emerge. De La Ville & France highlight three major issues for networks [10]:

- mastering inter- institutional coordination mechanisms;
- identifying resources and activating synergy potentials;
- managing emergence to anticipate opposition and avoid the exhaustion of the project.

The Network ScoreCard Suite (NSC Suite) is precisely aimed at tackling those practical issues and at supporting their structuration. The collaborative elaboration of the outputs of the method – strategic vision, action plan and ScoreCard – contributes to the progressive structuration of the network through the enrolment of actors [11] and the institutionalization of their relationships.

NSC Suite consists in three steps:

- First step: participants jointly build a shared strategic vision by defining the values, strategic and operational objectives of their network;
- Second step: participants operationalize their strategy on a plan of action;

1, TINIS PROJECT, www.tinis.org

- Third step: participants build a Scorecard, management tool for the network.

The authors wish to assess in which way the participation on this method contributes to the structuration of the network itself, i.e. how the networks agents enact the scripts in their actions and interactions.

Case study and interpretation: structuration of the YaJUG network

The case study we present here is related to the creation of a network in the field of information and communication technology (ICT). It covers a period of two years, during which the emerging network has participated in the construction of the NSC Suite.

The collection of data has consisted in studying the documents of the network (agenda and minutes of meetings, logo, and articles of association...), observing the interaction of the participants over the two years and interviewing them. The Network Analytical Observation Grid has been exploited as a framework to identify the main issues addressed by the founding members creating the network, what Bellemare and Briand [7] describe as the “what we do? How do we do it? And who does what and with whom?”, as well as the evolution of the answers to these questions. A first interpretation of the social practices is made through the “mutual knowledge” of founding members: an amalgam of conventions derived from shared meaning and specialized knowledge introduced by the activity of experts [1], telling us what actors already know and have to know to create and run their network. We identify three steps in the network’s creation.

The second and deeper phase of analysis of the mutual knowledge shared by the founding members of the network highlights - for each step - the scripts in which members enact the structure in their actions and interactions, situated in time and space, evidence for both social and systemic structuration processes, coming into the signification, legitimation and domination dimensions.

The story of YAJUG structuration

YAJUG (Yet another Java User group in Luxembourg) is an emerging associative network in the field of ICT and more particularly around the Java technology.

T₀: Shared interest in Java

End 2005, during an event in Luxembourg gathering professionals in ICT, the idea of creating a network around Java emerges from discussions among three persons, in a context of lack of speed for the Java technology. These persons know each other very well and share a previous experience of networking in LuxJUG, a former network around Java in Luxembourg. LuxJUG faded out, due to lack of involvement of its – numerous - members, leaving all the organization and management issues to the board. LuxJUG disappearance is considered as a failure.

The three persons consider their professional contacts may have the same interest in Java and decide to launch a new network around Java.

Spring 2006, they call up to their professional social network around this federative idea of creating a network to create a small core of eight professionals, who do not all know each other. They meet frequently to exchange on Java and start thinking of the form of their network. They start by finding a name: Yet Another Java User Group in Luxembourg (YaJUG) and a logo. From this moment on, they only refer to their network with this name and use the logo in their mails and documents.

Although they discuss the objectives and activities of their network no clear or formal strategy is defined. They also start designing the status of their network: legal form, roles and functions, rules for integrating members, etc. The role of animator is not formalized or officially attributed, but a dynamic and deeply involved member tacitly endorses it, legitimated by the tacit approval of other members.

At this stage, the YAJUG initiative benefits from logistics support for CRPHT.

T₁: Emerging common vision

The second phase of YAJUG's creation starts when the TINIS research team proposes the founding group a methodological support to the creation of a strategy and plan of action, in three steps. This proposition meets the group concerns on networks management and they unanimously agree.

The first participative session consists in building a clear and shared strategy. Through brainstorming to favor the confrontation of their individual visions, the participants first express the strategic objectives of the network ("we want": the ideal mid-term situation of the network, its mission) and specific operational objectives ("we have to": shorter term and more concrete objectives). The participants first thought they had a common vision of the network's strategy. Along the brainstorming sessions, though, negotiations arise as they confront their particular expectations. From controversies among participants, progressively endorsing their role of founding members emerges a common explicit vision. The TINIS team animator, external to the group of founding members, translates each participant expectations and animated the search for consensus.

