

**DEVELOPING NETWORK PICTURES AS A RESEARCH TOOL:
CAPTURING THE OUTPUT OF INDIVIDUALS'
SENSE-MAKING IN ORGANISATIONAL NETWORKS**

submitted by

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for the degree of PhD of the University of Bath

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*To my parents, Domingos and Rosa,
for always being there for me*

*To my dearest friend Dinha (in memoriam),
for always being so supportive and proud of my doings, no matter what*

THESIS ABSTRACT

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For the past twenty years, drawing on the Industrial Network Approach, Industrial Marketing and Purchasing Group researchers have been trying to get a better understanding of organisational networks related issues. Researchers frequently highlight that whatever the researched phenomena, it is important to consider actors' subjective views of the world. The concept of Network Pictures as introduced in the IMP (Industrial Marketing and Purchasing) body of literature by Ford et al. (2002b), refers to those subjective views and despite its recognised importance no in-depth research had been conducted so far on the concept which has thus remained blurred. Ford et al. (2002b) brought in this concept to emphasise that the network is in fact a varying thing depending on what people see. The question is whether this can be translated into a research device, so that researchers may see in a structured and analytical way what an actor's picture is. This is what this research project is about.

The concept's theoretical foundations are uncovered by reviewing some principles from Sense-Making Theory. This review results most importantly in the identification of a close association between actors' views of the world and the outcome of those actors' sense making processes or frameworks. The relevance of actors' views to obtain a clearer understanding of organisational networks is highlighted when the relation that is believed to exist between those views and action in organisational networks is addressed.

With the aim of developing Network Pictures as research tool a two-stage method is put forward and carried out. The method consisted of operationalising the construct of Network Pictures and then testing it in two different network contexts to see if it was usable and useful for carrying out research in organisational networks. The results point to the usability and usefulness of the developed device: not only does it allow for capturing what is believed to be individuals' views of the world in a rich and comprehensive way, as it also shows diversity between individuals in different contexts. Also and interestingly, some of the identified 'practitioner theories' were found to be not coherent with some IMP theoretical cornerstones.

Keywords: *Network Pictures, Sense-Making, Networking, and Research Tool*

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GLOSSARY OF TERMS

AAR – Actors, Activities and Resources

CEO – Chief Executive Officer

IMP – Industrial Marketing and Purchasing

KAM – Key Account Manager

RM – Raw Materials

*“... the conversion of an object into a tool. Someone using a stick for the first time to feel his way in the dark, will at first feel its impact against his palm and fingers when the stick hits an object. But as he learns to use the stick effectively, a transformation of these jerks will take place into a feeling of the point of the stick touching an object; the user of the stick is no longer attending then **to** the meaningless jerks in his hand but attends **from** them to their meaning at the far end of the stick.”*

in Polanyi, M., 1969, p. 145

Chapter 1

1 Introduction

With the Industrial Network Approach (Hakansson and Johanson, 1992), research on industrial systems has been conducted drawing on the principle that companies are embedded in a complex network of interconnected relationships (Hakansson and Snehota, 1989, Hakansson and Johanson, 1992, Axelsson and Easton, 1992). The Industrial Network Approach takes Pfeffer and Salancik's (1978) Resource Dependence Theory (i.e. it is through these relationships that companies can get access to the resources that they need to develop their business activity), as well as concepts from the Social Exchange and Network Theory (Cook and Emerson, 1978). There is a complex world of interaction out there and IMP (Industrial Marketing and Purchasing) Group researchers have been developing new models and considering better ways of looking at this complexity whilst drawing on the Industrial Network Approach. This approach's main concern lies in understanding industrial systems as complex networks of organisational relationships and aims to prepare and nurture managers to integrate network thinking into their everyday practices.

Several authors have tried to identify the research traditions underpinning this approach (Johanson and Mattsson, 1994, Moller, 1994, Easton, 1995b, Easton et al., 2003). Authors agree that when compared with other contemporary marketing mainstream research, this approach presents several basic distinctive and innovative features, as a result of the particular characteristics of the Swedish industry scenery and school of thought, where it was initially developed (Johanson and Mattsson, 1994). The Swedish scenery allowed and nurtured the development of this distinctive, however scientifically reliable, stream of research. Moller (1994) claimed that because researchers apply this framework so as to understand systems of relationships from a positional or from a network perspective, the intellectual aims of the Industrial Network Approach are primarily descriptive. Moreover, because relationships cannot be understood without being integrated in their business contexts, contextuality and the time factor are essential elements for any research conducted on networks. Having the network of relationships as the prime unit of analysis, the Industrial Network Approach may assume either a relativist or a realistic ontology, and it may draw on either objective or subjective orientations (Moller, 1994). According to this author, the approach undertakes a more objective perspective when the nature of the issue under analysis is either economic or technological. On the other hand, the approach assumes a more subjective orientation when the phenomenon that is being addressed is essentially social. Organisational networks are thus believed to have a dual dimensionality which reflects a differentiated use of methodologies: it has a hard economic and technological dimension that

is associated with an objective perspective, and on the other hand it has a soft social-organisational dimension that is associated with a more subjective viewpoint. In summary, when comparing the Industrial Network Approach with other contemporary marketing research streams, the former is said to be less quantitative and more qualitative, less deductive and more inductive, less theory testing and more theory building, less prescriptive and more descriptive, less focused on marketing management and more holistic (Johanson and Mattsson, 1994). Philosophically speaking, the former has traditionally undertaken an inductive and an interpretative or a social constructionist approach.

The main focus of research conducted by IMP researchers thus far has been on the nature, role and dynamics of interactions, relationships and networks. One thing that has been highlighted in almost every study is that actors' perceptions play an important role in the understanding of any network related phenomena. The network is thus to be understood as something subjective and that is dependent on what actors see (Ford et al., 2002b, Hakansson and Snehota, 1995a). IMP researchers believe that, resulting from their interpretation or understanding of the world, managers understand the network in their own terms and that this is based on those subjective terms of how they define themselves and the others that they interact with (Anderson et al., 1994, Mattsson, 1987, Mattsson, 1985). It is therefore recognised amongst IMP researchers that organisational network actors have pictures of the world. Although this has been recognised, no in-depth research has so far been developed on this area.

The concept of Network Pictures was introduced in the IMP literature (Ford, 2002) to refer to organisational network actors' views of their surroundings. The concept emerged in a model that integrated two other dimensions, namely Networking and Network Outcomes, and the authors suggested that the three dimensions were closely interconnected. Actors' views of the world were thus put forward as associated with their actions or reactions in the network. The concept of Network Pictures that was put forward was not operationalised or tested. Recently, some researchers have tried to operationalise it (Henneberg et al., 2006) but the structure they suggested and the methodology through which this structure was derived were not considered sufficiently sound (Ramos et al., 2005).

The concept of actors' views of the world is strongly connected with Organisational Sense-Making Theory (Weick, 1969, Weick, 1979b), a particular area of management concerned with how people see and position themselves and others. Sense-making is about the process through which individuals try to find a logic for the encompassing working scenario (Weick, 1969) and it includes two aspects: the actual process of sense-making, through which

individuals construct the frameworks which helps them understand the world and then guides their actions, and the resulting frameworks. Actors' views of the world can be considered as those frameworks that result from actors' sense-making processes. This connection has been mentioned by some researchers (Henneberg et al., 2006, Henneberg et al., 2007, Mouzas et al., 2004, Ramos et al., 2005) and it can be considered as valuable, in the sense that it allows for further development of the theoretical cornerstones of the concept of actors' views of the world.

The **core aim** of this research project is to see if it is possible to develop a structure which allows researchers to grasp in a fairly complete and rich way how specific people make sense of the surrounding network, i.e. actors' views of the world. This could be achieved by identifying what and how people see the network in which they operate. Therefore, the main aim of this project is to develop a sense-making tool that can be used either by researchers or by managers, to help them understand or make sense of how organisational actors make sense or perceive their surroundings. A social constructionist approach thus underlies this research. The structure or research device that is to be developed in this project, named by this researcher as Network Pictures, can thus then be used by researchers to carry out further research on organisational networks, with researchers integrating into their investigations the actors' subjective perceptions of the network.

To achieve the core aim of this project, a two-stage method is set out that consists of operationalising the structure of Network Pictures, and then testing it. The first stage of the method can be considered to be the primary aim of the research project, and the second stage corresponds to the secondary aim. The primary aim is achieved by using the existing IMP and Organisational Sense-Making literature to carry out an initial development of theoretical dimensions that permit, parsimoniously, a grasp on actors' views of their surroundings to be achieved. This structure potentially requires further development, but it can be used to collect relevant primary data. Preliminary analysis of the collected data identifies an empirically driven and comprehensive structure for the concept of Network Pictures. The secondary aim is achieved by using the empirically derived structure of Network Pictures to analyse all collected data and, in this way, to see at what levels the individual tool of Network Pictures could be used and to see if there is any diversity or commonality between different individuals. In order to assess this phenomenon of diversity or commonality, data is collected from two diverse networks with distinct relational features, because they are expected to give interesting and diverse findings with regards to the way their members perceive the network in which they interact. The use of the empirically derived structure for analysis of collected data can also serve to see if there were any interesting findings that resulted from that

analysis and whether these would be worth looking at in organisational network studies. This second stage is therefore about demonstrating the validity of the suggested structure to encapsulate what individuals *see* in the surrounding network. A tool that is shown to be usable and useful for conducting research in a specific area can be said to be a valid research device.

Once the structure of the research tool of Network Pictures is developed and tested, it can be further developed by other researchers. Thus, it does not have to be the definitive and general structure for grasping actors' views of the world. The point of carrying out the research is more about the process through which a valid structure can be derived, than about the outcomes or findings *per se*. Nevertheless, these findings are also relevant since they indicate that the structure of Network Pictures is one that is worth using, pointing out the robustness of the developed tool.

One of the reasons why the concept of actors' views of the world is considered relevant, is because there is a shared belief among researchers that organisational network actors are driven or interact based on their subjective views of the world (Hakansson and Ford, 2002, Ford et al., 2002b). This interconnection between belief and action is paramount for understanding the relevance of actors' Network Pictures and thus, although this is not the core aim of the project, there is also the **aim** of furthering a discussion on this potential relation.

In previous research projects, Network Pictures were described as managers' sense-making devices (Henneberg et al., 2006, Mouzas et al., 2004, Oberg et al., 2006, Rohrmus and Henneberg, 2006). The focus relied mainly on the following issues: identifying the concept's dimensions (Henneberg et al., 2006), developing the concept, understanding the process through which actors' views of the world were developed (Rohrmus and Henneberg, 2006) and how they could change as situations evolved (Oberg et al., 2006). In these previous projects Network Pictures were considered mainly at the pictorial level and all studies included solely Network Pictures from one single individual or company.

Several differences can be pointed out between the concept of Network Pictures in this PhD project and that used in the mentioned previous research projects. To begin with, in this research project, Network Pictures are not defined as actors' sense-making devices but instead as a research tool to be primarily developed and used by researchers. It is recognised that actors try to make sense of the world and can be said to have a picture of the surrounding network. However, they do not need to nor possibly can articulate it in a complete way. This

is where the theoretical construct of Network Pictures developed by researchers comes in. It represents researchers' attempts to capture how specific actors perceive the world. Another considerable difference is that in this research project the concept's pictorial level is merely one of the aspects considered in order to operationalise it. This researcher assumes that it is possible to capture in a more comprehensive and truthful way actors' *views* of the world by using both pictorial and verbal data. Another difference worth pointing out is that in this project, the focus is not on the sense making processes through which actors' views of the world are generated, but instead on the outcome of those processes. Nevertheless, this researcher believes that the processes through which those views are generated may be useful in order to understand the differences that are believed to exist between actors' views of the world in diverse contexts. Finally, in this research project the analysis is carried out, not only at the individual and company levels, but also at the network level, something that has not been done to date.

In view of the aims of this research project, the thesis is structured into eleven chapters. In *Chapter 2* the relevant existing literature discussing the theoretical principles underlying this research project is reviewed. The purpose here is to develop the theoretical framework for the research project and to certify the reasons that led this researcher to pursue the aims that were set out for this study. The idea that organisational network actors hold subjective views of the world is identified in the IMP body of literature and further explored. Moreover, the theoretical cornerstones underlying the construct, and that are closely associated with principles from the Organisational Sense-Making Theory, are uncovered. The idea of developing Network Pictures as a research tool is introduced and the difference between this construct and the concept of actors' views of the world is clarified.

In *Chapter 3* the method for developing Network Pictures as a research tool is presented. The two-stage method consists of operationalising the construct of Network Pictures and then testing it by using it to interpret data at the individual, organisational and network levels of analysis. In this chapter there is some further literature reviewing, namely on the managerial and organisational cognitive field of research and with regards to the findings of several studies conducted in those fields on the existence and need for a shared cognitive map in an organisation. This literature review is carried out in this chapter and not in the previous one because it is associated with the potential findings from using the developed tool of Network Pictures to analyse data. Moreover, this corresponds to the second stage of the method used for developing the research tool of Network Pictures that is presented in this chapter.

The two-stage method involves carrying out empirical research and all choices underlying the empirical study are presented and justified in *Chapter 4*. It is highlighted how, as a result of the project's underlying social constructionist and inductive approach and also as a result of the research determinants, case-study research was considered the most appropriated methodology, and thus the one adopted in this thesis.

In *Chapter 5*, the result of the first stage of the method used for developing the construct of Network Pictures as a research tool is presented. The construct of Network Pictures is thus operationalised.

The following four chapters contain the results from using the operationalised structure of Network Pictures for analysing data at several levels, that is to say the results of using the tool to understand how and what respondents claim to see in the world around them. These four chapters thus correspond to the second stage of the method used for developing Network Pictures as a research tool. *Chapter 6, 7 and 8* contain the results of the analysis that was carried out at the individual, company and network level, correspondingly; *Chapter 9* comprises the results of the cross-case analysis where Network Pictures from individuals from within two diverse networks are compared. Once the operationalised construct of Network Pictures has been tested at these different levels, it is possible to say something about its usefulness and usability and thus about the tool's validity and robustness.

In *Chapter 10*, some guiding propositions for further research are put forward with a set of propositions on the relation between actors' Network Pictures and actors' Networking activities.

Finally in the last chapter, *Chapter 11*, several overall conclusions on the conducted research are drawn and there is a final section on the contributions, limitations of the thesis and on potential future avenues for research.

This PhD research project is of interest both on academic and managerial levels. On an academic level, the project aims at providing researchers with a research instrument that is believed to be able to help in the understanding of what and how actors see their surroundings. IMP Group researchers have been mentioning for decades how important it is to consider actors' perceptions of the world when developing research on organisational networks, but until now there was no way of translating actors' views into something that could be understood and used by researchers in their investigation projects. It is also believed

that as a result of using this research device to understand actors' views of the network, researchers may grasp what 'practitioner theories' are about, and these may or not be coincident with 'academic theories' Mattsson (2005b, 2005a). This can be singled out as one of the main impetuses for this research project: to grasp what practitioners actually believe in or perceive (Kjellberg and Helgesson, 2005), because a number of researchers have expressed the belief that actors' behaviours are guided by these perceptions. Mattsson (2005b, 2005a) has emphasised how these are the theories that actually guide practitioners' 'market practices', whilst they are 'managing in markets', thus affecting the '(real) market'. This implies that researchers should now address how actors' perceptions of the world are associated with their Networking activities and with the Network Outcomes, so as to better understand these network related phenomena. What is also relevant is that the tool allows for identifying potential discrepancies and researchers may choose to develop further theory considering, not only what they believe to be more appropriate bearing in mind their observations of what is taking place in the network, but also what practitioners see or the terms they think in. It is important to highlight the fact that although this research project draws mainly on the IMP Group literature, the project's contribution on an academic level goes beyond the marketing area, because it provides knowledge for the areas of Cognitive Science, Organisational Behaviour and Strategic Management. In the area of Cognitive Science and Organisational Behaviour, the development of the research tool of Network Pictures allows for the addressing of issues of commonality and diversity on an inter-organisational level, adding this level of analysis to the traditional intra-organisational level associated with these bodies of literature. In previous research developed in these areas, researchers have tried to assess the possibility of there being a single, unique, way of perceiving the world at the intra-organisational level, addressing the potential causes and consequences for a more significant similarity or diversity amongst actors' perceptions of the world. Within the present research project such analysis is carried out on an inter-organisational level and thus makes an important contribution in the area of Strategic Management. Through this research researchers will be provided with a tool which will enable them to address the issue of whether organisations benefit (or not) from the existence of more or less similar ways of perceiving things on a network level. Moreover through the application of Network Pictures researchers will be able to assess the strategic consequences of actors sharing similar or dissimilar views of their surroundings and thus assist them in guiding top-management teams towards optimal alignment for decision-making.

On a managerial level, the developed construct can be used in the future by managers as a tool to help them to understand their own as well as other actors' perceptions of the network. The tool thus gives them the possibility to make decisions and take actions on a better

informed basis. Amongst other things, managers may ask how they should view situations in the most convenient way for their business practices, under what circumstances does that way of perceiving things occur and what measures need to be taken in order to mobilise other actors in that direction.

This research project's contribution to the literature takes place both on the theoretical and methodological levels. On the one hand it provides a theoretical contribution given that a structure for the concept of Network Pictures is developed in a way that can be tested by other researchers. Moreover, it now becomes possible to capture what 'practitioner theories' are about. In other words, now there is a tool available for researchers to understand what practitioners believe in and how/why they may act upon these beliefs. The project also provides researchers with a device which allows for predicting and thus gaining a better understanding of network dynamics. On the other hand, it also represents a methodological contribution, because methodologies for developing the construct of Network Pictures at the individual, organisational and network levels are proposed and demonstrated. This research project will therefore contribute to the development of theory and methodology in this field, with the development of a research tool that may positively contribute to researchers' investigation practices.

Chapter 2

2 Literature Review

2.1 Introduction

In view of this PhD project's main aim, the existing relevant literature was thoroughly reviewed. The aims of conducting such a review were on finding what had so far been researched on actors' subjective views of the world, exploring and developing Network Pictures' theoretical cornerstones and putting forward the idea of Network Pictures as a research tool.

In Section 2.2 the theoretical foundations of the concept of actors' views of the world are developed and in Section 2.3 the concept of Network Pictures as a research tool is put forward. In the latter section, the main differences between the concepts of actors' views of the world and Network Pictures as a research tool are presented. Section 2.4 contains some conclusions.

2.2 Actors' Views of the World

The IMP Group was created in the early seventies by Nordic European scholars and its members have been working together ever since trying to develop a better understanding of *Business-to-Business marketing* related phenomena. Researchers from this group have claimed organisational networks are not independently existing phenomenon, but simply the result of actors' subjective views of the world (Ford et al., 2002b, Hakansson and Snehota, 1995a). Organisational network actors are thus believed to hold a picture of the surrounding network. The belief that the network varies according to what and how actors see what (and who) is around them and the relevance of actors' subjective views, have been mentioned throughout the last decades by several authors associated with the IMP tradition (Anderson et al., 1994, Mattsson, 1987). However, only recently has this been conceptually materialised in a body of literature (Ford et al., 2002b). The relevance of actors' subjective views can also be traced to other bodies of literature, as for instance in those of strategic management research on competitive groups (Porac et al., 1989, Stubbart, 1989, Osborne et al., 2001, Hodgkinson, 1997, Hodgkinson and Johnson, 1994, Hodgkinson et al., 2004) or organisational behaviour (Sproull, 1981, Langfield-Smith, 1992, Walsh and Fahey, 1986, Walsh et al., 1988, Weick and Bougon, 1986, Bougon et al., 1977, Meindl et al., 1994), where concepts such as

Cognitive Groups, Cognitive Maps, Causal Maps or Belief Structures were applied¹. These concepts are associated with the managerial and organisational cognitive field of research.

The importance of the actors' subjective views was initially raised by Mattson (1985, 1987). The author pointed out how managers understand their surroundings and perceive the network on the basis of previous experiences, memories and beliefs about the future, and how those ways of understanding things potentially influence theirs' and other individuals' interactions. Therefore IMP researchers have taken the belief that each actor holds an idiosyncratic and evolving view of the surrounding network, interacting "on the basis of their perceptions" (Hakansson and Snehota, 1995a, p. 34). Managers' cognitive structures are thus considered relevant for an understanding of managerial activity and subsequent interactions between companies (Mattsson, 1985).

The remainder of this section investigates the relevant features of actors' views of the world that derive from the existing IMP and Sense-Making theories. This has the aim of establishing the theoretical framework from which this research project will be developed.

2.2.1 The conceptualisation in the IMP body of literature of the relevance of actors' views of the world

The concept of Network Pictures was suggested by Ford et al. (2002b) and defined as "the views of the network held by the participant" (p. 5), "the basis for their perceptions of what is happening around them and of their actions and reactions in the network" (p. 4). Thus, these authors used the expression Network Pictures to talk about those views of the world held by the organisational network actors and that were mentioned above. The authors did not operationalise the concept of Network Pictures, that is to say the dimensions that would allow for *measuring* the concept through specific observations were not defined.

Network Pictures was one of the three dimensions of the Model of Managing in Networks put forward by these authors [see Figure 1]; Networking and Network Outcomes were the other two. This model aimed at representing how actors work within relationships and authors such as Gadde et al. (2003) considered that it could be used to access companies' *strategizing* activities (Weick, 1979b, Weick, 1995, Smircich and Stubbart, 1985, Spender, 1998,

¹Some of the findings regarding previous research on these concepts are introduced and discussed in the following chapter (see Section 3.4). It is this researcher's belief that, although being associated to other bodies of literature and not particularly to the IMP Group, they may facilitate a richer discussion and understanding of the empirical output of this research project.

Stubbart, 1989, Sims and Gioia, 1986, Thomas et al., 1993, Mezas and Starbuck, 2003). The latter will be further addressed later in this chapter [Section 2.2.5] when the potential relation between Network Pictures and action in organisational networks is discussed.

