Change and sensemaking: organizational identities evolution and causal maps. A case study of M&A in banking industry.

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Abstract

The aim of this paper is to explain how the social process of sensemaking can be supported adopting causal maps. Even if the opportunity and the possibility to manage organizational identity during the post-acquisition integration has been argued by previous papers, the evolution of organizational identity remains a social process that takes place during the interaction among people. In fact, an acquisition creates conditions in which differences among identities are emphasized. This social process is based on sensemaking, that can be defined as the capability to link daily activities with large patterns. The effectiveness of such a process within an organization depends on the presence of "common points" across cognitive maps of knowledge that each employee develops. After an acquisition these "common points" decrease because of a higher ambiguity. A managerial response that is based on clear communication and coherent managers' behaviour can reduce this ambiguity and improve sensemaking effectiveness.

Based on a case study of a M&A in the European banking industry, we argue that after an M&A, a managerial response that clarifies organizational identity perception, enhancing weaker relationships, improves the effectiveness of sensemaking process reducing the ambiguity in multiple identities. People from the acquired bank were requested to elaborate a casual map of organizational identity before and after the acquisition. Then common points on maps were measured and a "trend of ambiguity" has been calculated. This paper illustrate how it is possible to describe the initiatives that the acquiring bank used during integration process by using cognitive map and network measurements; similarly, the effects on the level of effectiveness of sensemaking have been calculated. We also described how the acquired bank could measure and monitor the level of comprehension of corporate strategy. In doing that, the bank can clarify strategic issues related to organizational identity that shows a weak level of comprehension. In addition, this paper has three main outcomes. First, we explain why the evolution of organizational identity is a social process based on sensemaking and how appropriate managerial responses must be monitored and supported at social level in order to be effective. Second, it clarifies how cognitive maps can be a managerial tool to achieve that result. Cognitive maps allow representing the expected organizational identity in a form closer to the mental representation that people build about the new reality. Third, it shows that sensemaking process can be measured in terms of effectiveness using network measurements. These results can be interesting for both academic and practitioners. More in details, managers dealing with acquisition could adopt casual maps in order to facilitate sensemaking process and measuring effectiveness of their integration strategy.

Track: *Management - Organizational identity formation and change*

1. Theoretical background

The concept of sensemaking has been analyzed as a process of continuous social negotiation (Weick, 1995). According to Weick, sensemaking is "the act of constructing interpretations of ambiguous environmental stimuli" (Weick, 1995). People need to reduce ambiguity and they socially look for a new equilibrium that is in continuous progress. Justification (a symbolic linkage among single interacts and underlying pattern), Commitment, Interpretation and Validation are phases of this process that has as output a collective structure based on a *cognitive map.* Cognitive maps were defined by Tolman (1948) and they are representations of our own knowledge that we edit from our organizational experience. They consist of "the concepts and the relations a participant uses to understand organizational situations" (Weick, 2001). A specific form of cognitive map is represented by the causality maps. Causal maps link concepts with cause-effect relations. Tolman (1948) contrasted cognitive maps with strip maps that are sequences of information where each choice has an appropriate response. Differently, a cognitive map allows flexible behavior (Tolman, 1948).

Use of cognitive maps for describing identities

Many scholars have studied the analysis of cause maps. In analyzing the extant literature four groups of methodologies can be recalled:

- people who have limited their investigations to maps without loops (Simon, 1957), estimating the parameters of the system of equations representing a loopless cause map and solving the associated problems of estimation (Tukey, 1954; Blalock, 1969);
- people who is interested in tracing the antecedents or the positive and negative consequents to some event or policy (Axelrod, 1976);
- people who have looked at the ranking of the variables in a loopless cause map (Harary, Norman and Cartwright, 1965; Warfield, 1973);
- people who have studied the problems of stability and instability introduced by the presence of positive and negative loops (Maruyama, 1963; Blalock, 1969, 1971; Brown, Roberts, and Spencer, 1972; Roberts, 1973).

Cognitive maps can become a collective cause map in three different ways: *assemblage* (Hall, 1984), *composite* (Eden et Al., 1981) and *average* (Bougon and Weick, 1977). Hall (1984) describes the case of five separate cause maps for five department of Saturday Evening Post. Maps were assembled among them because specific goals in one department became policy variables in others departments. So, a way to build collective structure can be "identifies common elements in diverse cause maps …" (Weick, 2001). A composite causal map derives from a teamwork in which people, starting from their own maps, work together to share a collective map (Eden et al., 1979). So, at the end, all people had the same map. The third form is the average map. It is presented by Bougon and Weick (1977), analyzing the case of Utrecht Jazz Orchestra. They asked to each of 19 members to assign causality relationships (zero, +1

or -1) and then generated a map based on the average (the algebraic mean) of answers. This map was different from each individual map but represent the most acceptable solution.

Bougon, Weick and Binhorst (1977) described in an empirical study about the Uthrect Jazz Orchestra (UJO). Authors identified 17 variables that all UJO musicians agreed could be referred to their experience. Then they focused on the 14 variables that were homogeneous, and excluded others. "Each UJO participant was asked to specify (1) which variables influenced which other variables, (2) whether each influence relationship he had identified was positive or negative, (3) which relationships he was certain existed, and (4) which of the 17 variables he felt he could influence personally." The participant filled the cells of a table during 19 structured interviews. For every pair of variables members were asked, "Do you find that [variable Y] is of influence on [variable Z]?". They answered yes or no and, for yes-relationships, indicated the "nature of the relationship". A negative sign was related to a decrease in the related variable (inverse relationship) and vice-versa. Authors used a methodology that considers loops and they described it in the following way: "*we developed exploits the fact mentioned earlier that the upper triangle of a standard input-output matrix corresponds to a graph without loops flowing in one direction, and that the lower triangle corresponds to another graph without loops flowing in the opposite direction. Thus, the flow of causality in the graph corresponding to the full matrix reconciles these two antagonisms. Either one flow dominates the other, and there will be a net flow of causality in its direction, or the two flows cancel each other, and there will be no net flow of causality. In the latter case all the variables have a like relation to each other; they are all equally cause and effect; they offer no basis for distinguishing one from the other; they therefore offer no criterion by which we can order or unfold the cause map.*" (Weick and Binhorst, 1977). Based on the upper and lower triangle flows each variable can be assigned a number, a criterion that was called "generalized indegree or generalized outdegree". The "indegree" is the number of paths leading to the variable from other variables; the "outdegree" the number of paths leading from it to other variables. Indegree and outdegree allow authors to construct a cause graph. The generalized indegree ranking criterion help to build an "average UJO cause map" as the algebraic mean of the signed links reported by the 12 participants. Then they plotted generalized outdegree rank against generalized indegree rank and noted that did not exist a linear association between indegrees and outdegrees (R^2 is .03). These observations suggest that there may be an important asymmetry between variables as originators and the same variables as terminators of activity and that effects are more important than causes for sensemaking (Mead, 1934: 76). That suggestion implies that: " *...in the construction of their world the participants' perceptions are biased toward caused variables rather than toward causing variables. Put another way, participants may pay attention to variables that are heavily controlled by other variables on the assumption that they too can control these variables since they too are causal agents.*". The methodology used in that case allows to draw an average map and to measure the degree of similarity among maps of a group of people. This measure can be used as a proxy of sensemaking effectiveness.

Use of cognitive maps in strategy development and communication.