It is to be noticed that the initial method included a brainstorming on the values of the network ("we are"), how the network's members want to be perceived by their environment. The research team, assuming the network was not mature enough to express common values, had decided not to brainstorm the participants on the values. Proving the research team wrong, the participants came up with three clear and shared values, often quoted by participants along the sessions: YAJUG Young, fun and fan of Java. The concrete output is the strategy of the YaJUG network.

In parallel, the members go on designing their status: the non-profit organization status is chosen and three official roles are formalized. The board will be elected each year, to favor members' involvement.

T₂: Collective project

In a second step of the NSC, the participants elaborate a concrete plan of action to implement their strategy. The participative session starts with a common validation of the strategy, after discussion. On basis of this strategy, the TINIS research team brainstorms them on how they should implement this strategy. The identified activities are then planned in details (schedule, animator or responsible for the activity, required resources: financial, material or partnerships).

The participants are supposed to take on the responsibility for the activities. Negotiation focus on the concrete implementation of the strategy, and participants discuss what it will take to achieve the objectives they have set, which involvement it will require.

The association is registered. Roles are attributed. The President, which role mainly consists of external representation of the network for instance, is recruited externally on criteria relying on the external integration of the network in the Luxemburgish context.

T₃: Institutionalization

In 2006, the founding members, now board members, organize a launching event gathering about 90 persons. They use their strategy and plan of action to attract members by communicating on what the members will get from joining in. They also upload it on their website. Press articles broadcast this event, using the strategy and plan of action to describe the network.

Meanwhile, the board meets on a regular basis, establishing routines of functioning: agenda, minutes ...). It also develops a website, on which the strategy and legal status are available.

A new event takes place on February 2007, officially opening the membership with an annual membership fee). The strategy and plan of action are no longer to be discussed. They are stabilized in the documents and in the way actors (members and external agents) refer to them.

As new members join in, the collective project is widened and consolidated.

End 2006, the TINIS research team proposes YaJUG to go a step further by building a dashboard that would measure the achievement of the strategy. As the research team has designed a dashboard under the form of a ScoreCard, including four dimensions of performance. The board unanimously agrees on new participative sessions to design a Scorecard. The research team redesigns their strategy by splitting the operational objectives on the four dimensions of performance: benefits for the members, members, external environment & organization. The result is a strategic map highlighting the interdependency between the objectives.

The participative sessions starts by a collective validation of the strategic map. Then participants identify key indicators and build them in details. As the ScoreCard is to measure the level of achievement of the objectives, it is built on basis of the strategic map.

At first, participants are to propose spontaneously indicators they think relevant for each objective by writing them down on post-it. Then they stick the post-it on a paperboard, with four zones corresponding o the four dimensions of performance. Most participants propose the same indicators; this consensus proves they have a common vision of their strategy.

Then, they are asked to build the indicators in detail by defining: the data required to calculate the indicators, the sources of data, the formula for calculation, the performance thresholds...- in order to ensure their exploitability and relevance.

Controversies arise on two main aspects:

- data composing the indicator: these data reflect the meaning of the indicator. For instance: one objective of the membership dimension consisted in having a “diversified” membership”, but trying to define how they were going to measure this diversity, the participants realize they did not have a common understanding of diversity (sector, position, experience ...).

- Performance thresholds: setting performance thresholds required to qualify or quantify what participants expect to achieve and raises their awareness on the involvement it will take to achieve them. Some objectives of the strategy are considered too ambitious for a first year of activity. For instance: “participating in some international IT events”, is transformed in informing the members on some international IT events.

At the end of the session, they are asked to appoint one of them to be responsible for the ScoreCard. The research team will build the Scorecard in back office on basis of the indicators.

Finally, the new strategic map, including the modifications brought during the Scorecard session, and the Scorecard are delivered to the board during one of their meetings. During the delivery the members of board envisage how the ScoreCard could support the network’s communication, during the yearly general Assembly for instance , as well as the networks’ management during the board meeting. The person in charge of the ScoreCard asks for new development in order to be able to manage the membership directly through the Scorecard (subscription, fee payment, newsletter subscription...)

Analysis of the progressive structuration of YaJUG

The two main issues addressed by the network members concern the network’s object and governance.

T₀: Shared interest in Java

At t₀, the founding members know they want to create a network around Java, their collective action is but the meeting of strong individual interests for Java. Their shared understanding (*signification*) of the initiative is limited to the topic: Java.