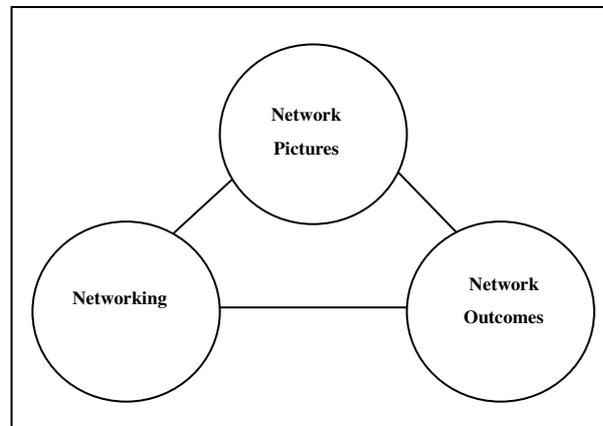


Figure 1 Model of Managing in Networks

in Ford et al., 2002 (p. 5)

Ford et al. (2002b) defined Networking as “all of the interactions of a company or individual in the network” (p. 7), including all its activities concerning the management of the existing relationships, the management of the position that it occupies in the surrounding network and its strategies on how to network (Hakansson and Ford, 2002, Ford et al., 2002b). They claimed that “all the companies in a network are simultaneously networking, by suggesting, requesting, requiring, reacting, performing and adapting activities” (Ford & Havila, 2003a, p. 8). Companies’ Networking activities result in Network Outcomes which are created both at the individual and collective level. There are outcomes for the single actors, single relationships and the network. The authors explicitly stated that the three dimensions of the model are closely interconnected. On the interconnection between actors’ views of the world and Networking, the authors claimed that the former are affected by the latter, because the Networking experiences may have an effect on the views the company holds of its surroundings. A company’s pictures are formed through interaction, through Networking with other companies and whatever happens in this process is certain to affect that company’s pictures (Ford et al., 2003). On the other hand the authors argued that actors’ views strongly affect Networking, either restricting a company’s activities or conducting it to a greater innovation level: if on one hand a company views itself in the position of a mere intermediate, it will probably not develop any major effort to innovate, and on the other hand if it undertakes a dynamic perspective associated to the network it will probably carry out more innovative interactions with other actors (Ford et al., 2003). Actors’ views of the world are put forward as being “the basis for [actors’] analysis and actions” (p. 5) and Networking

is thus a direct function of a company's pictures (Moller and Halinen, 1999, Johanson and Mattsson, 1992, Anderson et al., 1994, Ritter, 1999, Gadde et al., 2003). The interconnection between actors' views and Network Outcomes was defined by the authors as being quite clear. On the one hand, actors' pictures of the network are affected by Network Outcomes, as those pictures are reinforced or adjusted according to the perception of the obtained outcomes (expected versus "real" outcomes). Associated with a company's pictures are several expectations on what will be the outcomes of the developed Networking. If those expectations are not fulfilled, the actor changes his or her views of the world, making them more suitable for the new scenario. On the other hand, the authors also claimed that actors' views affect Network Outcomes, in the sense that the pictures are used by the actor to "observe, assess and respond to only a subset of networking outcomes that affect it, based on its particular network picture" (Ford et al., 2003, p. 184).

The integration of actors' views of the world in a Model of Managing in Networks conceptualised what other researchers had been mentioning for a long time: the idea that actors' subjective pictures of the world play a fundamental role in organisational networks and are critical for their understanding (Mattsson, 1985, Mattsson, 1987, Hakansson and Snehota, 1995a).

2.2.2 Actors' views of the world and Sense-Making Theory

When the concept of Network Pictures was first suggested there was no direct reference to what can be said as being a natural association between actors' views of the world and Organisational Sense-Making Theory (Weick, 1979b, Weick, 1969). That relation has nevertheless been frequently highlighted in the recently developed studies on the concept of Network Pictures (Henneberg et al., 2006, Henneberg et al., 2007, Mouzas et al., 2004, Ramos et al., 2005). The latter have been recurrently referred to as "actors' sense-making devices or tools".

The mentioned association can provide a better understanding of the underlying nature of organisational network actors' views of the world. This is addressed in the following sections.

2.2.2.1 Actors' views of the world as frameworks resulting from sense-making

Organisational sense-making can be defined as the process through which individuals try to make sense or try to find logic for their encompassing working scenario (Weick, 1969). It corresponds to the process by which individuals inflict structure and meaning on particular situations, by unconsciously developing frameworks that then guide their behaviour. These frameworks, also known as “cognitive structures” (Johanson and Mattsson, 1992, p. 186) or “frames of reference” (Cantril, 1941, p. 20), consist of the “set of ideas and outlooks we generally use in viewing things [...or the...] set of unspoken assumptions, expectations, and decision rules” (Zaltman et al., 1982, p. 21). They provide an explanation which is based on a patterning of events, thus allowing the understanding of a situation. Analysing and rationalising past events corresponds to a process of organisational learning and once the resulting frameworks are formulated into norms, they guide individuals' behaviour in the working scenario (Weick, 1979b, Weick, 1979a). These frameworks provide explanations not only for present or past events but also for future situations, allowing for the making of predictions (Shotter, 1993) and therefore conditioning actions.

Sense-making therefore encompasses basically two aspects: 1) the process of sense-making which relies on how individuals, drawing on past experiences and access to information, try to structure the unknown, and 2) the outcome of the sense-making process which relies on the developed individual frameworks. Weick (1995) considered that the most relevant issue in sense-making consists of understanding “how [actors] construct what they construct, why and with what effects” (p. 4) and that “sense-making is about the ways people generate what they interpret” (p. 13). Thus, Weick focussed mostly on the sense-making processes and corresponding effects.

The concept of business actors' views of the world appears to correspond to a very similar idea to that of the framework that results from a sense-making process. This close association comes through quite clearly in the initial definition provided by Ford et al. (2002b), according to which an actor's picture is about the views (*the frameworks*) they hold of the world, which is the basis for their perceptions (*the understanding of the surroundings draws on the actor's framework*) and subsequent action (*perception guides action*). Actors' views of the world can thus be defined as the frameworks of organisational network actors that helps them understanding their surroundings, dealing with their complexity and diversity, and that guides their actions and reactions in the network.

In the following section the philosophical principles underlying Sense-Making Theory are explored, to highlight the importance of considering actors' sense-making processes and resulting frameworks required for a research project of this nature. The emergent need to understand and look at actors' pictures of the world, in order to have an understanding of organisational networks, is inferred.

2.2.2.2 The social constructionist approach to 'reality' underpinning the concept of actors' views of the world

The concept of sense-making is congruent with the social constructionist approach of 'reality' (Berger and Luckmann, 1966, Berger et al., 1966, Shotter, 1993). Berger and Luckmann (1966) claimed that "reality is socially constructed" (p. 13) and "over time, people act in pattern ways and take these patterns for granted as their reality, thereby socially constructing their reality" (in Weick, 1995, p. 67). Sense-making authors have argued that the frameworks developed as sense-making tools are the basis for individuals interpretations of reality (Weick, 1995). "In the absence of any objective reality [...] knowledge reflects the interpretation of reality by individuals" (Palmer and Ponsonby, 2002, p. 173). While sense-making is about enactment and invention (about the process of sense-making and generation of frameworks), the social constructionist perspective is more about perception and interpretation of what has already been created through the process of sense-making (about the frameworks) (Geersbro, 2004, Weick, 1995). The frameworks that result from sense-making processes have been metaphorically defined by Zaltman et al. (1982) as a *lens* between an event and its interpretation.

Undertaking this interpretative perspective, actors' decisions and consequent actions result from the interpretation and perception of their surroundings and that interpretation is based on their frameworks (Zaltman et al., 1982). This is pointed out as being the reason why several authors have devoted their research to the understanding of organisational sense-making processes (Johanson and Mattsson, 1992). The starting point for the interpretation relies therefore in people's frameworks. This means that sense-making is the foundation for people's interpretation of events and subsequent actions. For this reason, it seems crucial to understand the process by which frameworks are constructed, how they lead to consequences and what their content is about². From an organisational perspective, developing the knowledge to analyse those frameworks appears to be quite important, given that only then

² Further on in this chapter, it is highlighted that the aim of this research project is mostly related with this last aspect of sense-making: what the content of frameworks is about.

can they be managed. This is expected to lead to the enhancement of management practices (Zaltman et al., 1982).

This social constructionist perspective of ‘reality’ also underlies the body of literature of the Industrial Network Approach (Henders, 1992, Welch and Wilkinson, 2002, Hagg and Johanson, 1988), where the concept of organisational network actors’ pictures of the world was introduced. According to this approach, given that ‘things’ have a dynamic and heterogeneous nature and everything is somehow interconnected, actors play a crucial role in the construction of their own reality (Hagg and Johanson, 1988, Henders, 1992, Anderson, 1988, Hudson and Ozanne, 1988). As explained above, the construction of one’s reality relies on the interpretation of the surroundings and this draws on the frameworks that result from sense-making processes. Thus, the analysis of sense-making processes and resulting frameworks seem fundamental, not only to understand organisational behaviour (Weick, 1979b, Weick, 1995), but also inter-organisational relations that take place in the complex organisational networks where those relationships are embedded (Geersbro, 2004).

In the following section, there is a discussion on how the ongoing subjectification-objectification cycle associated with sense-making processes and generation of individuals’ frameworks, can be used to understand the process through which actors’ views of the world are generated and constantly adapted.

2.2.2.3 The subjectification-objectification cycle underlying the development of actors’ views of the world

One of the particular features of the sense-making process is that it can be explained as an ongoing process through which the developed frameworks are modified whenever necessary and as follows (Weick, 1995, Weick, 1979b). Drawing on individuals’ conscious or unconscious assumptions and expectations, the cycle begins with the initial formation process of the ‘frames of reference’ that will be used to predict future situations. However, once individuals are confronted with events which are not coherent with the expectations drawn from their frameworks, they have to deal with these discrepant events and the ongoing process of sense-making is interrupted: the framework has to be modified (Louis, 1980). Sense-making is “about things as placement of items into frameworks, comprehending, redressing surprise, constructing meaning, interacting in pursuit or mutual understanding, and patterning” (Weick, 1995, p. 6). From a cognitive stance, “human activity [is] an ongoing input-output cycle in which subjective interpretations of externally situated information

become themselves objectified via behaviour (e.g. Berger and Luckman; Weick, 1979)” (Porac et al., 1989, p. 398). The sense-making process consists of the continuous transformation of subjective interpretations of external information (materialised as cues) into individual cognitive frameworks.

Undertaking a social constructionist approach, actors experience reality through a continual subjective-objective-subjective transformation, and it is this transformation that “makes it possible eventually to generate interpretations that are shared by several people. Thus, over time individual cognitive structures become part of a socially reinforced view of the world” (Porac et al., 1989, p. 398-399). The individual cognitive frameworks resulting in sense-making will subsequently be shared with other people and potentially become a socially accepted interpretation or understanding of the world (Porac et al., 1989, Weick, 1979b, Berger and Luckmann, 1966). This relates back to Mintzberg’s (1987a, 1987b) definition of strategy as a *pattern*, “people share many beliefs, values and assumptions that encourage them to make mutually-reinforcing interpretations of their own acts and the acts of others” (Smircich and Stubbart, 1985, p.727). “There is a reciprocal influence between subjects and objects” (Weick, 1979b, p. 166), that is to say, between action and cognition [see Figure 2]. This process of subjective interpretation of observations and cues reflects the subjectification of reality and the process by which it affects behaviour reflects the objectification of reality. Subjectification corresponds to what Neisser (1976) identified in individuals’ perceptual cycle, as the influence that the potentially available information in the actual world has over their ‘schema’ of their surroundings. On the other hand, objectification corresponds to the effect that the ‘schemas’ have on action (Neisser, 1976).

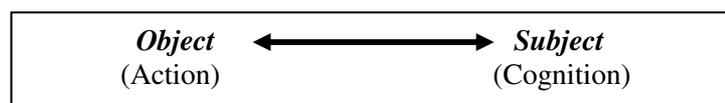


Figure 2 Interconnection between subjects and objects
in Weick, 1979 (adapted)

The strong interconnection between Network Pictures, Networking and Network Outcomes suggested with the Model of Managing in Relationships, reflects this ongoing cycle that draws on sense-making theory and describes the formation of frameworks. Hence, this cycle is associated with the development of actors’ views of the world. There is a logic underpinning these interconnections, which results from the enacted and social constructionist nature of actors’ pictures of the world. The model and suggested interconnections between the three dimensions can therefore be analysed according to the

objectification and subjectification transformations that lie beneath sense-making and the social construction of reality (Weick, 1979b, Berger and Luckmann, 1966) [see Figure 3]. These transformations reflect the creation and ongoing adaptation of actors' views of the world (that which corresponds to the subjectification process) and their effects on Networking and Network Outcomes (that which corresponds to the objectification process) (Henneberg and Mouzas, 2004). In an organisational network scenario, actors “manage in a network that is perceived and constructed through their beliefs about network structures and constituting mechanisms” (Henneberg and Mouzas, 2004, p. 5). Subjectification is expressed by mental representations of their surrounding network, their Network Pictures (Henneberg and Naudé, 2003). These representations are created by individuals and companies to understand and outline their surroundings and are individuals' and companies' ‘quasi-realities’. Network Pictures depend upon individuals' and companies' experience, relationships and positions held in the network, which are a result of their interactions and perceptions (Ford et al., 2002b). Therefore, subjectification occurs when the Networking experiences affect Network Pictures or when the perceptions on Network Outcomes lead to a reinforcement or adjustment of the Network Pictures.

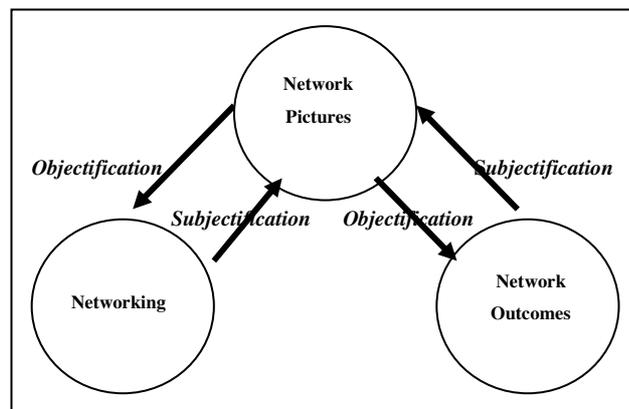


Figure 3 Model of Managing in Networks (Adapted)

in Ford et al., 2002 (p. 5)

Actors interact and network according to their understanding and to their interpretations, according to the subjectification of what they observed, their ‘quasi-realities’ (Berger and Luckmann, 1967, Weick, 1995). “... The objectivity of the institutionalised world, however massive it may appear to the individual, is a humanly produced, constructed objectivity” (Berger and Luckmann, 1966, p. 78). By interacting according to their views of the world, actors proceed consciously or not to the objectification of their interpretations (Ford et al., 2003). “Socially constructed beliefs [...turn into...] objective consequences via the enactment of these beliefs through managerial activities” (Henneberg and Mouzas, 2004, p.

10). They enact 'reality' according to their subjectification, that is to say according their generated pictures of the network. At the Networking level, this objectification occurs through actions, interactions, positions and experiences. At the Network Outcomes level, objectification takes place with the adjustment of expectations on Network Outcomes according to the company's Network Pictures. After an objectification process, network cues are once again interpreted and subjectified, and the subjectification-objectification-subjectification cycle continues. This process of objectification and subjectification that appears to underlie the concept of actors' views of the world confers on the latter a dynamic nature.

In the following section some of the features that may be associated with actors' pictures of the world, resulting from their natural association with the frameworks that are generated from sense-making processes, are explored.

2.2.2.4 Features of actors' views of the world

Weick (1995) identified seven properties for the process of organisational sense-making: it is a social process, grounded in identity, retrospective and prospective, ongoing, focused and extracted from *cues*, driven by plausibility rather than accuracy and enactive of sensible environments. The latter is a result of the perception-action phenomenon: when people act, they bring frameworks, structures into existence and set them in action. The presented properties of organisational sense-making condition the features of the frameworks that result from individuals' sense-making processes.

Drawing on the association between organisational network actors' views of the world and Sense-Making Theory, as well as on the principles from the Industrial Network Approach, some features that seem to be inherent to the views held by business actors are put forward. This reflects further theoretical development of the concept.

1) Retrospective and prospective

Previously it was mentioned how the sense-making resulting frameworks are a product of individuals' past experiences and access to information (Cantril, 1941, Weick, 1979b, Weick, 1969). Thus these frameworks can be said to be retrospective. Actors' views of the world may also be retrospective, in view of the fact that they are believed to be built on participants' experience, relationships and positions held in the network (Ford et al., 2002b). Mattsson (1985, 1987) highlighted how actors understand and interpret their surroundings based on past experiences and memories, reflecting retrospective techniques through which they look

back on situations that have already produced an output. Pfeffer and Salancik also underlined the important role played by retrospective processes (Weick, 1995). Actors' pictures of the network can thus be said to correspond to representations of past events and present positions (Mouzas et al., 2004).

It was also mentioned how the sense-making resulting frameworks offer explanation for future events, therefore allowing for the making of predictions, framing possible scenarios and creating expectations regarding the future (Shotter, 1993, Stubbart, 1989). Actors' views of the world may also be considered prospective, because they are believed to condition and affect actors' decision processes and future actions and reactions (Ford et al., 2002b). Mattsson (1985, 1987) also pointed out how actors interpret their surroundings based, among other factors, on beliefs about the future. Moreover, because actors' pictures of the network are believed to structure the unknown, they can be used to deal with uncertainty (Ford et al., 2003).

The output of the combination between the expected retrospective and the prospective nature of actors' views of the world can be said to reflect the "balancing of experience against expectation" (Geersbro, 2004, p. 7).

2) *Enacted*

It has been pointed out that the outcome of a sense-making process is the result of an enactment or creation process, which reflects the interpretative character of resulting frameworks (Weick, 1969, Berger and Luckmann, 1966). Moreover, actors' views of the network are not objectively given, but instead inferred from *cues* extracted from the information available in their surroundings (Henneberg et al., 2004a). These *cues* were defined by Weick as the "simple, familiar structures that are seeds from which people develop a larger sense of what may be occurring" (in Porac et al., 1989, p. 50). When acting, actors materialise structures and set them in action (Weick, 1979b), thus creating the surroundings in which organisational life develops: they enact their perceived network (Anderson et al., 1994, Low, 1997). For example, the "transactional network" identified in the competitive groups body of literature includes the producers, agents, retailers and consumers of one organisation. This structure is simply an enactment of that organisation's surroundings (Louis, 1980) and this enactment results from previous sense-making enactments. Therefore, there is not one abstract or correct picture of the world (Ford et al., 2003) and as an ongoing process, the enacted actors' views simultaneously affect and are a result of sense-making. This creation or invention (Weick, 1995) of what is sensed corresponds to the enactment of sensible surroundings and reflects actors' pictures of their

surroundings. Furthermore, because actors are part of the network, this created network constrains their actions or creates opportunities (Hakansson and Ford, 2002, Weick, 1979b, Weick, 1995).

3) Idiosyncratic

It has been highlighted that the frameworks resulting from sense-making processes are conditioned by individuals' previous experiences and access to information³ and result from individual enactment processes (Weick, 1969, Weick, 2001). Thus, those frameworks are subjectively held by individuals and not by companies (Ford et al., 2002b, Henneberg et al., 2004a, Hedaa and Tornross, 1997). "The real world is actually the world that is idiosyncratic, egocentric and unique to each person" (Weick, 2001, p. 71). In light of the association between frameworks and organisational network actors' views of the world, the latter may also be said as being individual, idiosyncratic and atomised; they are "managers' subjective mental representations" (Henneberg et al., 2004a, p. 3) of their surroundings. Actors' pictures are "the different understanding that players have of the network [...] based on their subjective, idiosyncratic sense-making" (Henneberg et al., 2004a, p. 5). Moreover, because each individual has singular experiences, memories and access to information (Mattsson, 1987), as well as goals, interests and philosophies, distinct individuals may be expected to hold different views (Ford et al., 2003, Salmi et al., 2001): different understandings of what the extent, content and characteristics of the network are (Ford et al., 2002b, p. 2). An actor's idiosyncratic interpretation of the surrounding network conditions the definition he holds of himself and of other actors and guides his behaviour. In addition, if actors do hold distinct views regarding other actors, then the definition of any actor is dependent, not only upon how that actor sees himself, but also on how the surrounding actors perceive him. Thus each company may be expected to comprise distinct, dispersed and maybe contradictory views of the world (Mouzaz et al., 2004), corresponding to the views held by the different individuals or functions within (Ford et al., 2002b, Ford and Thomas, 1995, Mattsson, 1987). Moreover, if the surroundings are subjectively 'created', instead of one sole environment or 'the' environment, there may be several, i.e. one for each individual. The idiosyncrasy of actors' views of the world is also associated with some particularities of organisational networks which are discussed below.

³ Companies are almost obliged to develop their activities without access to complete information. A picture of what goes on in the surroundings is created through companies' interactions in the network with other companies and exchange of information resulting from those interactions (Axelsson, 1992). Interpreting a network can be quite difficult for a company that has restricted access to information.

4) Inter-subjectively generated

Weick (1995) argued that although sense-making frameworks are individual, subjective and the result of a cognitive process, they are also a product of social interaction. It is not possible to dissociate individuals from the social dimension, as they are fundamental aspects of each other. Authors such as Walsh and Ungson (1991) emphasised this interconnection when they defined an organisation as a “network of inter-subjectively shared meanings that are sustained through the development and use of a common language and everyday interaction” (p. 60). That is to say, in accordance with Organisational Sense-Making Theory, as individuals’ ‘frames-of-reference’ are inter-subjectively generated, they must be affected by the context in which they are developed, i.e. the organisation. As a framework that results from sense-making, notwithstanding being individual and resulting from subjective (Anderson et al., 1994) and indeterminate (Gadde et al., 2003, Mattsson, 2002a) sense-making mechanisms, organisational network actors’ views of the world may also be expected to be inter-subjectively or socially created. In other words, the individual is influenced by and influences the social level⁴. Individuals are believed to “acquire their personal identity and position towards others as they learn and develop in conjunction” (Hakansson and Snehota, 1995a, p. 34). In the quality of organisational network sense-making devices, actors’ pictures of the network regard individuals’ views of the surrounding network and they may therefore be expected to be socially generated by contact with other individuals from their company or from other companies in the network. Actors’ views of the world are thus believed to be socially constructed with the other participants of the (company or) network in which they operate (Henneberg et al., 2006). Actors’ pictures may thus be expected to be affected by the context in which they are generated: the network.