One of the goals of this research, presented in the following sections, consists in measuring the similarity between people perception of the bank and the target identity included in change strategy. Therefore, can be useful a short review of studies about the use of maps in strategy development and communication. Cognitive maps have been well employed in the strategic management domain over many years (Ackerman and Eden 2005, Bryson et al 2004, Eden & Ackerman 1998). The article by Eden & Ackerman (1998) suggests what the various analyses described might imply for an understanding and evaluation of cognitive complexity. Eden argued that the development of strategy in organizations will be more effective if it is seen as predominantly a social rather than analytical process (Eden, 1992). In the late eighties a methodology called SODA (Strategic Options Development and Analysis) that use cognitive maps has been developed. The use of cognitive maps in formulation of IS strategy has been described by de Salas, Marshall and Young (2007). Authors describe the process: "*Specifically, a set of interviews is carried out with the senior management team. These interviews are focused on the business environment of the organization, the strategic goals and business strategy. From this process, the management team is facilitated to identify the type of information systems required to enable and support the business strategy. Cognitive maps are prepared for each of the interviews, and then validated with each of the managers concerned. These individual cognitive maps are then merged by the researcher and are used in a facilitated group session with the senior management team to negotiate a shared understanding and shared agreement on the strategic goals and the supporting information systems. Cognitive mapping as a support tool for IS strategy is issues and problem focused*" (de Salas, Marshall and Young, 2007).

2. Using causal maps to measure the effectiveness of sensemaking process during organizational identity evolution

The aim of this paper is to explain how the social process of sensemaking can be supported adopting causal maps as a methodology. Causal maps can be used to represent general patterns that help sensemaking and influence the behavior of people and their decisions. The organizational identity can be considered as one of this patterns and it provide a guideline for decisions within an organization. Therefore, according to Weick (anno) approach, the effectiveness of sensemaking is linked to the degree of similarity among cognitive maps that represents the strategy elaborated by management and the average map resulting from an aggregation of individual maps. An acquisition causes ambiguity among people and improves plurality of identities. Therefore can be interesting address the following question:

> How causal maps can support an identity management measuring the effectiveness of sensemaking process?

According to Weick (anno), sensemaking is a continuous social process that allows to members to reduce environmental ambiguity. This approach consider sensemaking as a process without a single solution but as a process that bring people to share common point on their individual cognitive maps. Therefore, the effectiveness of sensemaking can be measured comparing cognitive maps and elaborating a degree of similarity. An acquisition is a source of ambiguity for organizational identities. Even if sensemaking is a social process that can't be managed, it is possible to create conditions for an easier identification of common points on

causal maps. The aim to reduce difference among cognitive maps of people (grouped in an "average map") and the strategy cognitive map can be realized supporting interaction among people. On these bases it is possible to formulate the following proposition:

Using causal maps managers can identify ambiguous areas and plan specific interventions in order to improve the effectiveness of sensemaking process reducing the ambiguity in multiple identities.

This methodology can be explained using a case study in banking industry. Therefore, maps can be used in order to:

- measure and describe the level of effectiveness of sensemaking;
- measure and describe the level of comprehension of corporate strategy.

3. Methodology

The idiosyncratic nature of organizational identity requires the choice of a case study methodology in order to answer to our research question. The methodology is articulated in three phases: data collection (interviews to people), cognitive maps drawing, and measurement of network index. Each phase has been duplicated in order to underline differences between what happened before and after the acquisition.

Data collection (interviews to people and secondary data)

The number of interviewed people has not a statistical meaning because the aim of this section is to test the use of cognitive maps as representation of sensemaking. We collected 32 interviews from people that have different roles and responsibilities within the bank. Each person has been interviewed about the identity of acquired bank before the acquisition and about the new identity after the acquisition. The strategy map has been built from the analysis of secondary data from press, internal documents or bank web site.

Cognitive maps drawing

In order to draw maps, we extracted concepts from the narratives to point the nodes of network. Then, if these concepts were described as linked among them by cause-effect relationships, we drew an arrow to represent them. We used a software (C-MAP) that allows to map cognitive map and to elaborate differences between a couple of maps. It allows also building map in file sharing modality. This could be a good tool for using cognitive maps in order to facilitate sensemaking process.

Measurement of network index

Each cognitive map is made of concepts and relationships among them. In order to measure how the maps are different we follow the criteria used by Weick in the paper about the Utrecht Orchestra.

We followed these steps:

- from each map we elaborated a table nxn where concepts are in the rows and in the columns;
- each relationship between two concepts produce a value 1 on the box matching the row of the first concept and the column of the other or 0 (zero) if no relationship was mentioned;
- for each concept we elaborated the in-degree index (how many concepts were indicated as cause of it) and the out-degree index (how many concepts were indicated as effect of it);
- for each couple of maps we elaborated the differences as addition of differences between each in-degree and out-degree;
- drawing the networks of interviewed people (a network before acquisition and a network after acquisition) the value of differences gives the degree of closeness between maps;
- networks' density give a measure of how maps are similar and this measure is used as a proxy of sensemaking effectiveness;
- drawing of "average map" of people after the acquisition;
- drawing of "strategy map";
- measurement of similarity degree between the "average map" of people and strategy map.

4. Research context

The case study selection criteria have been based on the intensity of change generated by the acquisition. The selected acquisition involved an old, national and State-owned company that became part of an aggressive, multinational private company. Therefore, the impact on organizational identity was very strong and the sensemaking process among people was very complex.

The acquiring bank is a European leader in banking and financial services worldwide and one of the five strongest banks in the world according to Standard & Poor's. The group is present in over 85 countries with 155,000 employees, including 123,000 in Europe. Holds key positions in three major areas of activity: Corporate and Investment Banking, Asset Management & Services and Retail Banking. The acquisition of italina bank represented a decisive step in the path of international development for which Italy is a second home market with new and significant growth prospects. The acquired bank is a leading Italian banking group and the most famous brand in Italy. It has approximately 900 stores in Italy, offers a wide range of products and services from more traditional to more innovative to meet the diverse needs of its customers (individuals and families, businesses and public administration). From the eighties, its story becomes dense difficulties with acceleration in recent years before the acquisition. Successful integration is now visible both in retail market (with the renewal and expansion of the range products) and in corporate front (starting from birth to five Trade Center in some of the main Italian cities and the opening of the Italian desk in France and some countries of the Mediterranean basin to support Italian firms in their internationalization process).

5. Findings

The proposition that we investigated stated that using causal maps managers can identify ambiguous areas and plan specific interventions in order to improve the effectiveness of sensemaking process reducing the ambiguity in multiple identities. In the following pages we explain as it is possible to measure the areas where sensemaking is less effective and we provide an example of possible interventions.

In addition, results of data analysis cannot be representative of a large organization as the bank involved in this M&A, because of the small number of interviewed people. Nevertheless, there is a "convergence" among people's perceptions. It makes possible an interpretation of the effects of this acquisition on organizational identity. Evidence from this case demonstrates that the managerial response to ambiguity generated after acquisition was a success, even if, in a so large organization, differences between commercial people and staff employees are possible. The sensemaking effectiveness shows an improvement (from 93,5% to 93,8%) and, at the same time, people comprehension and interiorization of strategy is high (91,2%). In the following paragraphs, we describe and analyze data in order to provide an interpretation of these results.

Before the acquisition

The maps built from the interviews consist of relationships among 10 nodes that are concepts used by people to describe the organizational identity of the bank before the acquisition (Appendix 1). These nodes are the following:

- A bank owned by the State
- Marketing weakness
- No external benchmark / Captive market
- Bureaucratic
- Low motivation / low pressure
- Bureaucratic approach to IS
- Union strangeness
- Large but not focused training
- A static, old organization
- A Corporate bank / large competences

Each people used different words and gave not exactly the same meaning. Nevertheless, it is possible to clarify the general meaning that these concepts.

A bank owned by the State

The acquired bank was owned by the State and therefore was influenced by politics. People made differences between the period before privatization and after it. After privatization, people perceived ambiguity and confusion.

Marketing weakness

The acquired bank was focused on present customer more than on prospects. Therefore attention to marketing and communication were low.

No external benchmark / Captive market

A bank owned by the State had large benefit in order to achieve important corporate customer (for instance movie industry). Therefore, managers were proud of sales and pained low attention to comparate their results with other banks.