The name they have chosen for their network has the same pattern than international networks around Java (BeJUG...) and – more important – than the former Java User Group in Luxembourg (LuxJUG). Adopting this naming norm, and, from this moment on, always using it when referring to their initiative, gives *legitimacy* to this emerging network.

T₁, Emerging common vision

Accepting to collaborate with CRP Henri Tudor to elaborate their strategy and plan of action, the founding members mobilize external resources (*facilities*).

A common vision emerges from the explicit multilateral negotiations around the objectives (strategic and operational). The formalization of the strategy leads to a more conscious and shared vision of the project (*interpretative schemes*). The group of founding members share values, pillars of the network identity, *making sense* of their collective action. Their mutual knowledge integrates the knowledge introduced by the

expert of the NSC Suite team, as their vocabulary integrates some strategic management concepts, when they refer to their strategic vision.

Relationships among participants are reinforced by the expression and confrontations of their expectations and their more frequent meetings, creating a *routine* of functioning. Moreover, some of the founding members get more involved in the collective action (organization of meetings ...), de facto endorsing some responsibility in the project, legitimating their action.

The common elaboration of the articles of association, covers the three analytical dimensions of structuration through the common elaboration of rules of functioning (*signification*) – setting up internal norms (*legitimation*), the fees for joining in – based on the estimation of the resources required for the functioning of the network (domination) and the roles within the board (*legitimation*).

T₂: Collective project

Validating the strategy requires that the founding members have interiorized its contents. Identifying the activities to implement this strategy makes it concrete for the founding members (signification), who – in the process, realize what it will take to achieve it and which resources they will have to mobilize (power). Rules and coordination mechanisms are progressively defined through the definition of the action plan.

Collective action turns into a collective project.

Doing so, founding members identify the need for cooperation and take conscience (reflexivity) of their interdependence, they enroll themselves as organizers by endorsing responsibilities in the action plan, legitimating their action and strengthening their power in the network to be.

As founding members register their association and formalize its rules of functioning in the articles of association, the functioning gets more and more codified: routines of the board (regular meetings, agenda, and minutes), roles become official (rights and duties, responsibilities for activities). The registration of the network as an association implies complying with the law (norm).

T₃ : Institutionalization

Collective action becomes an official collective project.

The Strategy gains in formalization: by the construction of indicators in which participants explicit the expected results of the network, create a common understanding of performance and improve their (internal and external) communication capacity (signification). The scorecard provides the network with tools for assessing the coherence of its activities with needs and expectations of the identified stakeholder: number of subscriptions, assessment of satisfaction). Raising the network's level of reactivity, it also includes the integration of the concept of regulation (all three dimensions of structure) of the collective action in the mutual knowledge of organizers.

The network gains in legitimacy as a launching event is organized. The large audience for this event (about 90 persons) is considered a positive signal legitimating the collective project and the action of the organizers. From organizers, the founding members now endorse the role of regulators of the collective action.

Meanwhile, links are reinforced among organizers, who get to know each other better (*communication eased by common interpretative schemes*) during their confrontations

among objectives, and indicators. The regulation of internal activities (sanction dimension) is linked here to the mutual adjustments and relies on the relationships.

5 CONCLUSION

April 2009, the YaJUG network counts 62 members and organizes regular activities, with an average audience of 40 persons. The strategy has been interiorized by all members and is broadcasted on the website, to new members or during events. The plan of action has supported the organization of workshops, maintaining a regular level of activities and avoiding the slump in activities usually happening after the coalescing phase [12] of the launching event, sustaining the synergy and involvement of members. The Scorecard is exploited on a regular basis and indicators are communicated during meetings of the board for management issues and to the membership during the general assembly to report on the performance of the network and to the added value it has generated to its members.

The Network Analytical Observation Guide (NAOG) is a tool that supports the observer wishing to analyze the structuration of networks, a framework to classify the data collected on a network on a longitudinal analysis. As structuration is an iterative and non linear process, it is difficult though to isolate the impact of a specific factor (the participation in the NSC Suite, in our case study) from the other. The main advantage of NAOG is that it offers two levels of analysis. The first interpretation, resulting in the Network Case Analysis - a chronological and analytical story of the network – is accessible to practitioners. It highlights the key issues of the networks and the key steps of its life. While the second and deeper level of analysis relying implies an in-depth knowledge of the structuration dimensions and can be used at a research level.

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