The understanding of how actors’ views of the world are inter-subjectively generated is considered to be one of its important aspects (Weick, 1979b, Geersbro, 2004). There may or may not be a shared view. A shared view can be obtained by means of shared action or shared means and not necessarily shared goals (Geersbro, 2004). This means that at the inter-organisational level, “actions, shared in the sense that they involve two actors, not necessarily synchronic in time and or in space, allow actors to create that which is shared: the relationship [...]: relationships come from shared actions rather than shared goals” (Berger and Luckmann, 1966, p.6). This statement is coherent with Berger and Luckmann’s notion of the social construction of reality. Shared actions is thus said to lead to the collectivisation of sense-making.

⁴ This influence of the individual over the social level in a business market was exemplified by Hedaa et al. (in Henneberg et al., 2003).

5) Not a mere representation but instead serving specific ends

This feature of actors' views of the world (Henneberg et al., 2004a, Ford et al., 2002b) is related to some basic assumptions associated with the 1) generation process and 2) usage of actors' views of the world. Regarding their generation process, actors are believed to include only a part of the network in their frameworks, that is to say they select which actors, activities, resources and relationships are part of their surroundings. This is what Callon (1997) described as the 'framing' process and that which Weick (1995) named the "bracketing" process. Practitioners naturally and unconsciously select elements from the network, limiting what they see or consider as being the network. This unconscious action is justified by actors' limited cognitive capacity, with regard to the complexity associated with the business environment (Holmen and Pedersen, 2003), by their ignorance and conditioned understanding of some network relationships and connections (Anderson et al., 1994), as well as by their problems, uncertainties and abilities (Ford et al., 2002b, Henneberg et al., 2004a). It implies that from the overall network only a restricted amount of situations and actors can be identified and acted upon (Hakansson and Snehota, 1989, Anderson et al., 1994, Hakansson and Johanson, 1993, Henders, 1992, Salmi et al., 2001, Holmen and Pedersen, 2003, Holmen and Pedersen, 2001). The unconscious selection is carried out by practitioners according to the particularity of the situation and purpose of analysis, always depending a) on actors' perspectives (Spender and Eden, 1998) and what they consider relevant for achieving a specific purpose related to their own function or to their company's aims, and also depending on b) the access they have to information. The latter is mostly dependent on their "theories-in-use" (Zaltman et al., 1982), past experiences and position occupied in the network (Mattsson, 1985). Hence, actors and relationships may be included more or less in actors' frameworks (Henneberg et al., 2004a, Anderson et al., 1994, Holmen and Pedersen, 2003, Holmen and Pedersen, 2001). Consciously or not, practitioners generate specific views of the world to reach particular ends (Ford et al., 2002b, Henneberg et al., 2004a), to "assist in coping with specific demands, to secure defined outcomes" (Henneberg et al., 2004a, p. 9). It is therefore quite natural for managers to perceive their company as the network's *hub*; this is a way for them to achieve their company-centred objectives (Ford et al., 2003).

With a specific aim in mind, while acting, reacting or interacting, actors may be expected to expand some aspects of their frameworks according to their needs: "a company has an element of choice in its Network Pictures and it can choose to enhance particular aspects as a basis for its networking" (Ford et al., 2002b, p. 20).

2.2.3 Idiosyncrasy of actors' views of the world and organisational networks' particularities

In the previous section it was mentioned how researchers believed that the subjectivity of actors' views of the world is a result of these being conditioned by their previous experiences, memories and beliefs about the future (Mattsson, 1985, 1987) and by their relationships and positions held in the network (Ford et al., 2002b). Actors' past experiences and their access to information were also pointed out as factors that lead to this subjectivity (Weick, 1979b, Weick, 1969). Thus, all these factors condition how actors perceive the world and as such ought to be considered when analysing actors' pictures of the network.

It is suggested that some inherent features of organisational networks, namely their complexity and qualitative diversity, also result in the idiosyncrasy of actors' views of the world. As such these network features ought to be considered in analyses on actors' pictures of the network. Some of the grounds why actors' subjective views of the world are believed to be a key aspect in gaining an understanding of organisational networks are also explored.

2.2.3.1 Organisational networks' complexity

A considerable complexity is traditionally associated with organisational networks. Two particularities of organisational networks confer this feature upon them: 1) their interconnectedness and 2) the importance that the concept of actors' positioning assumes. These two features have led researchers to believe actors' views of the network are idiosyncratic and that they are a key aspect of networks.

. Organisational networks' interconnectedness

This is one of the aspects that make for the complexity of networks. In the early nineties, the IMP Group developed a descriptive Industrial Network Approach, which provided researchers with a tool for understanding the role played by actors in industrial development and stability, a tool that facilitated a more reliable way of describing and analysing business relations as part of an overall industrial system⁵ (Axelsson and Easton, 1992, Hakansson and Johanson, 1992, Hakansson and Snehota, 1995a). The approach thus allowed an integrated analysis of industrial systems' development and stability. Researchers have empirically observed that companies are embedded in a network of interconnected relationships (Hakansson and Snehota, 1989, Hakansson and Johanson, 1992, Axelsson and Easton, 1992),

⁵ Other authors, such as Henders (1992), have substantiated the methodological suitability of adopting networks for analysing and understanding industrial systems and related phenomena (Low, 1997).

connected to all other companies in direct or indirect ways (Anderson et al., 1994, Havila, 1996, Laage-Hellman, 1989, Axelsson, 1992) and that this should be considered in the overall analysis of actors' roles. Interconnectedness has two key implications that should be considered, to gain an understanding of the subjective nature of actors' views of the world.

First of all, networks' interconnectedness implies that it is always feasible to find some relation between any two companies and between their resources and activities. As a consequence, one may argue that there is one single network which encompasses every actor, resource and activity in the world: *the* network (Easton and Araújo, 1992, Ford et al., 2002b, Anderson et al., 1994). *The* network is the universe; it includes every actor in any part of the world, in any business area, and all interactions and relations between actors (Easton and Araújo, 1992). "The network setting extends without limits through connected relationships" (Anderson et al., 1994, p. 4). This observation confers 'the' network with substantial complexity, a complexity that is beyond any actor's capacity or will to understand and to know about what is going on in the *whole*. Given the impossibility of considering the *whole* network, practitioners *choose* to *see* solely certain aspects of it (Anderson et al., 1994), making it *manageable*. It is not possible to establish objectively where *a* specific organisational network starts or where it ends (Ford et al., 2003, Ford et al., 2002b). By subjectively establishing where it begins and where it ends, it is possible to talk about *a* specific network and about several networks. Practitioners therefore restrict their views and choose or are able to see solely a restricted set of things around them, things they consider relevant for the development of their business activity. Moreover, as distinct actors develop distinct business activity and have different agendas and different experiences, each actor may be expected to see different things. This reinforces the point that actors' pictures of the network have substantial subjectivity. A network comprises the following elements (Ford, 2005) [see Figure 4]: 1) Scale and Structure, 2) Processes and 3) Positioning. Each actor may see different things for each of these elements, thus holding a subjective, individual view of the world.

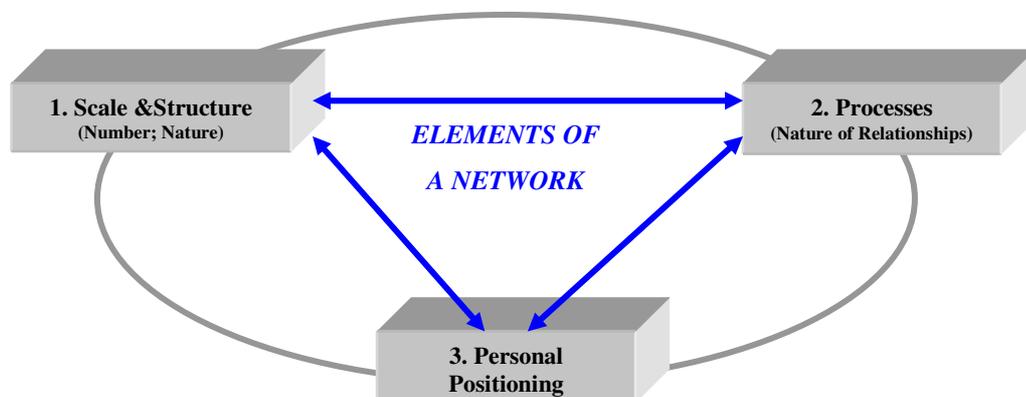


Figure 4 Elements of *a* network

The second implication of interconnectedness is that companies' strategies are interdependent: the outcome of a company's actions will always be affected by and affects other companies' actions (Ford et al., 2002b). "A change in the position of one firm will change, to a greater or lesser extent, the position of other firms in the network [... and...] can spread out from the initiating firm through the whole network, by way of a cascade of position changes" (Easton, 1995a, p. 20). Anything that happens in a company may thus affect other companies' business activity and positioning or vice-versa. If a company changes its strategy, there will also be strategic changes in other companies. These "multiple, sequential and interrelated strategic actions" (Mattsson, 2002b, p. 417) constitute what Hertz (1998) defined as the "domino effect". "Strategic actions are both constrained and facilitated by the market structure and by the strategic actions of others" (Mattsson, 2002b, p. 417). This means that a company does not have a chance to develop its own independent strategy, owing to other companies' actions, reactions and re-reactions (Ford et al., 2003). "The evolution of a company's strategic direction is not the outcome of its own deliberations, choices and actions alone, but is also dependent of the corresponding commitment, acquiescence, initiatives and counter-moves of others" (Ford et al., 2003, p. 201). Moreover, because researchers believe actors have subjective and idiosyncratic views of what takes place in the surrounding network, then their actions, reactions and re-reactions may be perceived in different terms by distinct actors.

. The importance of the concept of actors' positioning

The second aspect that leads to the complexity of organisational networks, and that is considered relevant for understanding the importance of actors' subjective views, has been argued to be the importance of the concept of positioning in the Industrial Network Approach body of literature.

There are several reasons why the concept of positioning is considered fundamental for IMP researchers. Business relationships between companies in the network are represented by the positions occupied by those companies (Easton, 1995b). Position can therefore be used to analyse an organisation's strategic situation (Salmi, 1996) and eventual opportunities or constraints for future strategic activities (Mattsson, 1987, Salmi et al., 2001). The power relations that result from the positioning determines a companies' possibility to change position and thus introduce strategic change (Webster, 1992). A "company's position is defined by the characteristics of the company's relationships and the benefits and obligations that arise from them" (Ford et al., 2002a, p. 48). It results from the company's past actions and investments (Mattsson, 1987) and it captures the dynamism, the complexity and the

connection that exists between the companies that operate in that network (Low, 1997). A key point to companies' strategy development lies in establishing, developing, ending and maintaining positions (Mattsson, 1987), and these can be achieved with the introduction of change into business relationships and interactions (Salmi, 1996). Nevertheless, because of organisational networks' interconnectedness, one company cannot unilaterally define and implement a strategy (Ford et al., 2003). Strategic change always reflects significant changes in an organisation's position in the network and the ability to implement change is a direct function of its strategic situation (Mattsson, 1985).

There are also several reasons why there is a strong element of subjectivity associated with the central IMP concept of positioning. Each actor occupies a specific position in the network's activity pattern, web of actors and resource constellation, depending on each actor's portfolio of relationships (Hakansson and Johanson, 1992). Yet, since each actor is directly or indirectly connected to other actors and assumes different roles for each of those actors, they may be perceived as simultaneously occupying several positions. Position is also about "the roles that the organisation has for other organisations that it is related to, directly or indirectly" (Mattsson, 1985, p. 266). Hence, an actors' position in the overall network depends upon that actor and the surrounding actors' interpretations and both the actor's perception and other actors' should be considered. "The relationships do not stand alone and it is clear that the views and expectations of the companies about each other are conditioned by the other relationships in which they are enmeshed" (Ford and Thomas, 1995, p. 226). The subjectivity associated with the concept of positioning was reinforced by Johanson et al. (1992) who claimed, as it already been mentioned, that actors who want to change their positioning may either actually try changing their positioning or simply try changing the surrounding actors' perceptions. Actors' perceptions or subjective views on the concept of positioning thus have a direct impact in the overall network.

2.2.3.2 Organisational networks' diversity

It is possible to identify some differences between organisational networks, reflecting a certain qualitative diversity. This means that it is possible to identify specific situational factors, where actors develop their business activity and views of the world. It seems quite natural that actors see different things in different terms, when the features of the network they are operating in are substantially different. Organisational networks' qualitative diversity is thus believed to be another factor that leads to the idiosyncratic nature of actors' views of the world. Hence, it would be advisable for any research on actors' pictures of the network to consider such diversity.

. Predominant relational exchange features⁶

This is one possible way of differentiating organisational networks in a qualitative way and it was put forward by Lambe et al. (2000) who distinguished between *Interimistic* and *Enduring Exchange*. These two forms of relational exchange correspond to quite distinct contexts, different organisational networks, where actors' develop their business activity and subjective view. Actors from both contexts may be expected to see the network in different terms and context is thus a factor to be considered when analysing their views of the world.

The concept of *Interimistic* relational exchange resulted from Lambe et al.'s (2000) identification of a form of relationship that did not fit some of the principles associated with the evolutionary model of relational exchange ingrained in the IMP theory. The model of relational exchange was already associated with a shift in the focus of interest of Business-to-Business marketing researchers that took place in the late eighties, when they stopped analysing transactional exchange and began looking at relational exchange, having begun to analyse inter-firm exchanges as relationships between companies (Hakansson, 1982, Hakansson, 1987, Johanson and Mattsson, 1987, Ford, 1980, Hakansson and Snehota, 1995a, Dwyer et al., 1987, Morgan and Hunt, 1994). The model of relational exchange presumed that so that relationships could be functional, they had to hold certain attributes such as trust (Morgan and Hunt, 1994, Dwyer et al., 1987), commitment (Moorman et al., 1992, Morgan and Hunt, 1994), adaptation (Hallen et al., 1991, Ford, 1980), cooperation (Hallen and Sandstrom, 1991), communication (Anderson and Naurus, 1990), norms (Heide and John, 1990), mutual goals (Morgan and Hunt, 1994), social bonds (Wilson, 1995), amongst other features . There was also a shared believe that high levels of these relational attributes could only be achieved if the relationship went through various stages which took place over a medium or long term period (Ford, 1980, Dwyer et al., 1987, Morgan and Hunt, 1994, Hakansson, 1982, Ford, 1990, Hallen et al., 1991, Wilson, 1995, Anderson and Weitz, 1990); continuity was therefore considered a pre-condition for relational development to take place (Hakansson and Snehota, 1995b). However, Lambe et al. (2000) identified *Interimistic* relational exchange as a form of exchange which was not congruent with the evolutionary model of relational exchange. This form of exchange still presented the features that allowed for differentiating it from transactional exchange and identifying it with relational exchange: some relational exchange situations were short-term or interim and presented low expectation on future transactions. This form of exchange therefore presented quite distinct relationship

⁶ This concept will be used later on in the research project to proceed to the selection of organizational networks to be included in the empirical research. It will also be used to understand some of the implications of Network Pictures.

attributes to those that were associated with an underlying continuity (Hakansson and Snehota, 1995b), thus reflecting the inadequacy of the model of relationship development drawn up as an evolutionary process (Lambe et al., 2000). These authors suggested that the relational exchange continuum should be bifurcated into *Enduring* (i.e. long-term) and *Interimistic* (i.e. short-term) relational exchange [see Figure 5].

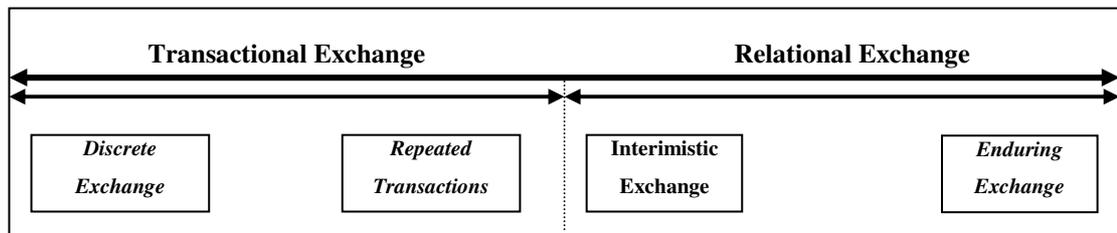


Figure 5 The transactional and relational exchange continuum
in Lambe et al, 2000

Conducting a time analysis and comparing *Enduring* with *Interimistic* within relational exchange, Lambe et al. (2000) suggested that in the latter, partners do not have as much time to develop relationship attributes. As such, there is an eminent need to develop a non-evolutionary relationship development model in order to explain interimistic relationships. Moreover, some relationship attributes that are considered necessary to make a relationship become functional show lower levels in the interim exchange than in the enduring form (e.g. lower levels of trust, commitment and communication). Finally, interimistic relations seem to rely more on non-relational or governance mechanisms (partners have less time for relationships specific norms; e.g. reciprocity). *Interimistic* exchange thus seems to rely simultaneously on Williamson's Transaction Cost Analysis (Cook and Emerson, 1978) as well as on Social Exchange Theory (Fiol and Huff, 1992, Eden and Spender, 1998, Sims and Gioia, 1986, Huff, 1990). It can therefore be said to be less relational than *Enduring* exchange. An example of a situation where *Interimistic* relational exchange would characterise the existing relation would be that of a project (Purchase and Olaru, 2004).

2.2.4 Actors' views of the world and other similar concepts from the IMP perspective

Concepts such as Network Theories (Johanson and Mattsson, 1992, Mattson, 2003, Mattsson, 2002b), Network Horizon (Anderson et al., 1994, Holmen and Pedersen, 2003, Salmi et al., 2001, Haimala and Salminen, 2004), Network Maps (Borders et al., 2001), Ideas or Schemas (Welch and Wilkinson, 2002) and Network Insights (Mouzas et al., 2004, 2005), are the most relevant examples of concepts that were introduced in the IMP literature. These are relatively

similar to the suggested concept of actors' pictures of the network (Ford et al., 2002b). Although they refer to a similar idea and can all be applied to organisational networks, there are some significant differences between them. In the following table, the way these concepts were initially defined and the main ideas they encompass are reviewed [see Table 1]. The table can be used for identifying and understanding the main differences between the concept of actors' views of the world and all the remaining ones.

Comparing the concept of actors' pictures of the network with the five previous ones, it is possible to conclude that the former concept encompasses all the others. Only the concept of Network Insights transcends the Network Picture concept, given that it is about amalgamating actors' views of the world that are defined in the literature as actors' Network Pictures. It is worth mentioning that the concept of Network Insights considered in this section and illustrated in Table 1 is restricted to that suggested by Mouzas et al. (2004, 2005) within the IMP body of literature. It is not this researcher's intention to address ways of defining insights from other literature that lie outside the bounds of IMP theory.

Mouzas et al. (2004, 2005) pointed out that because actors' pictures are atomized, subjective, indeterminate and idiosyncratic by nature, they cannot be used to assess what the 'network competences' are (Ritter, 1999, Ritter, 2000). These authors have thus argued that actors' views of the world ignore the difference between what can be literally possible to do in the network and what actors conceive as being possible to do whilst making use of their pictures. They thus claimed that the latter alone are not useful for managerial practice since they do not allow the understanding of inter-organisational exchange (Mouzas et al., 2004, Meindl et al., 1994). However, Mouzas et al. (2004) did not reject the overall usefulness of actors' views of the world, accepting that this usefulness was valid for a subjectified level of analysis. Actors' views of the world are said to lead to network-related activity options which are not enacted unilaterally, and instead they are embedded in an exchange process that begins with negotiation actions. These negotiation actions reflect an iterative cycle of thesis, antithesis and synthesis about the non-task related network properties (Mouzas et al., 2004). Drawing on the Network Theory and Knowledge Approach, these authors recommended the concept of 'Network Insights'. They suggested a 'funnel' process that would begin with the integration of actors' dispersed impressions, images and identities, which would then undergo an amalgamation process through negotiation actions. This would allow companies to build-in a clearer and more objective understanding of the possibilities inherent to the surrounding network. 'Network Insights' by this definition reflect an inter-subjective process and the outcome of their development would be an operational tool that would allow companies to build-in a profound knowledge of the network 'reality' that could be used to make practical

decisions regarding these insights (Mouzas et al., 2005). These insights could then be managed and used to mobilize others in order to pursue specific interests and plans.

However, the researcher of this PhD project believes that the analysis at a network level of individuals' views of the world would provide the same knowledge and insight that these authors claimed to be achievable only by the development of Network Insights. If that is the case the concept of Network Insights may be considered superfluous. The amalgamation process of individuals' views of their surroundings suggested by Mouzas et al. (2004, 2005) may be interpreted as the reification of those views at the network level. Yet, given the underlying expected idiosyncratic nature of actors' views of the world, it is this researcher's belief that actors' pictures may be compared but not amalgamated. Also, considering that no sound research has so far been developed on individuals' views of the world at the inter-organisational level, and given that networks are made of individuals, to say that it is possible to reify individuals' perceptions seems like an incredible 'jump'. Moreover, Ford et al. (2002a) claimed that it is possible "to gain more insight into a network by looking at the pictures that the companies have of each other, their resources and relationships" (p. 37). Therefore, what seems relevant at this stage is to develop further understanding and research on what individuals' views of the world are about.