Bureaucratic

Bureaucracy was a consequence of a statal environment where procedures were more important than objectives.

Low motivation / low pressure

This point is not so clear. Low pressure was a consequence of captive market. Anyway, some people link low pressure with low motivation; others link it with a favorable condition for working.

Bureaucratic approach to IS

IS were designed for accounting more than for supporting business.

Union strength

Unions had an important role in HR management negotiations.

Large but not focused training

Attention was paid to training but in a not focused way. These courses had high-level teachers but used bureaucratic criteria for enrolling people.

A static, old organization

These conditions consolidated a static situation that someone called "old".

A Corporate bank / large competences

The acquired bank was organized as a complete bank with all corporate services well structured (sometimes overstaffed).

Tables of indegree and outdegree index

Concepts expressed by people with different words but with the same meaning have been grouped in wider words. Each relationship between two concepts produce a value 1 on the box matching the row of the first concept and the column of the other or 0 (zero) if no relationship was mentioned. For each concept, we elaborated the in-degree index (how many concepts

were indicated as cause of it) and the out-degree index (how many concepts were indicated as effect of it) (Appendix 2).

The next step is the elaboration of the differences that come from the addition of differences between each in-degree and out-degree for each concept. The value of this difference is in a range between a maximum of 180 (difference between a map with no relationships and a map with all relationships flagged in 9 rows and 9 columns times 10 concepts) and 0.

Table 1 Differences among maps before acquisition

DIFFERENCES	MEMBER1	MEMBER2	MEMBER3	MEMBER4	MEMBER5	MEMBER6	MEMBER7	MEMBER8	MEMBER9	MEMBER10	MEMBER11	MEMBER12	MEMBER13	MEMBER14	MEMBER15
MEMBER1															
MEMBER2	14														
MEMBER3	18	14													
MEMBER4	14	16	16												
MEMBER5	14	12	10	18											
MEMBER6	14	10	8	16	2										
MEMBER7	12	12	10	16	6	4									
MEMBER8	2	16	20	16	16	16	14								
MEMBER9	16	4	16	18	12	10	12	18							
MEMBER10	18	16	4	16	10	8	10	20	14						
MEMBER11	14	18	18	2	18	16	16	16	18	16					
MEMBER12	16	14	12	20	2	4	8	18	10	10	20				
MEMBER13	14	12	10	16	4	2	4	16	10	10	16	4			
MEMBER14	14	14	12	16	8	6	2	16	12	8	16	8	6		
MEMBER15	16	12	10	16	4	2	6	18	10	6	18	4	4	4	
MEMBER16	12	12	12	16	8	6	2	12	12	12	16	10	6	4	8

All People are linked with others by a relationship. The intensity of these relationships is calculated as percent of deference taken from the table above on the maximum value (180).

Network or global-level density is defined as the proportion of ties in a network relative to the total number possible (sparse versus dense networks). It is possible to estimate the density of this network as a proxy of effectiveness of sensemaking (where the maximum of effectiveness should give a density of 100% because all people have the same map). In this network I founded a high density (93,5%).

Table 2 Density of network before acquisition

	MEMBER1	MEMBER2	MEMBER3	MEMBER4	MEMBER5	MEMBER6	MEMBER7	MEMBER8	MEMBER9	MEMBER10	MEMBER11	MEMBER12	MEMBER13	MEMBER14	MEMBER15
MEMBER1															
MEMBER2	92%														
MEMBER3	90%	92%													
MEMBER4	92%	91%	91%												
MEMBER5	92%	93%	94%	90%											
MEMBER6	92%	94%	96%	91%	99%										
MEMBER7	93%	93%	94%	91%	97%	98%									
MEMBER8	99%	91%	89%	91%	91%	91%	92%								
MEMBER9	91%	98%	91%	90%	93%	94%	93%	90%							
MEMBER10	90%	91%	98%	91%	94%	96%	94%	89%	92%						
MEMBER11	92%	90%	90%	99%	90%	91%	91%	91%	90%	91%					
MEMBER12	91%	92%	93%	89%	99%	98%	96%	90%	94%	94%	89%				
MEMBER13	92%	93%	94%	91%	98%	99%	98%	91%	94%	94%	91%	98%			
MEMBER14	92%	92%	93%	91%	96%	97%	99%	91%	93%	96%	91%	96%	97%		
MEMBER15	91%	93%	94%	91%	98%	99%	97%	90%	94%	97%	90%	98%	98%	98%	
MEMBER16	93%	93%	93%	91%	96%	97%	99%	93%	93%	93%	91%	94%	97%	98%	96%

After the acquisition

The same methodology used for mapping the identity pre-acquisition has been used for the maps referred to the post acquisition situation built from the interviews. They consist of 10 nodes that are concepts used by people to describe the organizational identity of the bank before the acquisition. These nodes are the following:

- Change towards a "commercial" bank
- Focused training
- Downsizing staff department
- More pressure on commercial objectives
- Attention to internal communication
- Promotion investments
- IT investments
- Less power to Unions
- Empowerment of managers
- No more captive markets

Each node has a meaning that can be explained in the following way.

No more captive markets

The acquired bank lost its advantage that came from the statal ownership and it is now into competitive market.

Change towards a "commercial" bank

A compensation of that lost market must come from a stronger commercial capacity.

Focused training

Training has been reduced as volume, but focused on key people. Attention has been paid to communication skills at any level.

Downsizing staff department

BNP has central services in its headquarter in France. So, many central services have been closed or reduced.

More pressure on commercial objectives

In order to transform The acquired bank in a bank with market orientation, people received more pressure.

Attention to internal communication

Communication is a central point in BNP strategy. Managers "put their faces" and they are transparent in communication.

Promotion investments

Commercial effort has been supported with high and structured investments in promotion.

IT investments

IT investment improved in order to support the standardization of operation and the effectiveness of commercial agents.

Less power to Unions

The role of Unions are now more limited.

Empowerment of managers

"Now managers decide" said an interviewed employee. The real ambiguity was in the period between the first privatization and this acquisition.

The individual maps after acquisition are in appendix 3 and the tables of indegree and outdegree index in appendix 4. Also for the maps after the acquisition it is possibel elaborate the differences that come from the addition of differences between each in-degree and out-degree for each concept. The value of this difference is in a range between a maximum of 180 (difference between a map with no relationships and a map with all relationships flagged in 9 rows and 9 columns times 10 concepts) and 0.

Table 3 Differences among maps afetr acquisition

DIFFERENCES

	MEMBER1	MEMBER2	MEMBER3	MEMBER4	MEMBER5	MEMBER6	MEMBER7	MEMBER8	MEMBER9	MEMBER10	MEMBER11	MEMBER12	MEMBER13	MEMBER14	MEMBER15
MEMBER1															
MEMBER2	10														
MEMBER3	16	14													
MEMBER4	12	8	16												
MEMBER5	12	6	14	6											
MEMBER6	12	10	10	8	6										
MEMBER7	4	8	14	12	10	12									
MEMBER8	4	12	14	14	14	14	6								
MEMBER9	12	2	12	10	8	12	10	10							
MEMBER10	18	16	2	18	16	12	16	16	14						
MEMBER11	14	10	18	2	8	10	14	16	12	18					
MEMBER12	16	10	16	10	4	8	14	18	12	16	10				
MEMBER13	14	12	8	10	8	2	14	12	10	10	12	10			
MEMBER14	8	12	12	16	14	14	4	6	10	12	16	14	12		
MEMBER15	10	8	16	12	8	12	6	12	10	16	12	8	14	6	
MEMBER16	10	8	16	12	10	12	6	12	10	16	12	10	14	6	2

As in the previous paragraph, all People are linked with others by a relationship. The intensity of these relationships is calculated as percent of difference taken from the table above on the maximum value (180). Network or global-level density is defined as the proportion of ties in a network relative to the total number possible (sparse versus dense networks). It is possible to estimate the density of this network as a proxy of effectiveness of sensemaking (where the maximum of effectiveness should give a density of 100% because all people have the same map). In this network I founded a high density (93,8%).