Concept	Dictionary's Definition of the Underlying Concept (Dictionary, 2003)	Definition of the Concept Provided by IMP Authors	What are the Main Ideas the Concept Comprises
<p>1. Network Theories (Johanson and Mattsson, 1992, Mattsson, 2002b)</p>	<p>“A Theory is a formal set of ideas that is intended to explain something.”</p>	<p>How “...actors’[...] view the network...” (Johanson and Mattsson, 1992, p. 186); “...the actors perceived mediated connections between relationships...” (Johanson and Mattsson, 1992, p. 189); “...the actor’s set of systematic beliefs about market structure, processes and performance and the effects of its own and others’ strategic actions...” (Mattsson, 2003p. 417).</p>	<ul style="list-style-type: none"> . Theories about surrounding ‘reality’: what works and what does not work in the sense of what leads or not to success; . Perceived positions occupied in the network; . Conditioner of actors’ strategic decisions.
<p>2. Network Horizon (Anderson et al., 1994)</p>	<p>“The Horizon is the line in the far distance when the sky seems to meet the land or the sea”; “the limits of what you want to do or of what you are interested or involved in.”</p>	<p>“...how extended an actor’s view of the network is...” (Anderson et al., 1994, p. 4).</p>	<ul style="list-style-type: none"> . The idea of boundaries; . The line that limits what one can see; . Not physical but perceptual distance; . Actors’ perception of the network’s extendedness (the network that actors think about); . Implicit views of what the actors’ interests, concerns and tasks are.
<p>3. Network Maps (Borders et al., 2001)</p>	<p>“A Map is a drawing of a particular area [...] showing its main features as they would appear if you looked at them from above”; “a drawing that gives special information about an area.”</p>	<p>“...map the networks in which the manager’s company participates...”(Borders et al., 2001, p. 202); “...managers must collect information on all of the firms that play major roles in each network or value chain. What functions does each member perform for the larger network? How is each member vulnerable? Aside from the manager’s own firm, what are the contact points between networks?” (p. 202); “...examining their own role within each network...”(p. 203).</p>	<ul style="list-style-type: none"> . Information about the companies that play major roles in the network; . Encompasses the idea of routes (what is the actual position of the subject and how can it get to another desired position).

<p>4. Ideas or Schemas (Welch and Wilkinson, 2002)</p>	<p>“An Idea is a thought that you have about how to do something or how to deal with something; it is the information of knowledge you have about something”; “A Schema is a plan that just shows the main parts of something”</p>	<p>“Schemas are the way managers make sense of their world and the interactions taking place with other organisations and represent a very different kind of dynamical force shaping relationships and network development”(Welch and Wilkinson, 2002, p. 27); “Ideas encompass the perceptions individuals and organisations have about self and others, their beliefs or “theories” about how the world functions, norms about appropriate behaviour, attitudes toward particular issues as well as values concerning what is desirable...”(p. 29).</p>	<ul style="list-style-type: none"> . Perceptions on actors’ structural features and of relationships; . Includes Network Theories; . Moral stands; . Condition behaviour.
<p>5. Network Pictures (Ford et al., 2002b)</p>	<p>“A Picture consists of lines and shapes which are drawn, painted, or printed on a surface and show a person, thing or scene”; “If you have a picture of something in your mind, you have a clear idea or memory of it in your mind as if you were actually seeing it”; “If you picture something in your mind, you think of it and have such a clear memory or idea of it that you seem to be able to see it”; “A picture of something is a description of it or an indication of what it is like”.</p>	<p>“...the views of the network held by the participant” (Ford et al., 2002b, p. 5), forming “...the basis for their analysis and actions...” (Ford et al., 2002b, p. 5).</p>	<ul style="list-style-type: none"> . ‘Picture’ of the extent, content and every other possible feature of the surrounding network; . Individual constructs which condition individual and organisational interactions; . Includes the concepts of Network Theories, Network Horizon, Network Maps and Ideas or Schemas; . “Quasi-visual” images; . Perception on actors (their resources, problems and aspirations are), relationships and positioning.
<p>6. Network Insights (Mouzas et al., 2004, 2005)</p>	<p>“An Insight is a chance to understand something or to learn more about it”; “the ability to notice and understand a lot about people or situations”.</p>	<p>“... a managerial process of integrating dispersed pieces of atomised network pictures through multilateral interactions in communities of practice that leads to organisational learning and differential knowledge for positioning and acting within a network” (Mouzas et al., 2004, p. 2).</p>	<ul style="list-style-type: none"> . Result of an amalgamation of actors’ ‘Network Pictures’ at the network level; . Presumes ‘Network Pictures’ are useless when it comes to identifying what can actually be done in the network and what are the ‘network competences’.

Table 1 Concepts identified in the IMP body of literature to structure a model of what actors see

This researcher believes that actors' views of the world are about actors' theories (what are the cause-effect relations they think about and how they perceive their positioning), horizons (how far they 'see', what actors or relationships they think about), their maps (how to get from one place to the other and where to go considering actors' perceived features and existing or potential relationships) and ideas or schemas (overall idea on how they perceive the world) of the network. Thus, it is possible to say that the Network Pictures concept is more complete than all other concepts. Moreover, it comes through quite clearly that the concept is closer to the definition of ideas and schemas than to any of the other concepts.

2.2.5 Actors' views of the world and organisational network action

The literature has suggested that actors' views of the world affect behaviour at two levels of decision making and activity development: on a networking and on a strategic level. On a lower level, as pointed out by Ford et al. (2002b), there is an interconnection between actors' views of the world and the company's networking activities. Decisions underlying the company's networking activities are part of an organisation's broader action plan: its business strategy. Thus on a higher level, the literature has pointed to an interconnection between actors' views of the world and the definition of a company's strategic action (Johanson and Mattsson, 1992) or organisational strategy development.

The interconnection between actors' views of the network and their behaviour may be identified as the main reason why it is so critical to understand what those views are about. This section aims at understanding this potential and relevant interconnection at both mentioned levels of decision making and activity, i.e. networking and strategic levels.

2.2.5.1 Actors' views of the world and networking

Networking includes all activities related to organisations' management of: 1) the existing relationships, 2) the position they occupy in their network and is also related to their 3) strategies on how to network (Hakansson and Ford, 2002, Ford et al., 2002b). Decisions are made by organisational members bearing in mind a specific strategic development. In the following paragraphs the role that Ford et al. (2002b) suggested actors' views of the world have on the decisions regarding these three networking activities are discussed.

. *The management of the existing relationships: to confront or to conform*

When managing their existing relationships on a day-to-day basis, actors may choose to confront or to conform to other actors' requirements (Hakansson and Ford, 2002, Ford et al.,

2002b). They may also decide to keep unaltered some of the aspects of the interacting with an existing counterpart and to change a number of other aspects. The confronting or conforming choices reflect the confrontation of “the status-quo of accepted ways of operating” (Ford et al., 2003, p. 180) or the conformation “to particular ways of operating into which it is tied by its relationships” (Ford et al., 2003, p. 180). The former may include, for example, changes concerning the content of an offering for a customer, its method of fulfilment, the components bought from a supplier and the latter may include the price charged to the customer or the supplier’s relationship with an intermediary. These choices are not straightforward, because as a result of the existing interdependence between actors, the viability of each option depends on the counterpart’s reaction. Decisions like these are taken every day in all interactions and although they may appear as minor changes in the long run they may lead to more radical changes and thus may affect companies’ strategic development. Thus, actors’ perception of the available choices and of those choices’ corresponding potential impacts, and perception of what is going on in the network, appear to play a key role in their networking decisions regarding their existing relationships (Ford et al., 2003).

Since every relationship results from previous investments, in view of protecting previous investments one of the actors may choose to oppose another actor’s decision to change the way operations are being developed. Therefore, relationships constitute, simultaneously, a source for opportunities and restrictions for development (Ford et al., 2003) and this is what these authors defined as the first Network Paradox.

. The management of the position occupied in the Network: to consolidate or to create

Regarding current positioning, actors may choose to keep it in the network or may choose to change it. If they choose to maintain it, they may either try to improve their daily operations within their existing relationships or may use new relationships to consolidate their position and in this latter case, the new relationships include solely counterparts similar to their existing ones. If on the other hand, they choose to change their current positioning, they may also either use the existing relationships by combining them in new ways so that the content of those relationships are to some extent altered (e.g. existing relationships may be used to develop a new technology) or they may create new ones, which reflect different content of relationships and lead to a new positioning. Deciding to maintain or change position presumes that actors have an idea of theirs and others’ positioning: an idea that is built on their subjective views of the network. Positioning is a subjective concept and thus it cannot be objectively determined. However, actors make decisions based on their perceptions with the belief that they are objective.

Actors' decision to consolidate or to create generates what Ford et al. (2003) defined as the second Network Paradox, according to which it is viable to say that a company defines its relationships and yet that company is also defined by those relationships. They choose to change or consolidate their positioning, as a result of networks' interconnectedness; this will never be a unilateral decision.

. The strategy on how to network: to coerce or to concede

Finally, actors make decisions on how to network: they may choose either to coerce other actors or to concede. These decisions raise issues regarding the control of the network. If actors decide to have total control over the surrounding companies and network and thus to coerce them, they will be missing out on the opportunity from benefiting from the network's resources and may end up with an even more self-centred view of the network. Those who are coerced into doing something by an actor will not be willing to participate in the relation with that actor who is imposing its will and the latter will miss out on opportunities. On the other hand, by deciding to concede, actors will be embracing other actors' resources and knowledge and may thus benefit from the network. Either decision will be conditioned by the way actors perceive the network and its dynamics.

Actors' decision to coerce or concede reflects the third Network Paradox (Hakansson and Ford, 2002), a paradox that is essentially about control. According to these authors, although actors in a network try to control their surrounding network, thus trying to mobilise other companies according to only its own interests, if they succeed in doing so they totally or partially destroy its potential benefits. The network comes to an end and is replaced by something that resembles a hierarchy (Williamson, 1975). Control is thus considered as having a destructive effect on the network.

2.2.5.2 Actors' views of the world and strategic management activities

There are two basic assumptions underlying the Industrial Network Approach which affect the concept of business strategy and companies' 'strategizing' activities. The latter was defined by Hakansson et al.(2002) as the process through which companies identify "the scope for action, within existing and potential relationships" and operate "effectively with others within the internal and external constraints that limit that scope" (p. 137), thus including considerable subjectivity. The first of these basic assumptions is that actors are defined by the position they occupy in the network (Low, 1997, Mattsson, 1987, Salmi, 1996, Henders, 1992). The power relationships which result in the positions that companies occupy

in the network, are seen as a central element for any company's strategy, in that this is developed with the aim of achieving better positioning (Axelsson and Easton, 1992, Johanson and Mattsson, 1992, Mattsson, 1987). Moreover, given that positioning is a subjective concept, the definition of any actor's strategic situation and action is also subjective. The second, is that there is a strong interconnection between relationships and interdependence, regarding actors' activities (Ford et al., 2002b). Companies work within the constraints and opportunities of business relationships and capitalise on the resources and activities of their surrounding network (Gadde et al., 2003), which means that strategy emerges naturally and as a part of a dynamic process (Tikkanen and Halinen, 2003). As such, it is impossible for any actor to consider the *whole* network and consequently, each actor holds a subjective view of the network.

As a result of these underlying assumptions of the Industrial Network Approach, the concept of business strategy presents some particularities when compared with previous streams of thought on strategy. Business strategy management literature flourished during the sixties and its main focus has been on understanding how companies may enhance their business performance. The concepts of 'organisation' and 'environment' are seen to constitute the building blocks for any strategist. Reviewing the most relevant body of strategic management literature, it is possible to identify three main streams: traditional strategic management (Ansoff, 1965, Andrews, 1971, Porter, 1980), competence-based strategic management (Barney, 1991, Prahalad and Hamel, 1990, Hamel and Prahalad, 1994) and the Network Approach to strategic management (Hakansson and Snehota, 1989, Johanson and Mattsson, 1992). In summary, the strategic management theories prior to the Network Approach were mostly based on economic principles, atomistic actors competed against a faceless 'external' and objective 'environment', following a plan which was formulated and then implemented (Mintzberg, 1987a). Competing with other companies was their only way to enhance performance. On the other hand, according to the Network Approach to strategic thinking, a company's surroundings are subjective and enacted. Companies simultaneously cooperate and compete within a network of relationships. The focus is placed not on economic issues, but mostly on social and cognitive dimensions, as companies develop social relations in a subjective network. Individuals' 'Network Pictures' thus play a crucial role in companies' 'strategizing'.

The Industrial Network Approach comprises three "key strategic management activities" and given the two basic assumptions underlying it mentioned in the previous paragraph, actors' views of the world are believed to condition each of these activities. These are 1) network

mobilising and 2) network positioning (Juttner and Schlange, 1996) and finally 3) network visioning (Tikkanen and Halinen, 2003).

. Network Positioning

Network positioning consists of “selecting partners and changing positions within networks by establishing and dissolving linkages with other organisations” (Tikkanen and Halinen, 2003, p. 16). When strategizing, companies manage their portfolio of relationships with the aim of achieving a better positioning in the surrounding network. This better positioning is concerned with a potential strengthening of relationships with others or potential increase of importance of their resources and activities to the surrounding network (Mattsson, 1987), or even a change in strategic situation which may improve strategic choices (Johanson and Mattsson, 1992).

Researchers have claimed there is a high degree of subjectivity associated with the process of managing positioning (Mattsson, 1987, Ford et al., 2003); if the network is enacted by its participants, its structure is itself a result of actors’ views (Ford et al., 2002b, Ford et al., 2003). The concept of positioning is therefore subjective and this means that a company’s strategic action is drawn up from a created network and not one that is objective. “All the actors involved in a particular issue in the network will have their own different ‘picture’ of the network” and that is the basis for “their actions and reactions in the network” (Ford et al., 2003, p. 175-176). As a consequence, there “are two bases for strategic action by a focal actor: its position in the network and its ‘network theories’”(Mattsson, 2002b, p. 417). If a company intends to change its position in the network, it may either act so that the structure of the organisational network is actually modified by creating new relationships and terminating or changing the content of the existing relationships, or it can simply try to influence other actors’ perceptions of the connections between relationships (Johanson and Mattsson, 1992). In the latter case, the company tries to change other actors’ views of the network. The strategic actions driving such processes are influenced by actors’ perceptions and cognitions about the so called ‘market’: their “network theories” (Mattsson, 2002b, p. 418).

. Network Mobilising

Network mobilising consists of “committing partners by sharing visions or goals, influencing relationships and network development, and allocating resources to the relationships” (Tikkanen and Halinen, 2003, p. 16). Given that companies’ business relationships and strategies are interdependent, any company’s strategic activity requires efforts to mobilise the surrounding companies, so that they approve its action and act or react accordingly

(Hakansson and Ford, 2002). That is to say that all changes take place through other companies (Hakansson and Ford, 2002) and hence changes must always be understood within a network scenario. A company's ability to mobilise other organisations from the network, so that they act and react within that company's strategy, has thus been considered by some authors as a crucial organisational capacity (Mouzas and Naudé, 2003). These efforts to mobilise others are reflected in the continuous investment or resource commitment carried out by companies on internal assets (marketing investment) or exchange relationships (market investment) (Johanson and Mattsson, 1985). "The company's relationships are prime assets in this process" (Mouzas and Naudé, 2003, p. 2). By mobilising other organisations, a company seeks a collective action, even if those companies do not share the same objective of the focal company (Axelsson, 1992).

Given networks' features of interconnectedness, it is fundamentally impossible for actors to consider *the* whole network or they may be unwilling to do so. As a consequence, they choose (or are able) to see only part of it, seeing what may be defined as *their* network. There is a framing process (Cantril, 1941) which may be interpreted as the actors' way of dealing with the complexity of their surroundings and a considerable subjectivity underlies the process. From an industrial systems perspective and according to Hakansson and Snehota (1989), by framing the network in which they operate actors try to understand "its structural and dynamic properties" (Axelsson, 1992, p. 201). Through cognitive framing, "an organisation strategically chooses a context in which it aims to exist" (Juttner and Schlange, 1996, p. 482). Only once this *context* is defined can actors attempt to mobilise others, with the aim of achieving their strategic goals.

Network Visioning

With network visioning, companies are "anticipating network evolution and creating alternative evolutionary scenarios" (Tikkanen and Halinen, 2003, p. 16). The relevance of this strategic activity was suggested by Tikkanen et al. (2003) drawing on Axelsson (1992) and Moller et al.'s (1999) notion that a company's strategy could benefit from the creation of a dynamic vision of its surrounding network. This dynamic vision includes a vision of the actual surrounding network, as well as of its potential future modifications. According to Tikkanen et al. (2003), this visioning is essential for identifying opportunities, in view of the fact that it may lead to the identification of potential shared aims. These can then be capitalised upon through a more intensive cooperation strategy.

What this "key strategic management activity" is implying is that, not only may it be interesting for actors to be aware of how they see the surrounding network, but also be aware

of how other actors' perceive it (Ford and Thomas, 1995). Only then can 'potentially shared aims' be identified and capitalised on. Other actors' views of the network are probably different from those of the focal actor and the latter may therefore consider the others' views as 'inaccurate' (Ford et al., 2002b). Moreover, because researchers believe actors' views of the world guide their actions (Ford et al., 2002b), no matter how 'inaccurate' other actors' pictures may seem from a focal actor's perspective, they will still guide those other actors' behaviour.

2.2.6 Potential functions played by actors' views of the world

From the literature review, including the initial definition of the concept of Network Pictures (Ford et al., 2002b), it can be seen that actors' pictures of the world play distinct functions. That is, they can be considered a horizon, a map, a blueprint or plan, a theory, a process, a framework or a moral philosophy (Ford, 2005).

As a horizon, actors' views of the world define how far and how much they are able or willing to see their surroundings (Anderson et al., 1994, Holmen and Pedersen, 2003), i.e. their boundaries. As a map, they reflect the structure of the surrounding network, the layout of the available resources, the graphic representation that locate actors in relation to their surroundings (Fiol and Huff, 1992). As a blueprint, actors' views may be considered as a plan, a schema, a design or a proposal and they assume a strong normative nature, reflecting what actors 'should' or 'should not' do. As a theory, they reflect what actors perceive as what works or not in the network to guarantee success for those involved, that is to say what should be done or avoided in the network (Mattsson, 2002a, Johanson and Mattsson, 1992, Weick, 1979b). As a process, actors' views of the world reflect how they perceive what happens in the surrounding network and depending on actors' "theories-in-use" (Zaltman et al., 1982) they can be centred on actor bonds, activity links or resource ties (Hakansson and Johanson, 1992). As a framework, they reflect actors' pre-defined ideas or stereotypes of what the surrounding network is about. Finally, as a moral philosophy, actors' views of the network reveal their understanding of the ethic principles that each actor (including themselves) should live by when interacting with other actors.

2.3 Network Pictures as a Research Tool

The aim of this section is to introduce the principles underpinning the device which is going to be developed in this research project: Network Pictures as a research tool. The differences

between actors' views of the world and the notion of Network Pictures as a research device are clarified, and the latter construct is conceptually developed.

2.3.1 Actors' views of the world and Network Pictures as a research tool

Previously, how actors hold pictures of the surrounding network and how those are believed to condition what the network is about were revealed. As such, actors' views of the world have an ontological status: they exist. However, individuals never need to nor would be able to articulate those views. It is not something that they consciously think about or something they can describe: they are believed to develop their business activity unconsciously, filtering what is going on in the network, in accordance with the pictures they already hold. They do not stop to think about what their views are and how they can use them.

If actors' views of the world are believed to be important for an understanding of organisational networks and if they have an ontological status, it is fundamental to find out if there is a valid way for researchers to *see* what those views are about. A concept that cannot be objectively measured posits a challenging problem for developing valid research. It is in this context that the notion of Network Pictures as a research tool is introduced.

It is important to clarify the main differences between the concept of actors' views of the network, as explored in the previous section, and the construct of Network Pictures as a research device. Whilst actors' views of the world are (unconsciously) created, used by actors and result from a sense-making process in organisational networks, Network Pictures is a research tool that, once developed, will allow researchers to (consciously) create their own picture of actors' views. The former concept thus provides the theoretical foundations for the latter construct. Further conceptual development of Network Pictures as a research tool is carried out in the following section.

2.3.2 Developing Network Pictures as a research tool

Some researchers have been trying to identify the dimensions of what actors see in the network to grasp how actors perceive the world (Henneberg et al., 2006, Henneberg et al., 2007, Ramos et al., 2005). However, no in depth research has so far been conducted on the construct. Once the dimensions for the structure of Network Pictures are identified, researchers can elicit and aggregate those dimensions, inferring actors' views of the world.

Because actors are not aware they hold pictures of their surroundings, they do not bring those pictures' dimensions together. Network Pictures result from researchers' analysis and interpretation of what actors claim to see in their surroundings. Hence, they are created by researchers as a theoretical construct and as such are without ontological status.

The need to develop such a structure was underlined by Welch et al. (2002) when these authors claimed that "research is needed to identify and measure the key dimensions of the mental maps used by firms to understand their relations and networks" (Welch and Wilkinson, 2002, p. 44) and "more generally, there is a need to develop ways of measuring the dimensions of business actors' mental models, theories-in-use or schemas" (Welch and Wilkinson, 2002, p. 43). They believed that these dimensions "are difficult to capture in the form of the usual multi-item scales used in most empirical studies of firm relationships, [...requiring a more...] interpretative approach to the study of inter-firm relations and networks" (p. 43). They also suggested that "one specific approach to measuring the characteristics of the schemas underlying a firm's relationship and network behaviour is through the use of techniques developed to study managers' mental maps and the shared cognitions of organisations" (p. 44).

Mattsson (2005b, 2005a) also pointed out a potential benefit that may result from the development of such tool. With his work on the 'performative perspective on markets', he argued that market theories have a performative effect, in the sense that actors' capacity to manage in (real) markets, is conditioned by those market theories⁷. The author (2005b) highlighted that although the IMP research has "more than other market theory perspectives, an inherently performative flavour" (p. 4) and shows concern with all four concepts related to performativity, i.e. market theory, managing in markets, market practice and (real) markets, it has "not considered enough the contributions that a more explicit performative approach could make" (p. 13). The author suggested that IMP researchers ought to explore some further issues regarding to the relation between the four mentioned concepts, namely between 'market theories' and 'managing in markets'. One of the things he criticised is how IMP researchers have not studied enough what 'practitioner theories' are about (Kjellberg and Helgesson, 2005)⁸, but instead "more generally represented how they interact with managing activities" (2005b). (Informal) 'practitioner theories' may turn out to be distinct from

⁷ Market theories refer both to academic and practitioners theories and actors' management in (real) markets is reflected through their market practices.

⁸ Recent studies (Kjellberg and Helgesson, 2005) have shown how it is possible for more than one market theory, which may even be inconsistent from an academic perspective, to co-exist in practitioner theories.

(formal) 'academic theories' and these differences ought to be considered. The development and usage of Network Pictures as a research tool may lead to a comprehension of what 'practitioner theories' are about, and thus fill the gap in this area of knowledge.

Network Pictures as a research tool can never be either objective or complete. They are never objective, because they reflect researchers' understanding of actors' subjective views of their surroundings and interpretations of the way they claim to see the network. Also, they are expected to always be incomplete, given that actors are not able to identify and characterise all the dimensions they think about when looking at their surroundings (not even when asked about each dimension separately).

Although the device of Network Pictures will have these two features, namely subjectivity and incompleteness, it can still be argued that it is important to attempt to construct such a device. Why is this? Because it probably will allow for the capture of how actors perceive their surroundings and facilitate the investigation of differences among the different actors in diverse contexts. As Ford et al. (2002) emphasize, the network is a subjective thing, depending on what each actor believes it represents and what this tool allows is to capture these beliefs. Hence, Network Pictures are not expected to be accurate, neither reflecting the totality of the surrounding network nor presenting it in an objective way, but crucially they may capture the essence of what actors' perceive. Contrasting with the idea of a photograph, actors' Network Pictures as a research tool can be associated with the idea of an impressionist painting, where the researcher is the 'painter' and the painting includes the idea that the actor holds of the surrounding objects and relations between those objects (Ford, 2005). Impressionism is "a style of painting [which focuses] in showing the effects of light on things rather than on clear and exact detail" (Dictionary, 2003, p. 556). It is also a specific kind of literature, one that draws on the use of mental associations to evoke subjective impressions and not to re-create the objective reality.

Because actors' views of the world are expected to be idiosyncratic, any research device that tries to capture those views can never try to reify those views held by different individuals. The views of the world are held by individuals and not by companies or networks, and as such they must always be considered at the individual level. This does not mean that an analysis cannot be conducted at the organisation or network level, nor that there cannot be a predominant view at both levels. Moreover, it does not mean that there cannot be some common features amongst individuals' views. What it does mean is that the views are always held by individuals.

The research tool of Network Pictures infers actors' views of the world by eliciting their explicit knowledge, and makes actors' mental constructs become more visible. Eliciting individuals' knowledge in order to make their cognitive constructions more visible, is what has been motivating cognitive mapping' researchers to develop new tools for organisational cognitive mapping over the previous few decades (Anderson et al., 1994). Thus, in this way, the interconnection between actors' views of the world, networking and network outcomes can be addressed in a more objective fashion. The way actors perceive the world may then be used as a tool for understanding managerial practices and the dynamics of networks.

2.4 Conclusion

This chapter has drawn the important distinction between the views of the world held by business actors and the concept of Network Pictures as a research device. The former are considered as the basis for business actors' actions, which is a principle rooted in Sense Making Theory. It has been posited that an actor would probably not be able to articulate his/her picture fully and the Network Picture as a research device intends to address this. What could be achieved with this research tool would be a more complete picture of the actor's views than the actor him/herself could articulate. Within this thesis, Network Pictures is thus seen as a research construct which, once developed, can be used to create a perception of the views of actors.

Most literature and inherent theoretical principles presented in this chapter will be used in the following chapters, where the construct of Network Pictures as a research tool in organisational networks is developed and used. The following chapter puts forward the method through which the research tool was developed.

Chapter 3

3 Method for Developing Network Pictures as a Research Tool

3.1 Introduction

The aim of this chapter is to present the method that was found to be appropriate and put into practice for conceptualising Network Pictures as a research device. In addition to explaining the fundamental principles underpinning the two-stage method, the aims and activities for each stage are discussed. In Section 3.2 the two stages included in the method that was used for developing the construct of Network Pictures as a research tool are presented and these are addressed in detail in Sections 3.3 and 3.4. Some conclusions are put forward in Section 3.5.

3.2 Two-Stage Method for Developing the Construct of Network Pictures as a Research Tool

Researchers cannot simply ask actors to describe the pictures they hold of the network. The suggestion is to use a slightly indirect way of questioning people to find out how they think about or how they see the surrounding world. By aggregating what they say, it is possible to record actors' pictures of the world. If actors' pictures of the world could not be captured, in spite of the importance researchers give to them for an understanding of organisational networks, it would be inappropriate to investigate this phenomenon further.

A two-stage method which aimed at developing the research tool and demonstrating it is usable and useful was applied:

. *1st Stage* - Operationalising the concept: identifying the dimensions that reflect what and how individuals see the surrounding world and defining what those dimensions mean and thus how they can be 'measured'.

. *2nd Stage* - Using the operationalised concept: interpreting the collected data using the previously derived structure.

These stages are described in detail in the two following sections. Some preliminary findings and initial perceptions experienced during the interviews were important for giving direction

to the two stages of the developed method. These initial perceptions were therefore part of a ‘narrative’ that is part of the overall story of exploration and development of the device.

3.3 First Stage: Operationalising the Research Tool

A previous attempt to operationalise Network Pictures was considered by this researcher to be inadequate and thus it was decided to develop a more sophisticated and effective research tool. When developing this tool, given the difficulty of putting forward at this point a specific structure for the concept of Network Pictures and because it was necessary to collect ‘adequate’ empirical data, a set of temporary Elements of Network Pictures was identified. An analysis of a sample of data collected with these elements resulted in the empirically derived structure for Network Pictures. These are the most relevant aspects for the first stage and each is addressed in detail below.

3.3.1 A previous attempt to operationalise Network Pictures

The first attempt to operationalise the construct of Network Pictures was conducted by Henneberg et al. (2006). Drawing on an extensive literature review, these authors tried to conceptualise its dimensions and put forward a model for describing actors’ Network Pictures. The authors advocated that Network Pictures ought to be analysed at the “pictorial” level, making the assumption that actors’ drawings or pictorial representations of their surroundings reflected their beliefs and attitudes. These representations were believed to allow for the capture of what individuals considered important about the network in which they developed their business activity (2004a).

Henneberg et al. (2004a, 2006) conducted an exploratory study with a group of executive MBA students at the University of Bath and collected solely pictorial data. The authors deconstructed actors’ Network Pictures into eight interrelated dimensions⁹: boundaries, directionality, power, time / task, environment, focus, actors / resources / activities and centre / periphery. The authors tested the model by bringing forward these MBA students’ Network Pictures and carrying out to their interpretation by using the model they had developed. The identified dimensions were found to have different levels of importance to distinct actors,

⁹ These authors stressed the difference between this framework of interrelated dimensions that they developed and that of the “onion model” proposed by Anderson et al. (1994). While according to the latter model, the three dimensions (Network Context, Horizon and Environment) have to be present in any network representation, these authors suggested that when analytically and systematically analysing Network Pictures there was a possibility that only some of the suggested dimensions would be included.

depending on the starting point and on the purpose of the analysis (Henneberg et al., 2004a, p. 3). Not every dimension included in the suggested model was used in every respondent's drawing or representation of their surroundings. The authors argued that the dimensions each individual included depended on *what it is that managers wish to represent* (Henneberg et al., 2004a), because the inclusion of these dimensions would be all that was needed to help actors achieve their desired outcomes. The subjectivity and appropriateness to specific situations of Network Pictures, as well as their purposes, were identified by these authors as the reasons for the aggregated Network Pictures' composition varying among individuals¹⁰.

The structure that was put forward by these authors presents several differences in comparison with the principles underlying the construct that is being developed with this research project. To begin with, Henneberg et al. (2006) defined Network Pictures as being actors' sense-making tools whilst in this research project they are considered as devices developed by researchers, and of use to both researchers and actors. This leads to the following distinction: whereas Henneberg et al. (2006) were mostly concerned with identifying what the dimensions that respondents mentioned when representing and describing their surroundings were, the aim of this research project is to develop a structure that allows to categorize respondents views regarding all aspects that can be associated with an organisational network. For example, it is interesting how the model that was suggested by Henneberg et al. (2006) does not include a dimension that can be found in the IMP body of literature and that appears to be important in gaining an understanding of how actors perceive their surroundings (i.e. actors' 'Network Theories' (Mattsson, 2003) or normative weight). This dimension could easily be employed by a model or structure regarding the concept. One final and important difference regards the predominately pictorial approach adopted by these authors to capture and analyse the encountered dimensions. In this PhD research project, this predominantly pictorial approach is believed to be methodologically inadequate (Ramos, Naudé and Ford 2005). It can be argued that by analysing Network Pictures essentially at the pictorial level, there is a high probability that important aspects of individuals' views of the world will be left out. The reason why it is important to consider the textual aspect of actors' perceptions is because some of the features of actors' views can be difficult to represent in a drawing (e.g. activities or resources), whereas others such as actors are more likely to be included. Hence, there may be a distortion of what individuals see. This issue was recognised by the authors who attempted to operationalize the concept of Network Pictures (Henneberg

¹⁰ Hakansson and Ford (2002) had previously suggested that to deal with multiple managerial situations, multiple Network Pictures should be used. Yet, these authors also stated that this occurs naturally since multiple Network Pictures held by distinct individuals coexist and are used at the same time, both within a company as well in its surrounding Network.

et al, 2006). For a more stringent operationalisation, i.e. the development of the concept of Network Pictures as a research device, further research is thus necessary (Ramos et al. 2005).

3.3.2 Theoretically derived structure of Network Pictures

In the literature review presented in the previous chapter it was mentioned that for actors the definition of *their* network entailed three main elements, namely: scale and structure, processes and self-positioning (Ford, 2005). This set was put forward as comprising all the elements of the network and can thus be said to represent everything that can be seen in a network. The identified set may therefore be said to also correspond to the Elements of Network Pictures [see Figure 6].

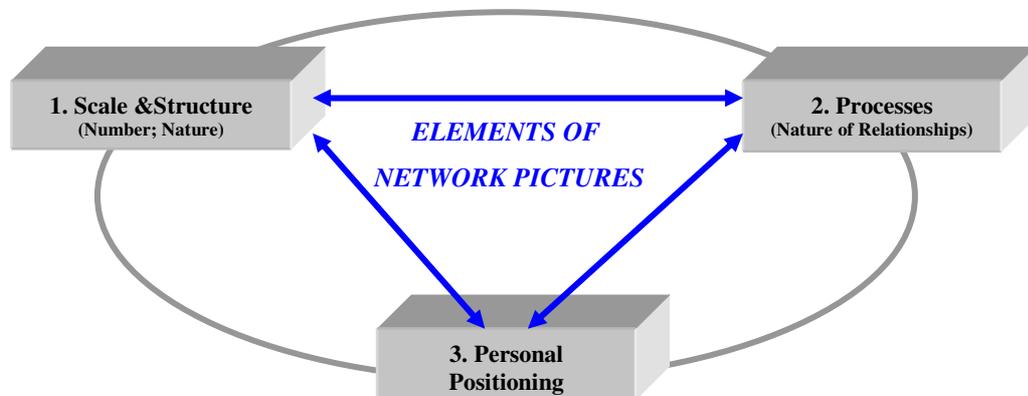


Figure 6 Elements of Network Pictures

These Elements of Network Pictures were theoretically derived and put forward as parsimoniously encapsulating all the things actors may see in the surrounding world. At this point of the research project it was not possible to do more or to be more specific regarding the suggested elements. This structure formed an initial operationalisation to the construct, providing a basis for data collecting. It was thoroughly applied throughout the data collection process. In fact, the need to identify this structure was mostly associated with the need to develop an interview guide that could then be used to collect data (Krippendorff, 2004).

In the previous chapter, it was only mentioned that the network comprised these three elements and the meaning of each element was not explored in detail. Now that these have been identified as the elements that were used for collecting data, they need to be thoroughly described.

1. Scale and Structure of the network

. Scale

The scale of the network is defined by the number of actors an individual identifies in his / her surrounding network. As mentioned earlier, *the Network* includes every single actor that is developing business activity somewhere in the world (Easton and Araújo, 1992), but actors can only consider a limited number of these players (Anderson et al., 1994, Holmen and Pedersen, 2003, Holmen and Pedersen, 2001, Ford et al., 2002b): their network. Also, depending on individuals' "theories-in-use", the surrounding actors may take the form of individuals, companies or groups of companies (Hakansson and Johanson, 1992).

. Structure

The structure or constitution of the network is defined by the nature of the actors and resources that the individual sees (Ford et al., 1998). Reviewing the IMP literature, it is possible to identify essentially three dimensions that define the structure of the network, actors': resources, aspirations and problems (Hakansson and Snehota, 1995a, Ford and Havila, 2003, Ford et al., 2003, Ford, 2005).

a) Actors' Resources

Actors' resources are not defined solely by their internal assets. Relationships themselves can also be considered a resource, one which ties several types of resources together and which defines a company's possibility to access and mobilise other companies' resources for its own interest and needs (Hakansson and Snehota, 1995a). "The core of strategy is the ability to build and maintain relationships with other actors" (Gadde et al., 2003, p. 358). Also, the position an actor occupies in the network may be considered a resource, because as in the previous case, it reflects an opportunity for getting access to other companies' resources through relationships.

A scheme that was suggested by Hakansson et al.'s (1995a) was employed in this research to address the reasons why relationships and positioning can be considered resources and to explain how companies' internal resources can be used to get access to more resources. This scheme was suggested by these authors as a way of analysing development effects of business relationships and it has been used for the past decades by the IMP researchers as a critical tool to "analyse the effects of change in a relationship and/or to identify the factors that affect the possibilities of development of a relationship". It included three levels of analysis for the three elements of the AAR Model (Actors, Activities and Resources) (Hakansson and Johanson, 1992): the company, the relationship and the network levels. At the company level, the authors identified the elements of activity structure, organisational

structure and resource constellation. These are actors' internal resources, but they are also affected by relationships established with others. Actors' capability development reflects their capacity to foster relationships with other actors, as well as to take advantage of the positive effects relationships may have for their internal resources (Hakansson and Snehota, 1995a). At the relationship level, the authors included in the scheme the elements of: actor bonds, activity links and resource ties. These reflect actors' specific relationships with other parties, including mostly marketing (with clients) and purchasing (with suppliers) relationships. They highlighted how critical it is for actors to keep these relations 'productive'. Finally, at the network level, the authors included in the model three other elements: activity patterns, web of actors and resource constellation. These define actors' positioning in the network, which then influences their possibility of developing and maintaining relationships. The same authors believed that actors' investment in their strategy development is of crucial importance; it is essential for assuring a favourable position. The development of a relationship between two companies implies the alignment of the three mentioned dimensions from each involved company. Hence, there is a reciprocal conditioning between the organisational, the relational and the network levels of analysis and thus there is an interaction between the following: 1) the perceived organisational structure, actor bonds and the web of actors; 2) the perceived resource constellation, the resource ties and the resource constellations; and finally 3) the perceived activity structure, the activity links and the activity patterns. Companies interact to get access to the resources they need in order to develop their activity (Pfeffer and Salancik, 1978) and so they look for particular features in their potential counterparts. These are mainly defined by the resources those actors hold or may have access to through their relationships and this is conditioned by their positioning.

Perception is present in practically all elements of the network and hence plays a central role in determining what actors' resources are. Actors interact with other actors drawing on their perceptions and it may be rather difficult for them to objectively define what other actors' resources are about. A considerable complexity underlies the development of business relationships and thus researchers believe that not every actor is able to see beyond actors' internally held resources, thereby they ignore the potential associated with the relationships they have or with their positioning.

b) Actors' Aspirations

One of the reasons why actors establish relationships is to accomplish their goals; this introduces the second element of the structure of the network, actors' aspirations. Aspirations reflect actors' expectations of successful achievement. Actors' determination to achieve

something is defined by how they invest in relationships (Johanson and Mattsson, 1985) and by the expectations they have regarding those relationships (Wilson and Jantrania, 1993). Aspirations may be predominately self-favouring in which this case actors are mostly concerned with their own interests, or other-favouring, whereby they are mostly concerned with the interests of others (Drolet et al., 1998).

Actors have an idea of what theirs' and other actors' aspirations are about: what are the aims an actor wants to achieve, and what are the plans for achieving those aims considering the resources they hold or can get access to. They may thus be expected to have aspirations which are not coincident with other actors' aspirations and according to Ford et al. (2003) this can potentially lead to problems within relationships. However, these authors did not defend the view that relationships "can and should be developed towards some ideal state based on mutual interest, joint decision-making and a common commitment to the long-term future of the relationship" (p.2). Instead, they argued that these potential differences ought to be present and accepted in interaction processes.

Perception also appears to play a key role in the definition of actors' aspirations. Not only are actors' aspirations expected to be naturally and substantially different from those held by other actors, but also they may be assessed differently by distinct actors (Ford and Havila, 2003). Because actors' views of the world are believed to be idiosyncratic, the activities developed by an actor within the network, with the aim of achieving a certain purpose, may be understood differently by distinct actors, according to their perception of what that particular actor's aspirations are.

c) Actors' Problems

One interesting way of analysing how actors relate to each other is through the identification of problems within the network (Ford et al., 1998). In a buyer-seller relationship, it is very common for both parties to have certain problems and uncertainties, when purchasing and selling a product / service. It is quite common for actors to count on their counterparts' skills to provide a solution to their problems or uncertainties. "Because of the multiplicity of sources of problems, managers' abilities to identify these problems is likely to be as critical as their ability to identify opportunities" (Ford and Havila, 2003, p. 3). These problems may originate in the companies themselves ("company problem") or they may arise from the relationships with other companies ("relationship problem"). Given some characteristics of the network, namely the large number of actors usually involved and the interconnectedness of relationships, it is impossible for any actor to be aware of every problem that occurs.

Ford et al. (2003) considered that it was crucial for actors to develop the necessary skills to identify (at least) the most relevant problems that affect their own business or that of others. “Many problems exist that are unrecognised by those affected by them, or by others” (Ford and Havila, 2003, p. 4). Actors’ ability to recognise and evaluate problems depends on: their past experiences, position occupied in the network, relationships, uncertainties and abilities, limits of their knowledge and views held on their own and others’ problems (Ford and Havila, 2003). Regarding the recognition of a problem, actors may perceive that one actor has a specific difficulty in a particular area. However, the latter may fail to recognise it and hence does not possess the ability to choose whether he / she want to address the issue or not. On the other hand, actors that recognise the problem may exploit it to their own advantage. Once actors recognise a problem, they have the option to ignore it by simply not doing anything about it, or to address it by accepting that it exists. In the latter situation, they may either try to solve it or simply to try to blame others for the situation (Ford and Havila, 2003). To sum up, “all of the companies in a network will simultaneously recognise some problems, be unaware of others, ignore some and address others” (Ford and Havila, 2003, p.7). Thus, actors’ perceptions also play a key role in their capacity or willingness to identify theirs’ and others’ problems dimension. Also, the same problem can be expected to be understood differently by diverse actors. For example, a problem may be evaluated in a more narrowed or a wider perspective, in that it can be analysed by simply considering the actor or the relationship where it occurred or on the other hand by placing it in the context of the surrounding network (Ford and Havila, 2003).

2. Processes of the network

The processes of the network are about the dynamics, i.e. it is about the space between the ‘nodes’ and the relationships between the actors. Using the previously mentioned scheme suggested by Hakansson et al (1995a) to analyse the development effects of business relationships (p. 45), processes correspond to the relationship level of analysis and are about the network’s actor bonds, resource ties and activity links. The substance of relationships becomes visible through these three dimensions of the network: “the essence of the network function of business relationships is that as they arise they form a structure of actor bonds, activity links and resource ties where third parties are integrated” (Hakansson and Snehota, 1995a, p.41).

A considerable level of uncertainty and subjectivity underlies the identification of each of these dimensions, as well as the identification of the interdependencies between them. Actors’ “theories-in-use” or beliefs regarding the elements of the AAR Model (Hakansson

and Johanson, 1992), may be expected to condition how they see each of these dimensions of structure. Actors' understanding of what exists and of what is happening is based on these levels of analysis. In the following paragraphs these three dimensions of the structure of the network are considered:

a) Actor Bonds

As a consequence of actors' behaviour being restricted and simultaneously facilitated by the commitment, role and trust associated with existing relationships, actors are said to be bounded. In the Buyer-Seller Interaction Model (Hakansson, 1982), the atmosphere of a relationship was said to be defined by the power (Cook and Emerson, 1978, Emerson, 1962, Pfeffer, 1981, Pfeffer and Salancik, 1978, Hallen et al., 1991, Low, 1997, French and Raven, 1959), commitment (Gundlach et al., 1995, Hardwick and Ford, 1986), closeness (Ford, 1980, Nielson, 1998), trust (Nielson, 1998, Moorman et al., 1992), cooperation (Easton and Araújo, 1992, Anderson and Havila, 1993), expectation (Hedda, 1993, Gross et al., 1957, Katz and Kahn, 1966, Anderson and Havila, 1993) and understanding (Hallen and Sandstrom, 1991) that exists in the dyad or relationship. Actor bonds are defined by the extent to which each of these qualities can be found in a relationship (Hakansson, 1982, Sutton-Brady, 2000).

Actors may hold different perceptions for each bounding quality, depending on the actor or relation they are thinking about. Two actors involved in the same relationship may perceive completely distinct levels of power-dependence or trust (or any other dimension), in relation to each other and this probably affects the way they act and react (Ford and Thomas, 1995). Bonds are developed on the basis of the image each actor believes he / she holds in relation to the other members of the surrounding network, and it is associated with an expected role or behaviour. This image is probably a result of past interaction experiences or of the parties' expected beliefs about the counterparts (Ford and Thomas, 1995). As it is never possible for any actor to fully know their counterparts' resources, aspirations or problems, beliefs and trust which are developed on the basis of interaction are believed to play a crucial role in the establishment of mutual commitment.

b) Resource Ties

Each company holds a resource collection including technical and commercial resources, administrative know-how and tangible elements such as man-power, equipment, plant and knowledge. The resources that are transferred or transformed in the network may therefore assume distinct natures: human, informational, relational, financial, organisational, legal or physical (Hunt and Morgan, 1995). Individuals' "theories-in-use" also play an important role in the definition of these elements in their frameworks.