Table 4 Density of network after the acquisition

SIMILARITY INDEX: 93,8%

	MEMBER1	MEMBER2	MEMBER3	MEMBER4	MEMBER5	MEMBER6	MEMBER7	MEMBER8	MEMBER9	MEMBER10	MEMBER11	MEMBER12	MEMBER13	MEMBER14	MEMBER15
MEMBER1															
MEMBER2	94%														
MEMBER3	91%	92%													
MEMBER4	93%	96%	91%												
MEMBER5	93%	97%	92%	97%											
MEMBER6	93%	94%	94%	96%	97%										
MEMBER7	98%	96%	92%	93%	94%	93%									
MEMBER8	98%	93%	92%	92%	92%	92%	97%								
MEMBER9	93%	99%	93%	94%	96%	93%	94%	94%							
MEMBER10	90%	91%	99%	90%	91%	93%	91%	91%	92%						
MEMBER11	92%	94%	90%	99%	96%	94%	92%	91%	93%	90%					
MEMBER12	91%	94%	91%	94%	98%	96%	92%	90%	93%	91%	94%				
MEMBER13	92%	93%	96%	94%	96%	99%	92%	93%	94%	94%	93%	94%			
MEMBER14	96%	93%	93%	91%	92%	92%	98%	97%	94%	93%	91%	92%	93%		
MEMBER15	94%	96%	91%	93%	96%	93%	97%	93%	94%	91%	93%	96%	92%	97%	
MEMBER16	94%	96%	91%	93%	94%	93%	97%	93%	94%	91%	93%	94%	92%	97%	99%

Network density as a measure of effectiveness of sensemaking process

Drawing the networks of interviewed people (a network before acquisition and a network after acquisition), the value of differences indicates the degree of similarity between each couple of maps. Density of networks among people before and after the acquisition, defined as the average of similarity degrees among couples of maps, can be used as a proxy of sensemaking

effectiveness. This measure of sensemaking effectiveness shows an improvement (from 93,5% to 93,8%). The interpretation of this result shows a complete reduction of ambiguity generated by the acquisition.

Drawing the map of interviewed people perception after acquisition and a map that represent bank strategy, the degree of closeness between maps provide a proxy of how strategy has been correctly understood by people.

Strategy map

The strategy map has been drawn from the analysis of secondary data (internal house organ, interviews, presentations, …).

Table 5 Strategy map

Map of corporate strategy	Change towards a "commercial" bank	Focused training	Downsizing staff department	More pressure on commercial objectives	Attention to internal communication	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	A glocal bank	Value of BNL history	indegree
Change towards a "commercial" bank	0	0	0	1	0	0	0	0	0	1	1	0	3,00
Focused training	0	0	0	0	0	0	0	0	0	0	0	0	-
Downsizing staff department	0	0	0	0	0	0	0	0	0	0	0	0	-
More pressure on commercial objectives	0	1	0	0	1	0	0	0	0	0	0	0	2,00
Attention to internal communication	1	0	0	0	0	0	0	0	0	0	0	1	2,00
Promotion investments	1	0	0	0	0	0	0	0	0	0	0	1	2,00
IT investments	0	0	0	0	0	0	0	0	0	0	0	0	-
Less power to Unions	0	0	0	0	0	0	0	0	0	0	0	0	-
Empowerement of managers	0	0	0	0	0	0	0	0	0	0	0	0	-
No more captive markets	0	0	0	0	0	0	0	0	0	0	0	0	-
A glocal bank	0	0	0	0	0	0	0	0	0	0	0	0	-
Value of BNL history	0	0	0	0	0	0	0	0	0	0	0	0	-
Outdegree	2,00	1,00	-	1,00	1,00	-	-	-	-	1,00	1,00	2,00	

An "average map" of people perception

Individual cognitive maps can become a collective cause map in three different ways: assemblage (Hall, 1984), composite (Eden et Al, 1981) and average (Bougon and Weick, 1977). Hall describes the case of five separate cause maps for five department of Saturday Evening Post. Maps were assembled among them because specific goals in one department

became policy variables in others departments. So, a way to build collective structure can be "identifies common elements in diverse cause maps …" (Weick, 2001). A composite causal map derives from teamwork in which people, starting from their own maps, work together to share a collective map (Eden et al., 1979). So, at the end, all people had the same map. The third form is the average map. As described above, it is presented by Bougon and Weick (1977), analyzing the case of Utrecht Jazz Orchestra. They asked to each of 19 members to assign causality relationships (zero, +1 or -1) and then generated a map based on the average (the algebraic mean) of answers. This map was different from each individual map but represent the most acceptable solution. In this case study "average map" is built using the average of individual values. So, a value close to 1 means that many people indicated that relationship and a value close to 0 that few people indicated that relationship.

Table 6 People perception of strategy

Average of people perception	Change towards a "commercial" bank	Focused training	Downsizing staff department	More pressure on commercial objectives	Attention to internal communication	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	A glocal bank	Value of BNL history	indegree
Change towards a "commercial" bank		-	-	-	-	-	-	-	-	0,88	-	-	0,88
Focused training	0,50		-	-	0,13	-	-	-	-	-	-	-	0,63
Downsizing staff department	0,81	-		-	-	-	-	-	-	-	-	-	0,81
More pressure on commercial objectives	0,63	0,25	0,25		0,38	0,31	-	0,13	0,25	0,25	-	-	2,44
Attention to internal communication	0,44	0,06	-	-		0,06	-	-	-	-	-	-	0,56
Promotion investments	0,50	-	-	-	-		-	-	-	-	-	-	0,50
IT investments	0,50	-	-	-	-	-		-	-	-	-	-	0,50
Less power to Unions	-	-	-	0,38	-	-	-		-	-	-	-	0,38
Empowerement of managers	0,38	-	-	-	-	-	-	-		-	-	-	0,38
No more captive markets	-	-	-	-	-	-	-	-	-		-	-	-
A glocal bank	-	-	-	-	-	-	-	-	-	-	-	-	-
Value of BNL history	-	-	-	-	-	-	-	-	-	-	-	-	-
Outdegree	3,75	0,31	0,25	0,38	0,50	0,38	-	0,13	0,25	1,13	-	-	

The similarity index is calculated as sum of differences (absolute values) of indegree and outdegree for each row and column. The resulting value is 91,2% (as percent of maximum value of differences) and gives the sense of a successful managerial strategy that took people towards the expected map.

Table 7 Similarity index

Average of people perception	Differences indegree	Differences Outdegree
Change towards a "commercial" bank	2,13	1,75
Focused training	0,63	0,69
Downsizing staff department	0,81	0,25
More pressure on commercial objectives	0,44	0,63
Attention to internal communication	1,44	0,50
Promotion investments	1,50	0,38
IT investments	0,50	-
Less power to Unions	0,38	0,13
Empowerement of managers	0,38	0,25
No more captive markets	-	0,13
A glocal bank	-	1,00
Value of BNL history	-	2,00
Outdegree		
	15,88	
	91,2%	

How bank achieved this good result and which relationships should be better clarified? In order to explain how managerial response adopted by the bank management re-generated common points among individual maps in terms of concepts and relationships, it is possible to compare the intensity of stronger relationships on strategy map and on average map.

Table 8 Relationships on strategy map and their intensities in average map

Cause	Effects	Int.	Explanations
No more captive markets	Change towards a "commercial" bank	0,86	The end of advantages coming from the public "status" is clear to people.
Glocal Company		0,00	No one indicated the international dimension of the group.
Change towards a	Attention to internal communication	0,43	A clear consequence of new strategy.
	Promotion investments	0,43	A clear consequence of new strategy.

"commercial" bank	More pressure on commercial objectives	0,57	People have a clear idea about the necessity to improve pressure.
Value to The acquired bank history	Attention to internal communication	0,00	No one indicated this strategy issue.
	Promotion investments	0,00	
Focused Training		0,29	Training is a confused point for people.
Attention to internal communication	More pressure on commercial objectives	0,43	People feel managers closer than before acquisition.
Change towards a "commercial" bank		0,57	People have a clear idea about the necessity to improve pressure.

Table 9 Relationships (not in strategy map) on average map and its intensity

Cause	Effects	Int.	Explanations
Change towards a "commercial" bank	Downsizing staff department	0,86	People in corporate staff underlined more the centralization of those services in France than the effort on commercial agencies.

6. Conclusions

Our answer to research question of this paper tried to explain how causal maps can support an identity management measuring the effectiveness of sensemaking process. We decsribed this methodology using an acquisition as a source of ambiguity for organizational identities. We demonstrted that, even if sensemaking is a social process that cannot be managed, it is possible to create conditions for an easier identification of common points on causal maps.

Our study showed how using causal maps managers can identify ambiguous areas measuring density of concepts network. In addition, they can plan specific interventions in order to

improve the effectiveness of sensemaking process reducing the ambiguity in multiple identities. For instance, in this case study, the use of cognitive maps can become an effective managerial tool because:

- at the beginning of integration process it can map people perception;
- then it allows to focus managerial effort on concepts or relationship with lower perception;
- during the whole process, it allows to monitoring the effectiveness of sensemaking process.

This analysis shows that strong points in this sensemaking process are:

- the necessity to replace the lost advantage of captive markets;
- the consequences of that as necessity to invest on commercial people and structures

Weak points consist in two strategic issues not clear to people (internationality of the group and the will to underline the history of The acquired bank) and a misunderstanding (people in central services suffers the downsizing of their services).

The main limitation of this study is the low number of people involved in data collection. Therefore, we cannot consider the strategy map and the perception of people statistically significant. Nevertheless, our aim was focused on the methodology description and it could be used in future research.

Scholars could also investigate on the possibility to use causal maps in order to define organizational identity in a dynamic way.

7. References

Axelrod, Robert, 1976, Structure of Decision. Princeton: Princeton University Press.

Blalock, Hubert M., 1969, Theory Construction: From Verbal to Mathematical Formulations. Englewood Cliffs, NJ: Prentice-Hall.

Bougon M.G., Weick K.E. and Binkhorst D., 1977, Cognition in organization: an analysis of Utrecht Jazz Orchestra, Administrative Science Qaurterly, 22, 606-639.

Brown, T. A., F. S. Roberts, and J. Spencer, 1972, Pulse Processes on Signed Digraphs: A Tool for Analyzing Energy Demand. Santa Monica.

Bryson, J. M, Ackermann, F., Eden, C. and Finn, C. B. 2004, Visible Thinking: Unlocking Causal Mapping for Practical Business Results. John Wiley and Sons, Chichester.

Eden C., Jones S. Sims D., 1979, Thinking in organizations, London, Macmillan.

Eden C., Jones S., Sims D., Smithin T., 1981, Intersubjectivity of issues and issues of intersubjectivity, Journal of Management Studies, 18, 37-47.

Eden, 1992, Strategy development as a social process, Journal of Management studies, Volume 29, Issue 6, pages 799–812, November 1992.

Eden, C., 1989, Using Cognitive Mapping for Strategic Options Development and Analysis (SODA). In Rosenhead, J. (Editor) Rational Analysis for a Problematic World: Problem Structuring Methods for Complexity, Uncertainty and Conflict. John Wiley and Sons, Chichester.

Hall R.I. 1984, The natural logic of management policy making: its implication for survival of an organization, Management Science, 30, 905-927.

Harary, F., R. Z. Norman, and D. Cartwright, 1965, Structural Models: An Introduction to the Theory of Directed Graphs. New York: Wiley.

Maruyama, Magorah, 1963, "The second cybernetics: deviation-amplifying mutual cause processes." American Scientist, 51: 164-179.

Mead, George H.,1934, Mind, Self, and Society , Chicago: Chicago University Press.

Roberts, F. S.,1973, "Building and analyzing an energy demand signed digraph." Environment and Planning, 5: 199-221.

Simon, Herbert A.,1957, Models of Man. New York: Wiley.

Tolman E.C., 1948, "Cognitive maps in rats and men". Psychological Review 55 (4): 189–208.

Tukey, John W., 1954, "Causation, regression, and path analysis." In Oscar Kempthorne et al. (eds.), Statistics and Mathematics in Biology: 35-66. Anrves: Iowa State College Press.

Warfield, J. N., 1973, "On arranging elements of a hierarchy in graphic form." IEEE Transactions on Systems, Man and Cybernetics, SMC-3, No. 2: 121-132.

Weick, K. E., 1995, Sensemaking in Organizations. Thousand Oaks, CA: Sage.

Weick, K. E., 2001, Making sense of the organization, Blackwell.

Appendix

Individual cognitive maps before acquisition

CLIENTI GARANTITI ← causa ← BANCA PUBBLICA

SINDACATO FORTE

CLIENTI GARANTITI — causa — AUTOREFERENZIALITA'

BUROCRAZIA

SISTEMI INFORNATIVI BUROCRATICI

AUTOREFERENZIALITA' — causa — PERCEZIONE DI ORGANIZZAZIONE STATICA

BUROCRAZIA — causa — PERCEZIONE DI ORGANIZZAZIONE STATICA

PERCEZIONE DI ORGANIZZAZIONE STATICA — causa — PERSONALE TRASCURATO

SINDACATO FORTE — causa — PREMI "A PIOGGIA"

PERSONALE TRASCURATO — fa sentire — FORMAZIONE COME ADEMPIMENTO

PERSONALE TRASCURATO — procura — SCARSA MOTIVAZIONE

PREMI "A PIOGGIA" — determinano — SCARSA MOTIVAZIONE

SISTEMI INFORNATIVI BUROCRATICI — causa — DEBOLEZZA COMMERCIALE

PERCEZIONE DI ORGANIZZAZIONE STATICA — causa — DEBOLEZZA COMMERCIALE

DEBOLEZZA COMMERCIALE — causa — RIDUZIONE QUOTA DI MERCATO

BUDGET RIVISTI PER ASSEGNARE I PREMI

MANAGER SENZA IDEE — accettano — BUDGET RIVISTI PER ASSEGNARE I PREMI

AUTOREFERENZIALITA' — consente — BUDGET RIVISTI PER ASSEGNARE I PREMI

BUROCRAZIA

NEPOTISMO

AUTOREFERENZIALITA' — causa — PERCEZIONE DI ORGANIZZAZIONE VECCHIA

PERCEZIONE DI ORGANIZZAZIONE VECCHIA — causa — PERSONALE TRASCURATO

PREMI "A PIOGGIA"