When involved in a relationship, a company ties its resources to its counterpart's (Hakansson and Snehota, 1995a). A relationship is a way for actors to get access to other actors' resources, as well as to combine resources with those of other actors, resulting in the production of new resources (Pfeffer and Salancik, 1978). The reasons why actors tie their resources may also be assessed differently by the involved parties. Considering the overall resource constellation, each resource tie can be perceived as either a source of constraint or one of opportunity, by each individual actor. The same resources may be expected to be perceived by the different actors in diverse ways.

*c) **Activity Links***

Activities may reflect either a transfer or a transformation of resources between actors (Hakansson and Johanson, 1992). Although activity links are intangible, Hakansson et al. (1995a) argued that it is possible to identify the impact they have on relationships, thus playing a fundamental role in the description, explanation and prediction of the effects and development of a business relationship. Each actor holds an internal activity structure; a certain way of performing and coordinating internal activities. Once the actor gets involved in a relationship, his activity structure has to be coordinated and probably adapted to the counterpart's activity structure, generating an activity linkage. On the other hand, because actors' internal activity structure is expected to evolve over time, the interaction activities between actors also have to be adjusted. Nonetheless, distinct actors may be expected to perceive both their internal activities as well as the actors' coordination actions in diverse ways. Distinct perceptions mean that there are different understandings of the roles actors are expected to play in the complex activity pattern of the network.

3. Positioning in the network

The position a particular actor occupies in the network may be determined by looking at the surrounding and co-existing web of actors, resource constellation and activity patterns and assessing what are the actor bonds, activity links and resource ties in which that particular actor is involved (Hakansson and Snehota, 1995a). When implementing a strategic action, by mobilising other actors and their resources, actors do so (even if unconsciously) as a way to achieve a better position.

Again, a strong subjectivity underpins this process, given that although actors usually have a perception of their positioning in the network, they do not know what theirs' or others' positioning 'objectively' is or may not even be aware of the existence of the network (Johanson and Mattsson, 1992). From a subjective perspective, positions held about the network result therefore from actors' interpretations, outcome of their beliefs and knowledge (Johanson and Mattsson, 1992). Actors' perceptions on positioning results from the subjective assessment they perform on the structure and processes of the surrounding network. Misconception concerning positioning (the company and others') may jeopardise a company's viability when strategic actions are developed on the basis of inadequate perceptions of the surrounding Network (Johanson and Mattsson, 1992).

Actors' perceptions thus play a key role in the definition of the elements of actors' networks and thus of their Network Pictures. For this reason, Ford et al. (2003) argued that instead of defending the creation of partnerships in which "overall mutuality of interest, appropriate attitudes and good management can overcome any problems of different assessments and aspirations [...], business relationships are perhaps better viewed as an *arena* in which numerous interaction-episodes are played out [...and...] driven by the separate assessments of a number of individuals in each of the participating companies" (Ford and Havila, 2003, p. 2).

Now that the three theoretically derived elements which were loosely used to collect empirical data have been described, the following section considers whether these three elements are the ones that can comprehensively best describe the structure of Network Pictures.

3.3.3 Empirically derived structure of Network Pictures

On preliminary analysis of the respondents' answers, regarding what their Network Pictures looked like using the suggested initial structure, some things came out clearer than others. One thing that emerged was that although scale and structure, processes and positioning were believed to sum up all elements of actors' views of their surroundings, they might not be the most appropriate to provide the construct of Network Pictures with a sound basis. To address this possibility, this preliminary analysis was complemented with a content analysis of a sample of collected data. The aim was to observe if the theoretically derived structure encapsulated all the aspects of Network Pictures or if there were any other aspect(s) that

ought to be considered. That is to say, in this research a more detailed set of dimensions for the construct was expected to be found.

With the content analysis, some very specific differences, regarding the interpretation of respondents' views of the world came through quite clearly, allowing for the identification of a more granulated set of dimensions to describe how people saw the surrounding network. These differences led to the empirical development of the construct of Network Pictures, with a more detailed way of understanding individuals' views of the world. Twenty-one Network Pictures Dimensions were identified and whilst some of the dimensions were expected to be found, others emerged naturally during the data collection and this introductory stage of data analysis; this was the result of a qualitative or ethnographic content analysis (Altheide, 1987). The previously suggested theoretically derived structure was dropped and replaced by this empirically derived one. The aggregation of the identified dimensions was believed to allow researchers to capture the views of the world held by particular business actors in a rich and comprehensive way.

Once the construct of Network Pictures was provided with a sound structure, it could then be used to interpret data. This use of the operationalised construct corresponded to the second stage of the method applied for developing Network Pictures as a research tool.

3.4 Second Stage: Using the Operationalised Research Tool

The operationalised tool was used to analyse data to see if the developed structure allowed for grasping business actors' views of the network in a rich and extensive way. It was employed to see whether diversity between individuals could be captured, and if other unexpected interesting findings emerged. If that was the case, Network Pictures could be said to be a useful and usable research tool in organisational networks. The testing was carried out at the individual, organisational and network levels.

Whilst Weick (1995) understood that the process through which individuals' frameworks were generated was the most important aspect of sense-making, this research project clearly focuses on the outcome of that process: actors' frameworks or views of the world¹¹. Nevertheless, those processes that underlie the generation of actors' views of the world are accepted as being potentially useful in this research for achieving an understanding of the

¹¹ In the previous chapter, it was highlighted that sense-making encompasses two aspects, namely the processes through which individuals frameworks are generated and the outcome of those processes or frameworks.

diversity that may be found between individuals and in different contexts. Some of the findings that may be expected to be found at the company and network level are discussed in the following sections. This discussion draws on empirical findings from the managerial and organisational cognitive field of research.

3.4.1 Views of the world held by business actors from the same company

Given that actors' views of the world are believed to be individual (Ford et al., 2002b, Henneberg et al., 2004a, Hedaa and Tornross, 1997), a multiplicity of views may be expected to coexist within the same organisation. An organisation is composed of a number of individuals and they may "pursue goals that are not identical and the interaction is subject to [their] perceptual and other behavioural limits" (Hakansson and Snehota, 1995a, p. 34). These different goals may condition the way they perceive the surrounding network.

Research developed in other fields of research, namely in the managerial and organisational cognitive field, has also pointed to the almost certain impossibility of finding a framework that is permanently shared by all members of an organisation. The focus of this field of research has relied on understanding "how organisation members model reality and how such models interact with behaviours" (Academy of Management, 2006). Authors from this field have been mostly trying to find out if it is possible for an organisation to function and for decisions to be made, without the existence of a totally shared framework. In the process of addressing this issue, they observed that factors such as power, politics, negotiation, arguments and interactions lead to the emergence of partly shared frameworks which are transitory (Langfield-Smith, 1992, Weick, 1979b, Weick and Bougon, 1986, Donellon et al., 1986, Berger and Luckmann, 1966, Sproull, 1981, Walsh and Fahey, 1986, Walsh et al., 1988). These authors pointed out that decision making could take place without the existence of a complete or extensive set of shared beliefs among a team's members. Moreover, they observed that although individuals hold subjective frameworks, in certain circumstances there might be a strong similarity between the frameworks held by individuals from the same company. Researchers in this field also argued that no matter how different the views held by individuals in an organisation are, there is always some commonality, as a result of that organisation's culture and sub-cultures (Schein, 1985, Finney and Mitroff, 1986, Louis, 1980, Morgan, 1986, Weick, 1995, Weick, 1979a, Langfield-Smith, 1992, Smircich, 1983, Simon, 1953, Sproull, 1981). These findings are mostly associated with the process through which

frameworks are generated, but they may be useful for understanding the diversity or commonality that may exist between views held by individuals from the same company.

Mattson (1985) suggested that managers responsible for different functions in a single company held different perceptions. As Hakansson et al put it, "In certain situations, it is thus clear that a company must be seen as a multi-actor" (Hakansson and Snehota, 1995a, p. 34). This issue was also addressed in the managerial and organisational cognitive field, when several researchers observed the frequent existence of sub-cultures within an organisation: groups that held specific interests and goals, that used a particular language, that interacted mostly with people from that particular group, and that potentially would have distinct perceptions from those held by other groups (Sproull, 1981, Langfield-Smith, 1992, Morgan, 1986).

A study that was conducted drawing on the IMP body of literature at the relational level, showed the within company multiplicity of perceptions. Ford and Thomas (1995) conducted a study to analyse actors' perceptions on the relationships established in the network. The study involved a supplier of automotive components as the focal company and three of its customers. This particular within company analysis included only two of these companies (a dyad between a supplier and a customer). They analysed how several members from each company perceived a somewhat minor technological change that involved all the companies concerned. They observed that different sets of perceptions and priorities emerged within each company; different individuals that performed different functions within each company had different things to say, in relation to the development of the technology change. The authors concluded that "views of a relationship at the company level are subject to change over time and that they vary between individual actors within the company" (Ford and Thomas, 1995, p.228). This research conducted at the dyadic level gives a hint for what may be expected to be found for each company.

Thus, individuals from the same organisation are not expected to hold the same view of the world. As such, a corporate Network Picture is not believed to exist; when interpreting respondents' views of the world, researchers are not expected to find the views held by all members from one organisation to be the same. However, given that these respondents will be working within the same company and thus belong to a group whose members, to some degree, share a number of values and beliefs, there may be some extent of commonality between those individuals' Network Pictures (Ford et al., 2003). Henneberg et al. (2004a) drew attention to this possibility, arguing that although views are individual, they are inter-subjectively generated. Also, according to Welch and Wilkinson (2002), an organisation's

‘schema’ “is the product of the interaction among the schemas of those individuals comprising it, i.e., schemas are co-produced within the organisation through the internal and external interactions of its members” (p. 33). Some inter-personal relationship processes take place, with more or less intensity, depending on the extent of commonality among individuals’ views. Hence, distinct views held by the distinct individuals within the same company may have some commonality “shared in its general form by the most (relevant) employees in a given [...] company” (Henneberg et al., 2004a, p. 10). Also, different levels of extent of commonality may be found in different companies [see Figure 7].

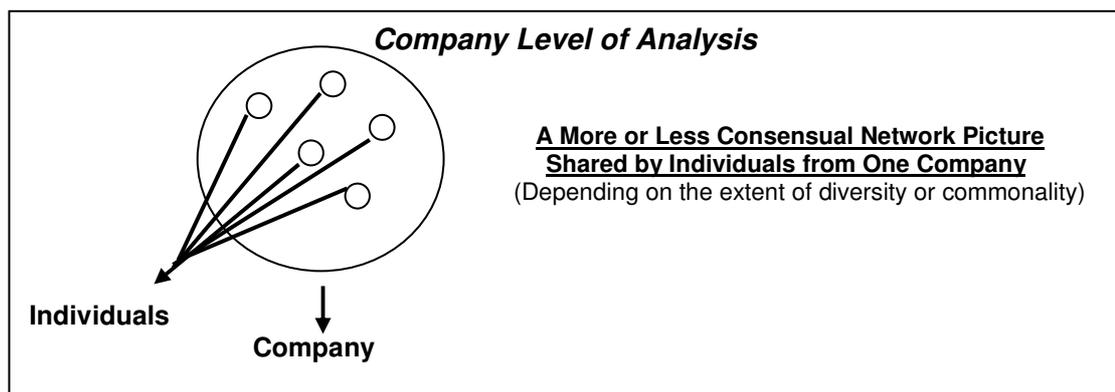


Figure 7 Comparing Network Pictures from the same company

However, given that a company’s action is believed to be guided by actors’ pictures, there must be a predominant perception of the world emanating from each organisation. Ford et al. (2003) claimed that “all companies have a unique network picture” and that for this reason “each will network differently” (p. 8). Hence, although actors’ views of the world are believed to be always individual, a company’s networking activities are the product of one apparent picture for the whole organisation (Ford, 2005). Moreover, in spite of being possible to objectively identify which companies are somehow connected to a specific organisation from a specific perspective, it is believed that it is based on a subjective generalised view of the position companies occupy in the network and of the network’s features that decisions are made (Ford et al., 2002b, Mattsson, 1985). This generalised or predominant view that is believed to exist does not correspond to a reification of the views held by individuals from that company. That is to say, it does not result from simply combining the distinct pictures held by the company’s several key relationship management individuals and the held views remain individual. In organisational network sense-making, there is no room for reification and thus Network Pictures are always individual¹².

¹² Holmen and Pederson (2003) carried out this reification when analysing companies’ Network Horizon by considering it “being similar to the ‘collection’ of the ‘Network Horizons’ of the employees who interact with counterparts” (p. 412). The authors identified one single Network

An organisation's predominant view may, as suggested in the managerial and organisational cognitive field of research, simply be a reflection of the company's internal relationships of power and dependence amongst individuals or functions (Walsh et al., 1988, Walsh and Fahey, 1986). E.g., the interests of a specific departmental function may prevail over other functions and thus members from the prevailing function may impose their will and view of the surroundings on others. These relationships may lead to the prevalence of certain individuals' pictures (Cook and Emerson, 1978). Alternatively, the company's apparent picture may be the result of a relatively consensual view of the network, that is originated by internal coordinating mechanisms that reduce potential within-company differences of how individuals perceive the network (Langfield-Smith, 1992). The predominant picture may also be associated with the company's culture and values which are shared by all members of the organisation (Schein, 1985, Morgan, 1986, Weick, 1995, Weick, 1979a, Smircich, 1983, Simon, 1953, Sproull, 1981).

Therefore, to understand an organisation's apparent picture it is necessary to look at its individuals' pictures and identify the company's internal dynamics which may be the source of the company's predominant view. Different companies may be expected to present diverse levels of commonality, as a result of having more or less powerful mechanisms to assure a consensual perspective of things and also owing to the degree of organisational culture sharing.

3.4.2 Views of the world held by business actors from different companies in the same organisational network

The findings from the managerial and organisational cognitive field that were presented in the previous section, may also be useful in helping to define what can be expected from an analysis conducted at the network level.

When analysed at the network level, actors' views of the world can be considered either at the individual or company level, given that a multiplicity of individuals and companies interact in the network. They may be expected to have different goals, interests and experiences. Thus, not only may a multiplicity of views be expected to coexist within the

Horizon for the entire company. The researchers simply included in the company's Network Horizon all the surrounding companies that were mentioned by at least one of the people interviewed. This researcher believes that this assumption leads to a weak definition of the concept of a network's horizon.

same company, as suggested in the previous section, this may also be the case within a network.

In the research conducted by Ford and Thomas (1995), the authors analysed three dyads and observed that in each dyad the involved companies held different perceptions about the developed relationship with their counterparts, as well as about their counterpart's ways of conducting business. They concluded that "it is clear in all three of the relationships that the two sides hold contrasting views of the motives, intentions or capabilities of their trading partner [...]. It would appear that none of the companies within the network can take for granted that other companies have a similar view of the world about them" (Ford and Thomas, 1995, p. 226). These findings reinforce the belief that different views are held in companies from the same network, reflecting diversity in the network.

However, by socially interacting with members from other companies, individuals integrate into their views the network aspects from other organisational cultures. "The actors (companies) have no common goals, but there exist some shared beliefs about the activity pattern as well as the resource constellation" (Hakansson and Snehota, 1995a, p. 40). Thus, the literature has pointed to the existence of some cultural values associated with the relationship context and with the network where companies develop their business activity. In a study conducted in the competitive group literature, Porac et al. (1989) observed the formation of "cognitive oligopolies". These oligopolies reflect the collective mental maps of the main competitors of an industry, resulting from a mutual enactment process which controls the flow of information in order to maintain the same beliefs. The encountered "common stereotypes" might also be a result of the increase of interactions and experiences among the network participants, which could then lead to something that resembles a "network culture". Over time, shared perceptions are generated and individual frameworks may lead to a socially reinforced view of the world (Porac et al., 1989, Berger and Luckmann, 1966), one that may reflect some form of 'common stereotyping' (Halinen and Salmi, 1999, Ford et al., 2002b).

Views held in a network may thus be expected to present some similarity [see Figure 8].

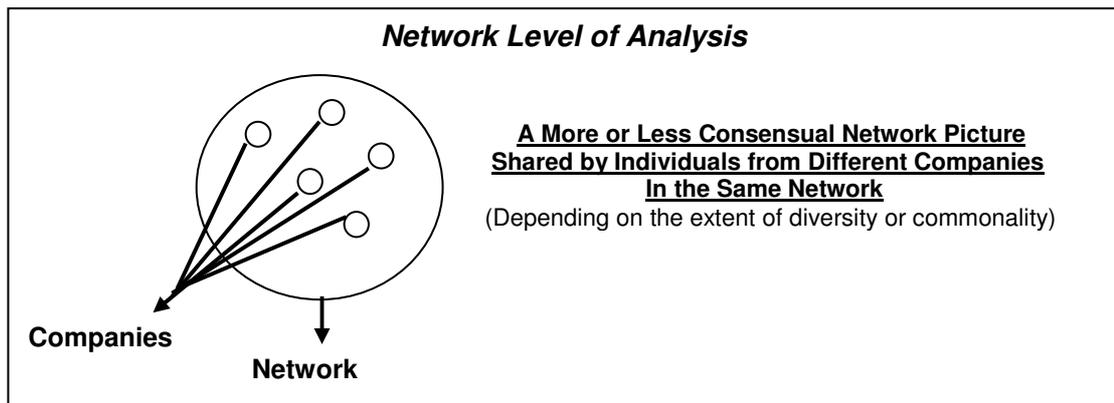


Figure 8 Comparing Network Pictures from the same network

The relevant literature has pointed to the need for the existence of a certain extent of shared beliefs in organisational networks, so that their functioning can be assured. It has also indicated that there have been (more or less conscious) efforts among companies to generate such shared beliefs, both at the dyadic and network levels. Welch and Wilkinson (2002) referred to the process of coordination between the views of the world held in different organisations as the *schema coupling*. This coupling reflects “the way the schemas of two organisations become interrelated and adapted to each other over time, in such a way as to be consistent with the ongoing relationship” (p. 33). These authors highlighted that this *schema coupling* is the result of companies’ desire to maintain compliance with the co-existent cognitions. At the relationship level these are reflected in the interaction experiences between relationship partners. Moreover, they argued through this between-company coordination, a coordination also takes place at the network level, reflecting that network’s “pattern of beliefs and values underlying network action and response” (Welch and Wilkinson, 2002, p. 33). This coordination may be the result of relationships of power and dependence between companies, which lead to the prevalence of certain individuals’ views (trying to persuade the counterparts to adopt a certain view or even imposing it), or more simply the result of a relatively consensual view regarding the surrounding network. It points to the potential existence of a network’s culture. Depending on the extent to which these patterns or beliefs are shared in each network, different networks may be expected to have diverse levels of commonality. Sometimes, there are ‘common stereotypes’ that are shared by most of the relevant actors (Halinen and Salmi, 1999, Ford et al., 2002b). These ‘common stereotypes’ may restrict the participants’ views of the network, reflecting what Weick (1979b) named ‘collective ignorance’.

Throughout this section, a series of speculations on the commonality or diversity at the company and network level of actors' views of the world were put forward. Because the research device developed in this project aims at providing researchers with a way to picture how actors see the world, it is accepted that the exposed diversity or commonality is an inherent feature of the Network Pictures tool. The empirical data analysis affords the opportunity to address the extent to which these speculations have some justification.

3.5 Conclusion

The chapter shows the reasons why a two-stage method is put into practice for developing Network Pictures as a research tool: after operationalising the construct, it is necessary to test it. Only then could the empirically derived structure be considered sound for researchers to be able to 'see' what are the pictures of the world held by business actors. Also, it establishes that although the research project focuses on the output of actors' sense-making processes, understanding these processes may be useful for capturing their views of the world.

The method used for developing Network Pictures as a research tool described in this chapter implies the need to carry out empirical research. In the following chapter the choices made regarding the empirical analysis' research method and design are presented and justified.

Chapter 4

4 Empirical Research Methodology and Design

4.1 Introduction

Researchers are able to corroborate or refute the conclusions of an investigation, once they have been exposed to the way the investigation was conducted and to the reasons underlying all methodological choices (Brito, 1999). According to Brito (1999), an appropriate methodological approach is something similar to a “seal of guarantee” for any scientific work. The set of interconnected decisions that have to be made when conducting an empirical research, were integrated by Easton (1995b) in a structured and hierarchical way in what the author defined as the ‘Research Process Framework’. This framework consisted of defining on a first level the research’s underlying philosophical assumptions, and then on a second and third level the methodology and the research methods to be applied, respectively. This framework was used in this research project.

The aim of this chapter is to describe and justify the main choices that were made regarding this project’s empirical research, as well as the processes the latter involved. It provides an explanation of how the empirical research progressed, as well as a preliminary discussion of what can be expected to achieve by it.

In Section 4.2 this project’s empirical research strategy and methodology are discussed and in Section 4.3 all choices with regards to its research design are justified. Section 4.4 contains some conclusions for this chapter.

4.2 Empirical Research Strategy and Methodology

The choice of case-study research as the methodology to conduct the empirical analysis was the result of the project’s philosophical assumptions. It was also the result of other research determinants, namely the project’s research goal, content and context. In its turn, this methodological choice conditioned other elements of the overall empirical research strategy. These aspects are discussed in the following sections.

4.2.1 Social constructionist approach and methodological choices

In order to produce knowledge, a social science researcher must unravel the subliminal philosophy underpinning the process by which the knowledge will be created (Hudson and

Ozanne, 1988). Research must take into consideration, not only practical issues, but also philosophical assumptions (Easton, 1995b, p. 32) and these embody specific axiological, ontological and epistemological philosophies. The beliefs that a researcher, consciously or not, embodies in his/her work also have a direct impact in the overall research process and on the research interpretation and outputs (Easton, 1995b). Moreover, the philosophies frequently associated with a field of research are relevant because they reflect a certain tradition followed by the researchers.