NEPOTISMO — causa — SCARSA MOTIVAZIONE

BUROCRAZIA — causa — PERCEZIONE DI ORGANIZZAZIONE VECCHIA

PERSONALE TRASCURATO — fa sentire — SCARSA FORMAZIONE

PERSONALE TRASCURATO — procura — SCARSA MOTIVAZIONE

PREMI "A PIOGGIA" — determinano — SCARSA MOTIVAZIONE

PERCEZIONE DI ORGANIZZAZIONE VECCHIA — causa — DEBOLEZZA COMMERCIALE

DEBOLEZZA COMMERCIALE — causa — RIDUZIONE QUOTA DI MERCATO

Map 3 before

- SCARSA COMUNICAZIONE PUBBLICITARIA —causa→ DEBOLEZZA COMMERCIALE
- POCO BUSINESS ESTERO —causa→ DEBOLEZZA COMMERCIALE
- SERVIZI MATURI —causa→ DEBOLEZZA COMMERCIALE
- RELAZIONE CONSOLIDATA CON IL CLIENTE —causa→ SERVIZI MATURI
- ECCELENTI POLI DI SVILUPPO COMPETENZE —causa→ RELAZIONE CONSOLIDATA CON IL CLIENTE
- ECCELENTI POLI DI SVILUPPO COMPETENZE —causa→ SERVIZI CONSULENZIALI DI ALTO LIVELLO
- BASSI INVESTIMENTI TECNOLOGICI —causa→ POCHI STRUMENTI INFORMATICI
- POCHI STRUMENTI INFORMATICI —causa→ SERVIZI CONSULENZIALI DI ALTO LIVELLO
- ALTI COSTI FORMAZIONE —causa→ ECCELENTI POLI DI SVILUPPO COMPETENZE
- ASSENZA DI TENSIONE —causa→ ALTI COSTI FORMAZIONE

Map 4 before

- SCARSA COMUNICAZIONE PUBBLICITARIA —causa→ DEBOLEZZA COMMERCIALE
- POCHI STRUMENTI INFORMATICI —causa→ DEBOLEZZA COMMERCIALE
- BUROCRAZIA —causa→ DEBOLEZZA COMMERCIALE
- BANCA PUBBLICA —causa→ BUROCRAZIA
- BANCA PUBBLICA —causa→ POCA MERITOCRAZIA
- RUOLO SINDACATI —causa→ POCA MERITOCRAZIA
- POCA MERITOCRAZIA —causa→ ASSENZA DI TENSIONE
- ASSENZA DI TENSIONE —causa→ ALTI COSTI FORMAZIONE
- BUROCRAZIA —causa→ RELAZIONE CONSOLIDATA CON IL CLIENTE
- ECCELENTI POLI DI SVILUPPO COMPETENZE —causa→ RELAZIONE CONSOLIDATA CON IL CLIENTE
- SOLIDE COMPETENZE —causa→ ECCELENTI POLI DI SVILUPPO COMPETENZE
- ALTI COSTI FORMAZIONE —causa→ SOLIDE COMPETENZE

Map 5 before

DEBOLEZZA COMMERCIALE

SISTEMI INFORMATICI DI CONSUNTIVAZIONE —causa→ RELAZIONE CAPTIVE CON GRANDI CLIENTI —causa→ DEBOLEZZA COMMERCIALE

BANCA DELLO STATO —causa→ RELAZIONE CAPTIVE CON GRANDI CLIENTI

BANCA CORPORATE ED ECCELENTI POLI DI SVILUPPO COMPETENZE —causa→ RELAZIONE CAPTIVE CON GRANDI CLIENTI

FORMAZIONE NON FOCALIZZATA ←causa— BANCA CORPORATE ED ECCELENTI POLI DI SVILUPPO COMPETENZE

BASSA PRESSIONE ←causa— FORMAZIONE NON FOCALIZZATA

Map 6 before

DEBOLEZZA COMMERCIALE

BANCA DELLO STATO —causa→ MERCATO CAPTIVE CON GRANDI CLIENTI

MERCATO CAPTIVE CON GRANDI CLIENTI —causa→ DEBOLEZZA COMMERCIALE

BANCA CORPORATE ED ECCELENTI POLI DI SVILUPPO COMPETENZE —causa→ MERCATO CAPTIVE CON GRANDI CLIENTI

FORMAZIONE NON FOCALIZZATA ←causa— BANCA CORPORATE ED ECCELENTI POLI DI SVILUPPO COMPETENZE

BASSA PRESSIONE ←causa— FORMAZIONE NON FOCALIZZATA

DEBOLEZZA
COMMERCIALE

causa

causa

BASSA PRESSIONE

causa

MERCATO
CAPTIVE CON GRANDI
CLIENTI

causa

BANCA CORPORATE ED
ECCELENTI
POLI DI SVILUPPO
COMPETENZE

causa

BANCA DELLO
STATO CON
100 ANNI DI
STORIA

Map 7 before

Appendix 2

Indegree and outdegree before acquisition

INDIVIDUAL MAPS Before acquisition

SOGG1	A bank owned by the State	Marketing weakness	No external benchmark / Captive market	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State											0
Marketing weakness											0
No external benchmark / Captive market	1										1
Bureacratic						1					1
Low motivation / low pressure								1	1		2
Bureacratic approach to IS			1								1
Union strenghness											0
Large but not focused training											0
A static, old organization			1	1							2
A Corporate bank / large competences											0
OUTGEDREE	1	1	1	1	0	1	1	1	0	0	

INDIVIDUAL MAPS Before acquisition

SOGG2	A bank owned by the State	Marketing weakness	No external benchmark / Captive	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State											0
Marketing weakness											0
No external benchmark / Captive market											0
Bureacratic											0
Low motivation / low pressure								1	1		2
Bureacratic approach to IS											0
Union strenghness											0
Large but not focused training										1	1
A static, old organization			1	1	1						3
A Corporate bank / large competences			1								1
OUTGEDREE	0	0	2	1	1	0	0	1	1	1	

INDIVIDUAL MAPS Before acquisition

SOGG3	A bank owned by the State	Marketing weakness	No external benchmark / Captive	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State											0
Marketing weakness			1								1
No external benchmark / Captive market						1		1			2
Bureacratic											0
Low motivation / low pressure											0
Bureacratic approach to IS											0
Union strenghness											0
Large but not focused training								1		1	2
A static, old organization											0
A Corporate bank / large competences			1								1
OUTGEDREE	0	0	2	0	0	1	0	2	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG4	A bank owned by the State	Marketing weakness	No external benchmark /	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State											0
Marketing weakness				1		1					2
No external benchmark / Captive market				1				1			2
Bureacratic									1		1
Low motivation / low pressure							1		1		2
Bureacratic approach to IS											0
Union strenghness											0
Large but not focused training					1						1
A static, old organization											0
A Corporate bank / large competences		1									1
OUTGEDREE	0	1	0	2	1	1	1	1	2	0	

INDIVIDUAL MAPS Before acquisition

SOGG5	A bank owned by the State	Marketing weakness	No external benchmark /	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large	INDEGREE
A bank owned by the State											0
Marketing weakness			1								1
No external benchmark / Captive market	1										1
Bureacratic											0
Low motivation / low pressure			1					1			2
Bureacratic approach to IS			1								1
Union strenghness											0
Large but not focused training										1	1
A static, old organization											0
A Corporate bank / large competences			1								1
OUTGEDREE	1	0	4	0	0	0	0	1	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG6	A bank owned by the State	Marketing weakness	No external benchmark /	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large	INDEGREE
A bank owned by the State											0
Marketing weakness			1								1
No external benchmark / Captive market	1										1
Bureacratic											0
Low motivation / low pressure			1					1			2
Bureacratic approach to IS											0
Union strenghness											0
Large but not focused training										1	1
A static, old organization											0
A Corporate bank / large competences			1								1
OUTGEDREE	1	0	3	0	0	0	0	1	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG7	A bank owned by the State	Marketing weakness	No external benchmark / Captive	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State											0
Marketing weakness			1								1
No external benchmark / Captive market										1	1
Bureacratic											0
Low motivation / low pressure		1	1								2
Bureacratic approach to IS											0
Union strenghness											0
Large but not focused training											0
A static, old organization											0
A Corporate bank / large competences	1										1
OUTGEDREE	1	1	2	0	0	0	0	0	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG8	A bank owned by the State	Marketing weakness	No external benchmark / Captive market	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State						1					1
Marketing weakness											0
No external benchmark / Captive market	1										1
Bureacratic						1					1
Low motivation / low pressure							1	1			2
Bureacratic approach to IS		1									1
Union strenghness											0
Large but not focused training											0
A static, old organization			1	1							2
A Corporate bank / large competences											0
OUTGEDREE	1	1	1	1	0	2	1	1	0	0	