The core aim of this research project consisted of developing the research tool of Network Pictures, a research tool that is a device to be used by researchers or managers to make sense of organisational actors' views of their surroundings (see Chapter 2, section 2.3.2). In Chapter 2 (see section 2.2.2.2), a social constructionist approach was identified as underpinning organisational actors' sense-making processes and their approach to 'reality'. According to this ontological approach, "'reality' is not objective and exterior, but is socially constructed and given meaning by people" (Easterby-Smith et al., 2003, p. 29). As a result of organisational actors' underpinning ontology and epistemology and of the main aim of this research project, a social constructionist and inductive approaches underpin this research project (Guba and Lincoln, 2000, Schwandt, 2000). The adopted approaches were also considered to be congruent with the philosophical assumptions traditionally associated with Industrial Network Approach research.

The social constructionist approach undertaken by this researcher is congruent with the research project's guidelines, in the sense that the research tool that was developed did not consist or aim to "gather facts and measure how often certain patterns occur, but to appreciate the different constructions and meanings that people place upon their experience" (Easterby-Smith et al., 2003, p. 30). The social constructionist approach integrates a broad range of research methods, but in most situations case-study research has been the method selected. Case-study research has also been the research method most commonly used in those studies conducted undertaking the Industrial Network Approach (Henders, 1992). As a consequence of these two facts and considering the aim of this research project, case-study research was chosen as the most appropriate methodology. However, a research project's ontological and epistemological underpinning philosophies are not enough to justify a methodological choice. Other factors, namely the project's research determinants, need to be looked at and only then can methodological choices be made.

4.2.2 Research determinants and methodological choices

The project's research aim, content and context, which Brito (1996) defined as research determinants, led to the immediate elimination of all methodologies based on statistical inference. Moreover, it resulted in the selection of a methodology which aimed not at making generalisations but instead at enriching the understanding of real-life phenomena. The project's descriptive and exploratory nature alluded to case-study research being the most appropriate methodology.

. The Research Project's Aim

The aims of a research project condition all methodological decisions regarding the nature of data to be collected, sampling characteristics and research methodology (Brito, 1996). The review of the existing literature resulted in the identification of this project's research problem (Yin, 1994):

- . Research Problem: *Can the diverse views of the world held by organisational actors be translated into a research device that allows researchers to 'see' what those pictures are?*

The aim was thus to investigate whether Network Pictures could be a usable and useful research tool for carrying out research in organisational networks. A literature review of several bodies of research, namely Industrial Network Approach theory, Sense-Making Theory and Strategic Management Theory, assisted in the operationalising of the research problem and aim into the following research questions:

- . Research Question 1 - *What is the structure of Network Pictures as a research device?*
- . Research Question 2 - *What is the result of using Network Pictures as a research device?*
- . Research Question 3 - *What do Network Pictures look like?*
- . Research Question 4 - *Do Network Pictures allow for the identification of diversity between individuals' views of the world and between different network contexts and moreover do they allow for the capturing of other interesting phenomena?*

This research project was set out to operationalise Network Pictures and then to test that developed structure for the theoretical construct in different contexts. One question that may be raised is: how was it possible to assure that the created Network Pictures represented an accurate and complete representation of individuals' views of the world? In reality, no one can be sure of their accuracy or completeness. However, as long as the tool allows for the gathering of data about what actors generally consider important in the network and if it shows differences in views when used in different situations, then it can be said to be usable and useful.

In addition to helping to clarify and specify what the research project aimed to achieve, the definition of the research questions also had some (direct and indirect) impact on the methodological choices (Brito, 1996):

1. The content of the defined research questions restricted the issues related to the project's research aim to a confined set of subjects: a) Network Pictures dimensions and b) the result of using Network Pictures to investigate organisational networks. The research questions' content also conditioned sampling related issues, in the sense that the questions defined the nature of the actors that were to be inquired about: individual actors who held a decisive role in the interaction process between companies (e.g. directors).

2. The way the research questions were expressed influenced some methodological choices. Given the way they were formulated, the nature of the conducted study could be classified as having mainly a descriptive and exploratory nature (Yin, 1993, Yin, 1994). This nature pointed to the selection of case-study research as the most appropriate research method (Yin, 1993, Yin, 1994). Some authors have claimed that case-study research is especially useful for studies of a nature similar to that of this research project, where little is known about the subject that is being analysed, reflecting the methodology's exploratory and inductive form: it allows for the collection of relevant facts, the analysis of phenomena from different points of view and defines boundaries (Easton, 1995b).

. The Research Project's Content

Some researchers consider the content of a research project as the only or main determinant for all methodological choices. This research project's primary aim is to develop Network Pictures as a research tool, drawing on the Industrial Network approach. Yin (1994) defined case-study research as "an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident" (p. 13), allowing it to "retain the holistic and meaningful

characteristics of real-life events” (p. 13). Given the content of this research project and the definition given by Yin for case-study research, this methodology was considered appropriate for conducting the empirical analysis.

. The Research Project’s Context

As mentioned above, this research draws on a body of literature originating amongst academics from the Swedish School of thought: the Industrial Network Approach. Some of the features of organisational networks are considered to strongly condition methodological choices and ought to be considered when research is being developed on such phenomena. These features are as follows: Industrial Networks’ interconnectedness, interdisciplinary nature, complexity and importance of the time factor (Easton, 1995b).

Networks’ interconnectedness, and the consequent assumption that there is one single network in the world that interconnects all actors (Easton, 1995b, Easton and Araújo, 1992), led to the need to carry out sampling of some nature and it raised questions of representativeness associated with the impossibility of applying theories of statistical inference. In this research project, and given this interconnectedness, when sampling the network the aim was not to achieve a generalisation of findings, but instead to understand particular situations. This was associated with the project’s social constructionist nature. Hence, there was no concern with the possibility of applying theories of statistic inference or with issues of representativeness. The sampling units comprised networks and not solely dyads or focal actors, and the number of actors included for each network did not take into consideration issues of representativeness.

Given a network’s interdisciplinary nature, and consequent problems associated with establishing a connection between organisational networks’ underlying aspects and the principles from a range of different areas that networks draw on (e.g. social science, economics and technology) (Easton, 1995b), there was a need for an in-depth analysis and a definition of the sort of knowledge the research project intended to achieve. The main focus relied on the social dimension, but the economic and technological aspects also played quite an important role.

More than trying to integrate organisational networks’ underlying complexity into the project, one that results from organisational network’s connectedness, multiplicity of involved elements, relevance of positioning and of the dynamism associated to relationships, the aim was to develop a tool that allowed for an understanding of how actors saw this complexity. Actors were not chosen in the sampling process for considering more or less complexity in

the network, but instead they were chosen randomly within certain selection patterns that will be described below. The only thing was possible (and that was intended to be done) was to compare the extent of complexity that each individual could see or chose to see. This strategy was consistent with the research aim.

Finally, regarding the importance of the time factor in organisational networks and in lieu of the fact that the unit of analysis (individuals' Network Pictures) is dynamic by nature, it would be desirable to build this into the research. That is to say, a longitudinal study would allow for an assessment of how and if individuals' views changed over time. Moreover, addressing the potential relation between actors' views of the world and Networking would also input a level of dynamism into the research project. However, as a result of the temporal and financial restrictions of this PhD project, a study of this nature was unviable.

4.2.3 Case-study research

In light of the above discussion, case-study research was identified as the most appropriate methodology for carrying out the empirical study. Woodside and Wilson's (2003) broadly defined case-study research as "inquiry focusing on describing, understanding, predicting, and/or controlling the individual (i.e. process, animal, person, household, organisation, group, industry, culture or nationality)" (p. 493). The definition given by Yin (1994) also includes organisational and managerial processes as potential objects for this methodology, but it is not as broad as that given by the former authors. Its main aim consists of the deep understanding of processes and other concept variables, the "understanding of the actors, interactions, sentiments, and behaviours occurring for a specific process through time" (Woodside and Wilson, 2003, p. 497). A "thick description" of the case (Geertz, 1973), i.e. one that is rich and detailed, is thus not enough and instead what is required is the understanding of the subjective significance of persons and events involved in a case-study, as well as the grasping of the relation that exists between its concept variables. The possibility of disentangling complex sets of relations is one of the main features of case-study research, as is the aim of this study. Case-studies' holistic nature was also an attractive feature for choosing it for this project. According to Good & Hatt (1952) they organise and analyse the collected information in such a way that the social reality that is being analysed is kept as a unit. The object of a case-study is always a social entity (Hakim, 1987).

Moreover, case-study research is believed to be especially useful for conducting *Business-to-Business Marketing* related research (Woodside and Wilson, 2003), as most research in this field concerns people's thinking-doing processes: the individuals' and groups' decisions and

behaviours, within or between organisations (Westgren and Zering, 1998). This methodology is also considered as being the most appropriate within the Industrial Network Approach. Easton (1995b) justified this appropriateness in that given networks' high interconnectedness, it implies that there is a need to analyse several nets and respective actors and the case-study approach allows for this. The choice was thus consistent with the IMP Group research tradition, which over the years has carried out several in-depth (and mostly descriptive) case-studies of business relations and networks (Easton, 1995b). Welch et al. (2002) also suggested that in-depth case studies may be useful to conduct research on actors' sense-making frameworks, highlighting how previous IMP Group case studies have not devoted much attention to actors' ideas or subjective views.

As a consequence of the nature of the research problem and because the project's main aim was "to uncover and understand what lies behind [...a...] phenomenon about which little is yet known" (Strauss and Corbin, 1990, p.19), a qualitative research was carried out. Moreover, there has also been a consistent usage of qualitative data amongst IMP researchers to capture the richness of the observed phenomena.

4.3 Research Design

The definition of the research design is of crucial importance, because it is a guideline for the collection, analysis and interpretation of observations, "the logic that links the data to be collected (and the conclusions to be drawn) to the initial questions of a study" (Yin, 1994, p. 18). The extent of generalisation of the research findings to other situations is also defined with the research design (Nashmisa and Nachmias, 1999). Throughout this section, the decisions regarding the definition of the unit of analysis, selection of case-study design, and also the selection (sampling), collection and analysis of data are discussed.

One important consideration as a result of choosing case-study research as the methodology is that the research designing needs to be particularly meticulous, so that its robustness and scientific truth are not in doubt (Eisenhardt, 1991, Westgren and Zering, 1998). If these precautions are not put into practice, there is a danger of researcher prejudice being incorporated into the methodology and the research outcome being worthless (Yin, 1994). Because this was social constructionist and inductive research, there was a continuously evolving research design which was constantly adapted to best suit the research context, which in turn was also constantly evolving (Hudson and Ozanne, 1988). The research was thus an emergent process in view of the fact that there was an attempt to describe realities

that were time and context specific, and not previously known. Nevertheless, “in practice, it is difficult to carry out an inductive process without being influenced by the nature and purpose of the analysis; by some pre-theoretical notions of what the “important” dimensions are likely to be” (Easton et al., 2003, p. 531). Hence, this project’s researcher held some degree of pre-understanding of the phenomena before integrating the context that was going to be researched. However, given organisational networks’ dynamic nature and associated perceptions, this pre-conceived knowledge was not enough to appropriately establish a fixed research design, a procedure traditionally associated with positivist research. In positivist research, the research process follows a scientific protocol and a fixed structure (design and hypothesis). In this case, the ideal is to have a fixed controlled experiment, since it allows for the identification of causal relationships between variables. The coherence between the protocol and the research process is translated into the achievement of “accurate answers” to the research question (Easton, 1995b).

For this research project it was merely possible to pre-establish a general plan, which had to be flexible and open so that it could be adapted to the new information provided by respondents. This social constructionist approach to research reflected some of its philosophical basic assumptions: understanding can only be achieved through the use of the human instrument and a socially-constructed reality cannot have a preconceived plan of research (Hudson et al., 1988).

4.3.1 Units and levels of analysis

The definition of a research project’s unit of analysis is considered a key aspect of the research design. Yin (1993) argued that “no issue is more important than defining the unit of analysis”. The unit of analysis is what the researcher is going to look at. By defining the unit of analysis, the boundaries of the study and consequently the limits to data collection and the way research questions are formulated is determined. This project’s research problem relied on investigating whether actors’ views of the world could be translated into a usable and useful research tool. As these views were held by individuals, they were defined as the primary unit of analysis.

In view of the fact that there was also the aim of seeing if Network Pictures allowed for the capturing of diversity between individuals in different contexts, the research included several levels of analysis: the individual level, the company level and the network level. This allowed for some potential implications of the theoretical construct of Network Pictures to be addressed. Because Network Pictures were believed to be held by individuals, most of the

time the analysis was conducted at the individual level. Nevertheless, the analysis was also conducted at the company and network level, essentially to address the issues of commonality and diversity.

4.3.2 Case-study research design

The decision to include more than one case-study in any analysis can never be justified as an attempt to increase sample size in the conventional statistical sense, given that, as mentioned above, case-study research methodology does not allow for statistical inference. That is to say, cases are not chosen as representative samples of the total universe, but so as to gather information that is interesting, rich and detailed (Easton, 1995b). They are therefore used to “expand and generalise theories (analytic generalisation) and not to enumerate frequencies (statistical generalisation)” (Yin, 1994, p. 10). The plausibility of this methodology’s sampling technique has its foundation in two factors (Easton, 1995): 1) although they integrate several variables, case-studies’ measurability or replications are low, reflecting a lower level of demand on the theory and having only to fit the facts in the particular case-study; and 2) the richness of the data included in case-studies allows for a process of explanation building (Yin, 1994), that is a “depth-detailed” identification of existent relationships between the facts that build up the theory.

4.3.2.1 Multiple case-study research

Yin (1994) argued that a single case-study research design is only appropriate if the case is unusual, rare, critical or revelatory. For this research, neither of the case-studies chosen appeared to possess these features and hence a multiple approach was chosen. Moreover, because multiple case-study design allows for the achievement of theoretical replication and is considered more robust than a single case, this method was applied.

The selection of a multiple-case design and of each particular case has to reflect the scope of the conducted research and each selected case has to serve an explicit purpose for the research (Yin, 1993, Yin, 1994). In this research project, each case-study corresponded to the network of companies that were somehow interconnected.

By including more than one network in the empirical analysis, it was also possible to compare findings from each network, thus addressing the relevance of situational factors in Network Pictures’ diversity or commonality. A multiple case-study was therefore selected

also to assess the role played by particular contexts or situations in individuals' Network Pictures.

4.3.2.2 Two case-studies

The number of selected cases did not reflect, in any way, a sampling logic, but the number of intended case replications. The main objective of this project did not rely on proving that previous and rival theories were not the most appropriate, but instead to give the first steps to understand the research phenomenon in the light of the Industrial Network Approach. Thus, there was no major necessity for achieving an extensive number of replications and only two cases were included. Additionally, as mentioned above, because this is a PhD research project there were strict temporal and financial constraints to be considered. Also, including more case-studies would probably restrict the possibility of conducting an analysis in such depth. And finally, given the rich and interesting data associated with each of the two selected cases, it was not believed that by including more case studies a greater understanding of the phenomenon would be achieved. The reasons why the two particular networks were selected and the particularities of each selected network will be addressed in the following section where all sampling decisions are justified.

4.3.3 Sampling

Resulting from organisational networks' interconnectedness, there was a need to restrict the empirical analysis to a specific part of the global network and two networks were selected to be part of the empirical research. The features of the selected networks, as well as the process through which the companies and the individuals that were included in each network were selected, are now addressed.

4.3.3.1 Selected cases

Each selected case corresponded to a network of companies, companies which were somehow interconnected and associated with a specific situation. The two particular networks were selected for the following reasons. To begin with, they were expected to present quite distinct and interesting features. These would potentially allow for comparing and contrasting the findings from each network and for an assessment of the extent to which those features affected individuals' views. Moreover, the researcher was given some privileged access to some of the companies included in each selected network, thus facilitating the data collection process. The selected networks fulfilled what Brito (1999) considered the two basic

requirements for a selection of this nature. He argued that each selected network must have the appropriate characteristics with respect to the defined research questions (i.e. appropriateness), and also for practical reasons it must not present any difficulties with regards to confidentiality or access (i.e. accessibility).

The criterion of relational exchange features (Lambe et al., 2000) was used with the aim of finding two distinct networks [see Chapter 2, Section 2.2.3.2]. Firstly, one network that had an interesting organisational feature was identified, that is to say, a hole-through-the-wall production and delivery system [see below]. This situation was named by this researcher the '*Product Network*' (Case 1). This situation was associated with a long-term and high relational exchange situation, a form of *Enduring Exchange* (Lambe et al., 2000). Once the first network was selected, the second was identified. The main condition was that it should be expected to have very distinct relational features to the former network. Several possible networks were analysed and the one that was chosen was the one that appeared to have the most different exchange relational features as compared to the first selected network. The second selected situation corresponded to the development and execution of a project and was named by this researcher the '*Project Network*' (Case 2). This was associated with what Lambe et al. (2000) identified as *Interimistic Exchange*, a form of short-term and low relational exchange. These two very distinct cases were included in the empirical analysis, not with the aim of looking at the cases *per se* but instead to consider distinct contexts and relate them to the construct of Network Pictures.

1. The 'Product Network'

Here the '*Product Network*' is described. The first part introduces the hole-through-the-wall situation. Then there is a brief account of the sector and of the nature of those companies that were selected to be included in this network. This is followed by a description of what were considered the most relevant features of one of the companies included in this network, i.e. Logoplaste Group.

.Hole-Through-the-Wall Production and Delivering System

According to this system, the supplier is present with his own machinery and personnel at the client's *house* for a (usually) long period of time. The production and delivering thus takes place within the client's facilities, corresponding to what is known as *in-house* or *integrated outsourcing*. The *in house* plants usually have a local management, being responsible for the management of the raw materials, machinery maintenance and production process, but share with other units the central services, support and R&D that are provided by the headquarters. The usually long term agreements that are established between the supplier and buyer are a

consequence of the high and tailored investments in machinery and equipment that are made for single-client units. There is usually a tight collaboration between the technical and technological areas of supplier and client, as well as joint planning between supplier and client to assure a *just-in-time* delivery that is made directly to the point in the production line where it is required¹³; there is also commonly an improved quality and communication between supplier and buyer. Instead of a normal supplier-buyer relationship, the involved parties claim to be involved in what appears to be a *partnership* situation where there is usually a high stability and very close relationships. This is expected to lead to very particular relationship features between supplier and buyer.

From a time perspective, this situation corresponds to the most relational part of the relationship exchange continuum [see Chapter 2, Section 2.2.3.2]. Bearing in mind Lambe et al.'s (2000) belief that time plays an important role for relationship-building interactions, in this situation there is more time available for more interactions to take place and more opportunities for relationship building, than in a *normal* relationship where the client is supplied from outside his facilities. The high adaptation and investments carried out at the beginning constitute a strong impulse for trust building, and previous experiences of the supplier in other *in plant* solutions may assume a central role as a substitute of trust. Because interdependence is obtained throughout several relationship stages as the parties invest in the relationship and establish common achievable goals, the *in plant* situation may be expected to be associated with a high level of interdependence between the parties. Furthermore, as a consequence of the intensive information exchange and the expected long length of relationships, there is a strong possibility of relational norms emerging naturally (i.e. implicit or tacit norms).

. Selected Sector: Plastics

For this case, the choice was based on a network of companies which were connected to the production of plastic containers in the Portuguese territory. The reasons for selecting this sector were outlined in the previous section and to reiterate, one of these was because of the interesting hole-through-the-wall production and delivering system that was being used. This practice has been increasing in this sector and one of the included companies was even the European pioneer of this system.

¹³ E.g. in the rigid plastic containers activity, the plastic bottles are delivered directly into the machinery that does the filling of the bottles (with the partner's product); the suppliers' dedicated units are located next to the partners' filling equipment.

In the ‘*Product Network*’, producers of plastic containers, as well as their suppliers and clients were included [see Fig 9]. All of these companies developed their main business activity in Portugal. This restriction was imposed for reasons of practicality mentioned previously. The initial plan was to include solely companies connected to rigid plastic containers but this network was extended to some companies connected to flexible plastic containers and films. The process through which companies were selected is further discussed in Section 4.3.3.2.

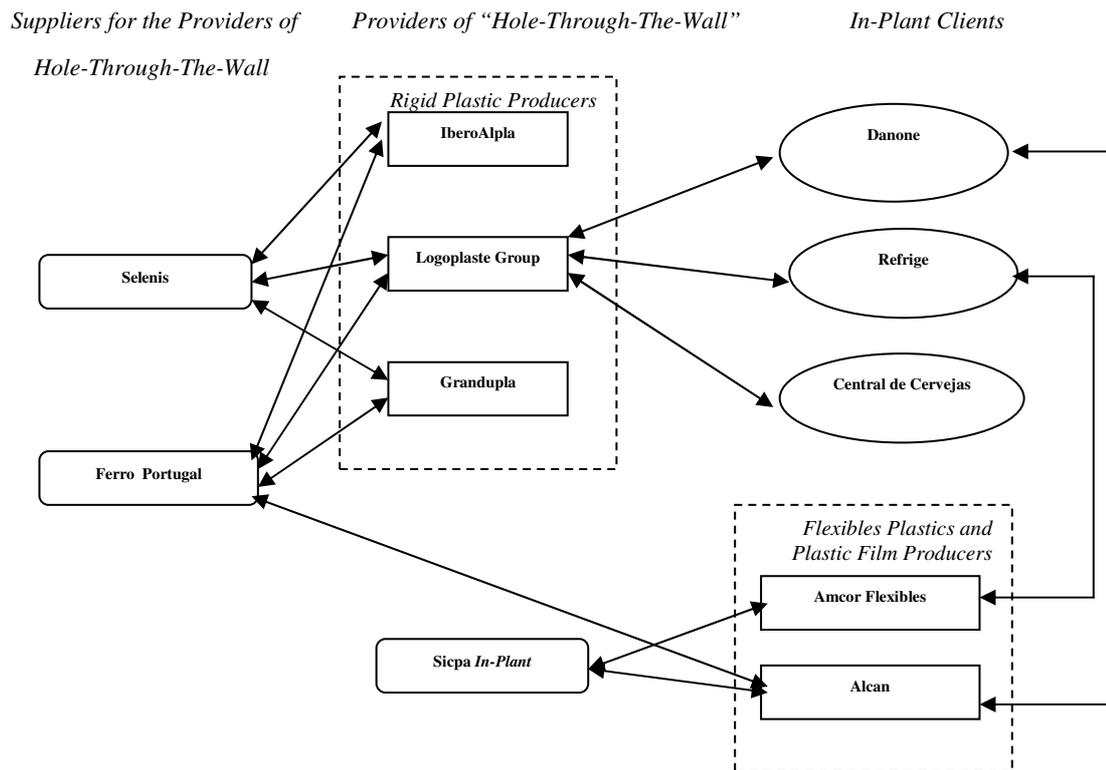


Figure 9 Companies and direct relationships included in Case Study 1– the ‘*Product Network*’

. Logoplaste Group S.A.