INDIVIDUAL MAPS Before acquisition

SOGG9	A bank owned by the State	Marketing weakness	No external benchmark / Captive	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State											0
Marketing weakness	1										1
No external benchmark / Captive market											0
Bureacratic											0
Low motivation / low pressure	1							1	1		3
Bureacratic approach to IS											0
Union strenghness											0
Large but not focused training										1	1
A static, old organization			1	1	1						3
A Corporate bank / large competences			1								1
OUTGEDREE	2	0	2	1	1	0	0	1	1	1	

SOGG10

	A bank owned by the State	Marketing weakness	No external benchmark / Captive	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State											0
Marketing weakness	1		1								2
No external benchmark / Captive market						1		1			2
Bureacratic											0
Low motivation / low pressure	1										1
Bureacratic approach to IS											0
Union strenghness											0
Large but not focused training								1		1	2
A static, old organization											0
A Corporate bank / large competences			1								1
OUTGEDREE	2	0	2	0	0	1	0	2	0	1	

SOGG11

	A bank owned by the State	Marketing weakness	No external benchmark / Captive	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State											0
Marketing weakness	1			1		1					3
No external benchmark / Captive market				1				1			2
Bureacratic									1		1
Low motivation / low pressure							1		1		2
Bureacratic approach to IS											0
Union strenghness											0
Large but not focused training					1						1
A static, old organization											0
A Corporate bank / large competences		1									1
OUTGEDREE	1	1	0	2	1	1	1	1	2	0	

SOGG12

	A bank owned by the State	Marketing weakness	No external benchmark / Captive	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State											0
Marketing weakness			1								1
No external benchmark / Captive market	1										1
Bureacratic											0
Low motivation / low pressure	1		1					1			3
Bureacratic approach to IS			1								1
Union strenghness											0
Large but not focused training										1	1
A static, old organization											0
A Corporate bank / large competences			1								1
OUTGEDREE	2	0	4	0	0	0	0	1	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG13	A bank owned by the State	Marketing weakness	No external benchmark / Captive	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State											0
Marketing weakness			1								1
No external benchmark / Captive market	1										1
Bureacratic											0
Low motivation / low pressure		1	1					1			3
Bureacratic approach to IS											0
Union strenghness											0
Large but not focused training										1	1
A static, old organization											0
A Corporate bank / large competences			1								1
OUTGEDREE	1	1	3	0	0	0	0	1	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG14	A bank owned by the State	Marketing weakness	No external benchmark /	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State											0
Marketing weakness	1		1								2
No external benchmark / Captive market										1	1
Bureacratic											0
Low motivation / low pressure		1	1								2
Bureacratic approach to IS											0
Union strenghness											0
Large but not focused training											0
A static, old organization											0
A Corporate bank / large competences	1										1
OUTGEDREE	2	1	2	0	0	0	0	0	0	1	

INDIVIDUAL MAPS Before acquisition

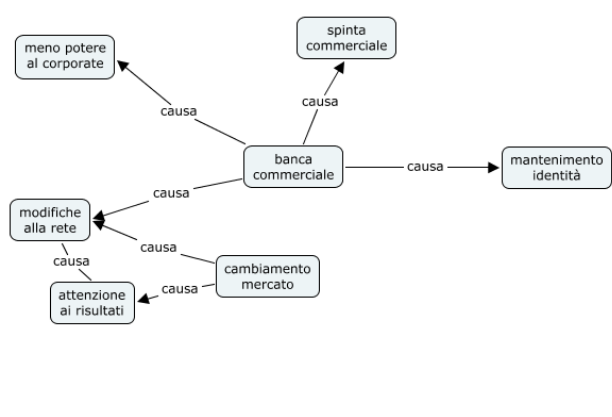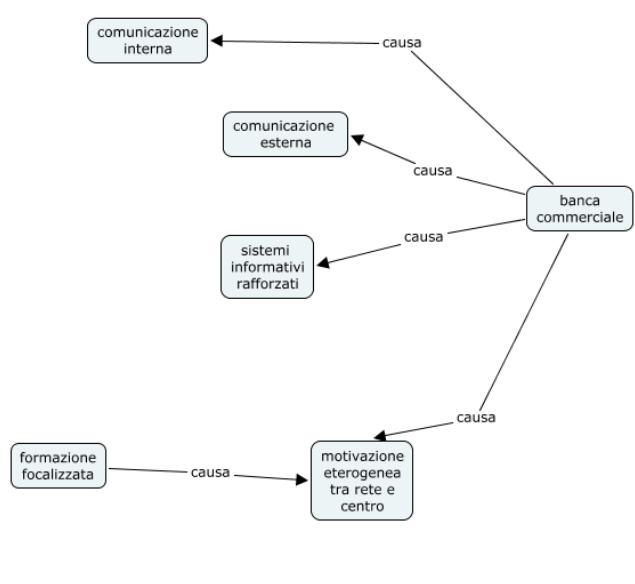| SOGG15	A bank owned by the State	Marketing weakness	No external benchmark / Captive	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State											0
Marketing weakness	1		1								2
No external benchmark / Captive market	1										1
Bureacratic											0
Low motivation / low pressure			1					1			2
Bureacratic approach to IS											0
Union strenghness											0
Large but not focused training										1	1
A static, old organization											0
A Corporate bank / large competences			1								1
OUTGEDREE	2	0	3	0	0	0	0	1	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG16	A bank owned by the State	Marketing weakness	No external benchmark / Captive	Bureacratic	Low motivation / low pressure	Bureacratic approach to IS	Union strenghness	Large but not focused training	A static, old organization	A Corporate bank / large competences	INDEGREE
A bank owned by the State				1							1
Marketing weakness			1								1
No external benchmark / Captive market										1	1
Bureacratic											0
Low motivation / low pressure		1	1								2
Bureacratic approach to IS											0
Union strenghness											0
Large but not focused training											0
A static, old organization											0
A Corporate bank / large competences	1										1
OUTGEDREE	1	1	2	1	0	0	0	0	0	1	

Appendix 3

Maps afetr acquisition

After Map 1

After Map 2

fine mercato garantito

banca commerciale

ridimensionamento attività centrali ←causa

causa→ chiara delega

causa→ decisionismo

spinta nuove agenzie

causa

causa→ attenzione comunicazione

causa

causa→ clima rete migliorato

causa

formazione focalizzata

causa

After Map 3

ricambio management

formazione focalizzata

maggiore pressione

fine mercato captive

causa→ trasformazione in banca commerciale

causa

causa

causa→ sindacato debole

causa

causa→ infprmazione rafforzata

comunicazione esterna

causa

causa

staff meno pesanti

After Map 4

After Map 5

After Map

attenta gestione cambiamento

comunicazione interna

attenzione al personale

formazione focalizzata

banca commerciale

nuovi ruoli nella rete

causa

After Map 7

Appendix 4

Tables of indegree and outdegree after the acquisition

INDIVIDUAL MAPS Before acquisition

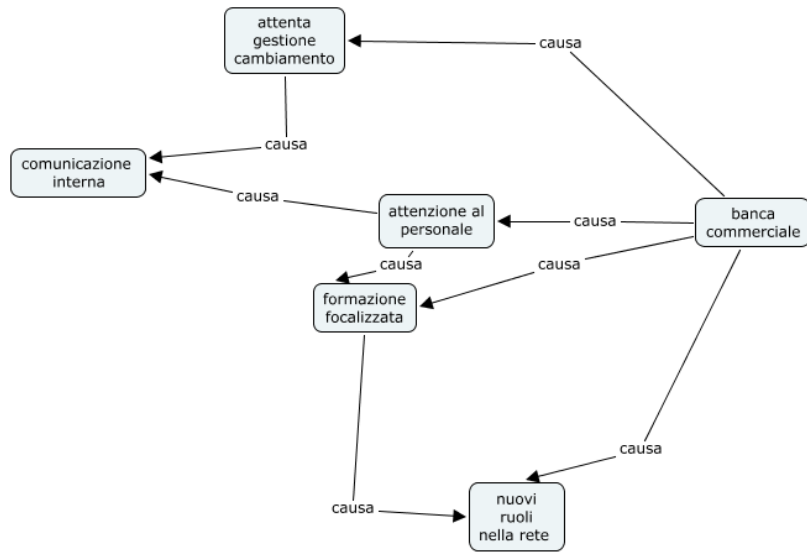| SOGG1 SV	Change towards a "commercial" bank	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal communication	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank										1	1
Focused training											0
Downsizing staff department	1										1
More pressure on commercial objectives			1								1
Attention to internal communication											0
Promotion investments											0
IT investments											0
Less power to Unions											0
Empowerement of managers											0
No more captive markets											0
OUTGEDREE	1	0	1	0	0	0	0	0	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG2 RR	Change towards a "commercial"	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank										1	1
Focused training	1										1
Downsizing staff department											0
More pressure on commercial objectives	1	1									2
Attention to internal communication											0
Promotion investments	1										1
IT investments	1										1
Less power to Unions											0
Empowerement of managers											0
No more captive markets											0
OUTGEDREE	4	1	0	0	0	0	0	0	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG3 GF	Change towards a "commercial"	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank											0
Focused training											0
Downsizing staff department	1										1
More pressure on commercial objectives	1				1			1	1		4
Attention to internal communication											0
Promotion investments											0
IT investments	1										1
Less power to Unions			1								1
Empowerement of managers	1										1
No more captive markets											0
OUTGEDREE	4	0	0	1	1	0	0	1	1	0	

INDIVIDUAL MAPS Before acquisition

SOGG4 SB	Change towards a "commercial"	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank										1	**1**
Focused training	1				1						**2**
Downsizing staff department	1										**1**
More pressure on commercial objectives	1										**1**
Attention to internal communication	1										**1**
Promotion investments	1										**1**
IT investments	1										**1**
Less power to Unions											**0**
Empowerement of managers											**0**
No more captive markets											**0**
OUTGEDREE	6	0	0	0	1	0	0	0	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG5 SS	Change towards a "commercial"	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank										1	**1**
Focused training	1										**1**
Downsizing staff department	1										**1**
More pressure on commercial objectives		1			1						**2**
Attention to internal communication	1										**1**
Promotion investments	1										**1**
IT investments											**0**
Less power to Unions											**0**
Empowerement of managers	1										**1**
No more captive markets											**0**
OUTGEDREE	5	1	0	0	1	0	0	0	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG6 GL	Change towards a "commercial"	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank										1	**1**
Focused training	1										**1**
Downsizing staff department	1										**1**
More pressure on commercial objectives			1		1				1		**3**
Attention to internal communication	1										**1**
Promotion investments											**0**
IT investments	1										**1**
Less power to Unions											**0**
Empowerement of managers	1										**1**
No more captive markets											**0**
OUTGEDREE	5	0	1	0	1	0	0	0	1	1	

INDIVIDUAL MAPS Before acquisition

SOGG7 FL	Change towards a "commercial"	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank										1	1
Focused training											0
Downsizing staff department	1										1
More pressure on commercial objectives	1									1	2
Attention to internal communication											0
Promotion investments											0
IT investments											0
Less power to Unions											0
Empowerement of managers											0
No more captive markets											0
OUTGEDREE	2	0	0	0	0	0	0	0	0	2	

INDIVIDUAL MAPS Before acquisition

SOGG8	Change towards a "commercial" bank	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal communication	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank	1									1	2
Focused training											0
Downsizing staff department	1										1
More pressure on commercial objectives			1								1
Attention to internal communication											0
Promotion investments											0
IT investments											0
Less power to Unions				1							1
Empowerement of managers											0
No more captive markets											0
OUTGEDREE	2	0	1	1	0	0	0	0	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG9	Change towards a "commercial" bank	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal communication	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank										1	1
Focused training	1										1
Downsizing staff department											0
More pressure on commercial objectives	1	1									2
Attention to internal communication											0
Promotion investments	1										1
IT investments	1										1
Less power to Unions				1							1
Empowerement of managers											0
No more captive markets											0
OUTGEDREE	4	1	0	1	0	0	0	0	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG10	Change towards a "commercial"	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank											**0**
Focused training											**0**
Downsizing staff department	1										**1**
More pressure on commercial objectives	1				1	1		1	1		**5**
Attention to internal communication											**0**
Promotion investments											**0**
IT investments	1										**1**
Less power to Unions				1							**1**
Empowerement of managers	1										**1**
No more captive markets											**0**
OUTGEDREE	4	0	0	1	1	1	0	1	1	0	

INDIVIDUAL MAPS Before acquisition

SOGG11	Change towards a "commercial" bank	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank										1	**1**
Focused training	1				1						**2**
Downsizing staff department	1										**1**
More pressure on commercial objectives	1										**1**
Attention to internal communication	1										**1**
Promotion investments	1					1					**2**
IT investments	1										**1**
Less power to Unions											**0**
Empowerement of managers											**0**
No more captive markets											**0**
OUTGEDREE	6	0	0	0	1	1	0	0	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG12	Change towards a "commercial" bank	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal communication	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank										1	**1**
Focused training	1										**1**
Downsizing staff department	1										**1**
More pressure on commercial objectives		1			1	1					**3**
Attention to internal communication	1					1					**2**
Promotion investments	1										**1**
IT investments											**0**
Less power to Unions											**0**
Empowerement of managers	1										**1**
No more captive markets											**0**
OUTGEDREE	5	1	0	0	1	2	0	0	0	1	

INDIVIDUAL MAPS Before acquisition

SOGG13	Change towards a "commercial"	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank										1	1
Focused training	1										1
Downsizing staff department	1										1
More pressure on commercial objectives			1		1				1		3
Attention to internal communication	1										1
Promotion investments											0
IT investments	1										1
Less power to Unions				1							1
Empowerement of managers	1										1
No more captive markets											0
OUTGEDREE	5	0	1	1	1	0	0	0	1	1	

INDIVIDUAL MAPS Before acquisition

SOGG14	Change towards a "commercial"	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank										1	1
Focused training											0
Downsizing staff department	1										1
More pressure on commercial objectives	1					1				1	3
Attention to internal communication											0
Promotion investments											0
IT investments											0
Less power to Unions				1							1
Empowerement of managers											0
No more captive markets											0
OUTGEDREE	2	0	0	1	0	1	0	0	0	2	

INDIVIDUAL MAPS Before acquisition

SOGG15	Change towards a "commercial"	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank										1	1
Focused training											0
Downsizing staff department	1										1
More pressure on commercial objectives	1					1				1	3
Attention to internal communication		1									1
Promotion investments	1										1
IT investments											0
Less power to Unions											0
Empowerement of managers											0
No more captive markets											0
OUTGEDREE	3	1	0	0	0	1	0	0	0	2	

INDIVIDUAL MAPS Before acquisition

SOGG16	Change towards a "commercial"	Focused training	Downsizing staff department	More pressure on commercial	Attention to internal	Promotion investments	IT investments	Less power to Unions	Empowerement of managers	No more captive markets	INDEGREE
Change towards a "commercial" bank										1	**1**
Focused training											**0**
Downsizing staff department											**0**
More pressure on commercial objectives	1					1				1	**3**
Attention to internal communication	1										**1**
Promotion investments	1										**1**
IT investments											**0**
Less power to Unions											**0**
Empowerement of managers											**0**
No more captive markets											**0**
OUTGEDREE	3	0	0	0	0	1	0	0	0	2	