This was one of the companies included by this researcher in the ‘*Product Network*’. Two reasons justify why there is a detailed analysis for this company and not for the remaining ones. To begin with, in Chapter 6 and 7 there is an in-depth analysis of Network Pictures at the individual and company level and both are related to Logoplaste Group. Furthermore, this company was considered by this researcher to represent a rich source of data for further understanding the *in plant* system.

Logoplaste Group initiated business activity in the late seventies with a business model that relied on the production of rigid plastic containers solely in totally tailored and *in house* units. This model has proven to be very successful for this group, given that it achieved a position

amongst the top three most successful European producers of rigid plastic containers and in Portugal it has the leadership for this particular business. The group was the European pioneer of the hole-through-the-wall strategy.

This company thus has a considerable curriculum in the practice of hole-through-the-wall, one that its members are aware of and that potential clients recognise and appreciate. Additionally, the Group carries the 'flag' of never having had a client requesting to cancel a contract under normal circumstances. Moreover, it draws on an innovative formula which became possible due to its cumulative technical experience as well as its positive and continuously improving experience with multinational clients. Furthermore, although it is traditionally family owned, the company presents features that are not typically associated with a family based business, i.e. its staff have a highly professional profile and the group has a primarily technological and R&D orientation. For the reasons presented here, the group currently markets itself to its potential clients by showcasing its expertise in *in house* applications, in addition to that as a technical consultant, offering to its clients a *one-stop-shop* for their packaging development with the creation, production, delivering and after-sales services. It also presents itself as being a company that looks for high-end applications, offering quality, service, new ideas or new technology, trying to disseminate the idea that it is a reliable and responsible supplier.

The relationships that Logoplaste Group has with its clients can be said to have two stages. In the first stage the solution is developed, reflecting a creative and tailored made process. Then, in a second stage, the solution that was previously developed is provided and becomes almost a commodity; but not completely so, since the company claims to continue to innovate and solve problems and simultaneously look for cost efficiencies and saving. Some clients give more importance to cost efficiency, whilst others give major importance to innovation and integration of technological novelties. No matter what the clients' priority is, Logoplaste Group always presents itself as a problem solver, customised solution and service provider. It tries to give to its clients what they are looking for, either by optimising the industrial concept or by improving efficiencies with the integration of new technologies.

Several features distinguish Logoplaste from its competitors. For example, whilst the latter are usually the result of fusion or acquisition processes, Logoplaste has been from the beginning, a family owned company in which growth is exclusively organic. Moreover, it is the only rigid plastic containers producer in Portugal that has solely a hole-through-the-wall strategy, choosing not to have a multi-client approach. Logoplaste has an 'open book accounting' policy which allows their partners to know the price of raw materials as well as

their oscillations. Additionally, its clients are allowed to see the entire production process which prevents Logoplaste from claiming a higher complexity in the process that would allow them to claim higher prices. Also, the company looks for clients that may be interested in what they call *Logoplaste's total service*: the implementation of integrated units on a medium or long term time span, with a team exclusively dedicated to the development of prototypes and industrial production of plastic containers, which allows them to fully assure continuous improvements with its partners. The company claims that it is mainly this technology and client oriented policy that differentiates it from all other major players in this sector.

For all the reasons presented above, the company's members may appear to be "arrogant" or to come across as being very confident. This is a result of these members having the perception that they are in a good position to offer what their potential and current clients look for in a packaging supplier.

One other important feature of this company that is important to point out is that the relationships between Logoplaste Group and its suppliers are considered crucial. The company's competitiveness is believed to be highly dependent on its capacity to negotiate with suppliers and to get lower prices and good quality. Since the plastic containers are nowadays considered a commodity, the price issue usually has a very strong impact on the potential partners' final decision. Suppliers are also expected to develop a joint effort for looking for cost efficiencies, as well as being able to adapt their offer, be flexible and willing to solve potential problems. The nature of the product that is supplied by Logoplaste, as well as the production and delivering system it adopted implies constant adjustments in the included materials and equipments.

2. The 'Project Network'

A thumbnail sketch of the '*Project Network*' is presented here. There is a summarised description of a project situation, followed by an indication of the nature of the companies that were selected for this case. This presentation finishes with a brief outline of the features of one of the companies included in this network, features that were found to be relevant for the analysis carried out in Chapter 9.

.Project Situation

What typically happens in a project situation is for a group of companies to get together for a (usually) short period of time, with the sole purpose of delivering or having delivered one

final product or service. Moreover, once the project is finished or once the contribution of each specific actor is complete, each company goes back to their *normal* activity or may get involved in other projects with the same companies as before or others¹⁴. Contractors are thus constrained by time, cost and quality (Cova and Hoskins, 1997). This fact confers this form of *Interimistic Exchange* with high complexity and it may be expected that it presents several distinctive features from those that may be expected to be found in a long-term relationship.

To begin with, in a project situation, the existence of long-term business relations can not be taken for granted (Cova and Salle, 2000), with contractors having to deal with situations of discontinuity in relationship with clients (Cova and Hoskins, 1997, Cova et al., 1994, Cova et al., 1996, Cova and Salle, 2000). The length of transactions and frequency of contacts between the parties are expected to be considerably low, and thus there is no place for an increasing interdependence between the involved parties (Cova et al., 1994, Cova and Hoskins, 1997). Also, there is less time for trust to evolve than in a long-term relationship. To overcome the time constraint, the parties are believed to extensively and commonly rely on prior exchange relationship interactions, on the parties' reputation for fair dealing, as well as on those relationship-specific investments that are made in the early stages of the relationship (Lambe et al., 2000).

Also, it may be expected that on both the client's and the contractor's side, a large number of actors are involved in its definition and execution (Cova et al., 1994). This adds complexity to the project and implies a commonly complex coordination of the activities between companies. On the client's side, there may be stakeholders, regulatory bodies, government departments and other, whilst on the contractor's side there may be consultants, sub-contractors and other.

One other relevant feature is every project's expected particularity (Cova and Hoskins, 1997). There is no place for a standardised offer since there is not a standardised demand and as a result, it is almost impossible to anticipate opportunities, leading to a considerable uncertainty on the contractors' side (Cova et al., 1994). Furthermore, a project usually involves considerable specific investment by the involved parties (Cova et al., 1994). Preparing a proposal, winning it and executing the project, usually implies a considerable investment of resources on the contractor's side.

¹⁴ It may also happen that both parties continue to be involved after a particular project, in the case that there is more than one project aligned or in the case that there are plans for supplying or being supplied with equipments or other after the project has been concluded.

One final interesting feature is that given the particularity, as well as the possible absence of pre-existing relationships, the value of the contract, the difficulty in predicting cost and the high uncertainty associated to projects, there is likely to be a high degree of formalisation associated with a project's negotiation and execution process (Cova et al., 1994). Relational norms or the expectations about the other party's behaviour, emerge during several stages of the relationship development period (Dwyer et al., 1987, Hakansson, 1982, Wilson, 1995) and interaction leads to the materialisation of relational norms which can be more or less tacit (Dwyer et al., 1987). However, since the relations involved in a project situation are usually short-term, there is not enough time for mutual relational norms to emerge. One of the solutions that the parties may implement is the one presented here i.e. that of relying on explicit norms that are established by the contractual terms. This formalisation can be observed mostly in public markets where inclusively, such as the interaction between sellers and buyers during the bidding stage is prohibited by the law applicable to these markets (Cova et al., 1994). Moreover, as a result of the likely complexity and the usual length constraints that make difficult the development of interdependency between the involved parties, the negotiated contracts may be expected to be as comprehensive as possible.

.The Selected Context: Metro do Porto

For this case, the network of companies involved in a project related to the transportation sector was included: the Porto Metro Project. The Porto Metro Project was associated with the conception, construction and operation of a Metro system in the Portuguese city of Porto, as part of this city's urban and local transportation services. The project involved complex and difficult relations between the public and private sector. When the data was collected for this case, the first stage of execution of the project was about to finish and its operation was already underway.

Included in this network were: the sole client of the project, two consortia of companies and some of the companies that belonged to these consortia [see Fig 10]. All included companies were therefore directly associated with this project that was taking place in Portugal, and also directly with the consortium of companies that played the role of sole supplier for the project's client. There was one company that, although not formally part of the supplying consortium, had a *back-to-back agreement* with one of the companies that were part of that consortium [i.e. Efacec]. For further reading on the process through which companies were selected see 4.3.3.2.

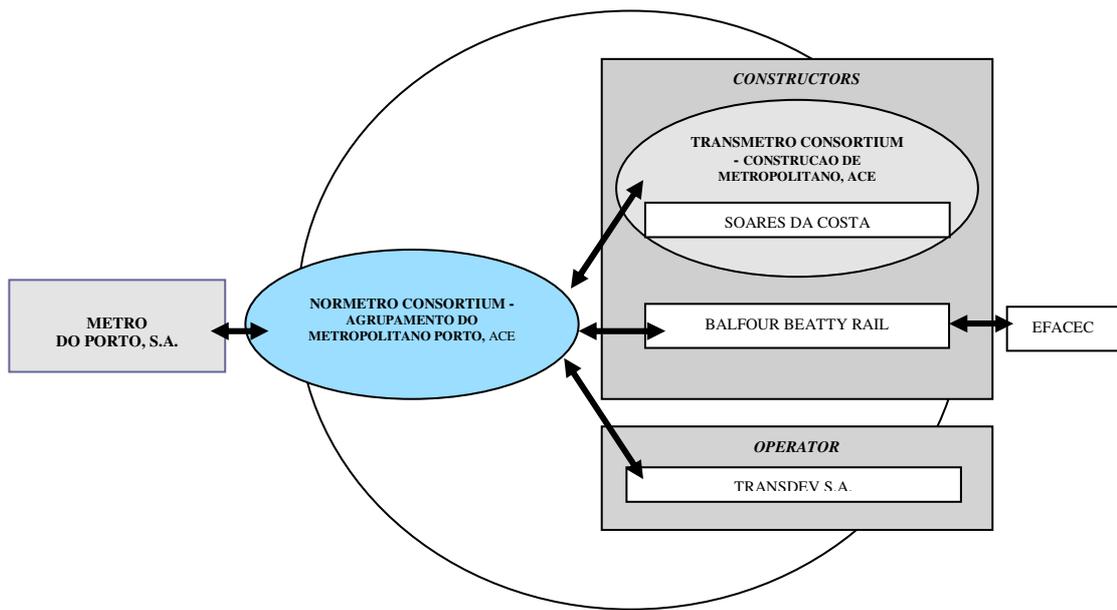


Figure 10 Companies and direct relationships included in Case Study 2 – the ‘Project Network’

.Normetro Consortium A.C.E.

There is one key reason why there is a description of the features of this consortium in this thesis and why there is not one for any of the other companies. This being that this researcher considered that Normetro Consortium A.C.E. as the essential actor for the ‘Project Network’ because apart from being the sole intermediary between all companies directly involved in the project and the client Metro do Porto, it integrated all the other companies that were included in this network.

Metro do Porto S.A., the project’s sole client, was incorporated in 1993 with the aim of developing the first light rail network system for the Metropolitan Area of Porto. The Normetro Consortium A.C.E. was created in 1996 with the specific purpose of running for the conception, construction and operation of Porto Metro - Phase M1. The consortium was awarded with the project in 1998 by Metro do Porto S.A., undertaking with the latter a turnkey execution of complete units. The companies that were part of the consortium were also bound to the Normetro Consortium by an agreement of the same nature.

This consortium was the main contractor and was therefore solely responsible for delivering to the sole client Metro do Porto S.A. a final output ready for immediate use. It was the unique formal interlocutor between the companies that were part of the consortium and the client, taking full responsibility for coordinating the client’s requests with the activities of the

directly involved companies. The consortium was also responsible for coordinating the plans and actions of the seven companies grouped in the consortium. Moreover, because its resources originated exclusively in its companies' own resources, it acted as a mere intermediary between the sole client and the several suppliers. The Normetro Consortium's internal organisation was considerably complex because the coordination between the partners' business activity and the mechanisms for internal payment was quite elaborated.

There was a Consortium Agreement where the rights and obligations of each grouped company, as well as the norms that regulated the coordination of activities between the grouped companies, were formally defined as clearly and comprehensively as possible. There were several changes in what was initially stipulated in the contract agreed between Metro do Porto S.A. and the consortium Normetro A.C.E., and also in the contract agreed between the companies of the consortium. Several amendments were added to the initial contracts as a consequence of the several changes that took place over the length of the project. All parties directly involved in the project were expected to thoroughly employ the formally agreed terms.

The changes mentioned above were of a diverse nature. To begin with, the companies that were part of the initial formation of Normetro changed several times. This was mainly a consequence of fusions and acquisitions which led to the integration of external companies or groups into the consortium. It was also associated with the creation of Transmetro Consortium A.C.E., a construction consortium that aggregated three other companies that were part of the Normetro Consortium. The creation of this consortium resulted from the considerable weight that construction had in the overall project and in Normetro. After several changes, by the time data was collected for this piece of research (i.e. in 2006), the consortium presented the following configuration: Semaly (project coordination), Bombardier Transportation (trams), Balfour Beatty Rail (fixed installations), Transdev (operation and maintenance) and finally Transmetro Consortium. The latter was the consortium for construction and it grouped the company Impregilo (tunnelling) and the two construction companies Sociedade de Construção Soares da Costa and Somague Engenharia S.A. Not only did the configuration of the consortium change, but also the participation of each company in the consortium. As the project developed, each company's weight and intervention increased or decreased, depending on the nature of the provided service. Moreover, there was also a considerable internal change in terms of leadership of the consortium because whilst at the beginning the construction company Sociedade de Construção Soares da Costa held the leadership of the consortium and thus a majority share in the consortium, Somague Engenharia S.A. then took over. Furthermore, there were also

several changes regarding what was stipulated at the beginning of the project with Metro do Porto S.A. Amongst others, these resulted from the addition of new routes or extension of the lines to the ones that were initially projected and the elimination of lines that were initially projected and that were transferred for the second stage of the project. Another change that took place was associated with the length of the project: in total, the consortium was supposed to be active for 8 years once the projection stage had began, but with all the alterations to the initial contract, its extinguishing date changed to 10, 5 years after the start of the projection stage. All these changes here described were associated with the varying interests of the directly involved parties, having led to an increasing complexity of the project which *per se* was already considerably complex.

One of the interesting features of this consortium and one that is believed to have influenced the activity coordination between the directly involved parties was the decision to concentrate in the same location all the project structures of the directly involved companies. What is established by law for public works contests is that the adjudicatory companies must have at all time someone representing them (usually the top managers) within the physical space of the building site. However, given the dimension and international character of the project, the involved companies decided to have all their members of staff that were dedicated solely to the project working in the same location somewhere in the city of Porto.

Now that the main features of the two cases have been presented, this researcher puts forward some preliminary expectations regarding the findings that might result from analysing the Network Pictures from individuals in these two networks. This researcher expected that in the '*Product Network*', where companies had been around for a long period of time and where actors' role had been defined over a number of years, very tight Network Pictures were to be found. Everyone was expected to know what was going on in the network, what they and others were able to achieve and where they were in the network. On the other hand, in the '*Project Network*' where there was a close interaction between multinational and local companies, another perspective was expected to exist: local companies would have a narrower and centred view of the network, contrasting with the multinationals' broader view of things. Also, given the short duration of their involvement with each other, they were not expected to know much about what was going on between them or around them.

4.3.3.2 Selected companies

The potential number of companies that could be included in each network was vast, as a result of their interconnectedness. However, so that the analysis could be feasible, the number of included companies had to be confined to a certain domain. The definition of the companies to be included in the data collection for each network did not in any way restrict respondents' views of the world. Respondents from each network were expected to see actors and relationships which had not been included in the selected networks. It is important to highlight this fact in order to clarify that the definition of the networks was not in any way incompatible with the research aim: respondents' horizon was not limited by the research project's definition of the two networks, but instead a limit to the number of companies where data was to be collected was defined.

The identification of those companies integrated in each network came in two phases. In the first phase, one or two companies were chosen in each network for the reasons presented in Section 4.3.3.1, e.g. easy access. Moreover, these companies had notoriety in the Portuguese media and this increased the interest of this researcher in these companies. The remaining companies were identified in a second phase and by a snowballing or chain process (Gray, 2004, Ritchie and Lewis, 2003). That is, phone enquiries to each of the identified companies were conducted, and appropriate members from each company were asked to name companies from their surroundings. If several of them identified a particular company as being part of their surroundings, then members from that company were contacted by phone and also asked to identify companies from their surroundings and so on. Company by company, a network of interrelations was identified for each situation and each identified company was a potential target for the research. This snowball process also allowed the project's researcher to begin building her own view of each network. For each network, between seven and eleven companies were selected: those which were considered by this researcher to have more interesting features and were readily accessible. Most selected companies were suppliers, competitors or clients of those companies that had been initially selected.

For the '*Product Network*', the company that was identified on the first stage was Logoplaste Group S.A.. Besides the visibility that this company had in the Portuguese business scenario, it practiced solely the hole-through-the-wall production and delivering system. Furthermore, as a result of previous academic investigation projects, this researcher had some contacts in this company. In total, eleven companies were included in the analysis [see Figure 9]. For the '*Project Network*', at a first stage, two relevant companies were identified and included in the

network: the sole client Metro do Porto S.A. and the sole supplier Consortium Normetro A.C.E. Enterprise Group. In total, seven companies were included in the '*Project Network*' [see Figure 10].

Neither of the figures included in this section, i.e. Figure 9 and Figure 10, represents the Network Pictures held by the respondents or by this project's researcher. Instead, they are mere simplified representations of the '*Product Network*' and of the '*Project Network*'. These diagrams were included in this section with the sole aim of providing some initial structure for the companies included in the data collection and analysis. It is a way of helping to describe and visualise the structure of the network of companies where data was collected. It is not intended to represent any specific perspective or Network Picture of the considered network since this would restrict or condition respondents' views or demarcate the network boundaries for its participants. Moreover, solely direct relationships among organisations were included.

4.3.3.3 Selected individuals

Because Network Pictures are individual constructs, the selection of individuals from each company to be included in the data collection was also crucial. Thus, after identifying which companies were to be included in each network, individuals from each company were chosen.

The choice of individuals was conditioned by the project's research problem. Underlying the research aim was the concept of actors' views of the world and one of the main reasons why they are believed to be important, is that they are supposed to guide their actions. As a result, only individuals who played a key role in a company's decision-making process were selected. In each company there is usually a restricted group of people responsible for defining the general aspects of their companies' strategy [see Chapter 2, Section 2.2.5, for more detail]. Thus, all individuals selected from each company were limited to those groups of people performing management roles, namely either directors or CEOs, i.e. Chief Executive Officers. Depending on the company and on the members' availability, the following people were interviewed: CEOs, Directors of Marketing, Production and Operations Directors, Financial Directors, Purchasing Directors, Communications Directors and Human Resources Directors amongst others. The number of individuals selected from each company varied between one and seven. The former situation only happened in a few

situations, either because there was only one individual performing most of the companies' management functions or because only one director made himself available for interview.

Some individuals that were working in companies which were not included in either network, i.e. in the set of companies that were selected for the collection of data from each network, but that were somehow related to each network, were also interviewed. The aim of including these individuals' testimony was to capture the perception of individuals who were outside the selected networks and yet were somehow associated with them. For example, for the '*Product Network*', the director of a magazine on the plastics sector was interviewed, because he had an idea of the relationships that were taking place between the companies included in the network. In addition, one person responsible for a non-profitable governmental institution, whose main aim was to support the internationalisation of Portuguese companies, was also interviewed. These two people were not involved in any business practices developed by the companies included in either network; however they had relationships with and thus perceptions of those companies investigated by this study. In interviewing these people, the researcher aimed at widening her understanding of each context or situation (Ritchie et al., 2003). Moreover, the aim of the conducted research did not rely on checking if respondents' views of the world corresponded to what was going on in the surroundings, but instead to develop a way of understanding how they saw it and why they saw it in those terms. Thus, by having a wider understanding of each network or situation, this researcher could better address the latter aim, that is why they saw it in those terms.

The individuals selected from each network included in this empirical research are listed in **Appendix 1**. In total, there were forty-nine respondents. Once the sampling was concluded, the data collection was carried out. This is described in the following section.

4.3.4 Data collection

4.3.4.1 Multiple sources of data

With the aim of better understanding the context where individuals and companies were developing their business activity and their views of the world, multiple sources of information were used. This usage of different sources of information was a form of triangulation that more than "checking the validity of data [result of helping] to confirm and to improve the clarity, or precision, of a research finding"; it was "a means of widening or deepening understanding of a subject" (Ritchie and Lewis, 2003, p. 275). Triangulation is considered essential for achieving deep understanding in a case-study and it involves using

multiple sources of information (Denzin, 1978, Yin, 1994, Stake, 1994). Primary and secondary data were collected, a common practice when the selected methodology is that of case-study research. The primary data was collected with open semi-structured interviews and visual representations solicited from individuals from both networks. The secondary data was collected from press articles, news and industry reports regarding the included companies and networks. Institutional information provided by the researched companies was also used.

All primary data was collected at the workplace of each respondent. This location was selected for practicality reasons and also to ensure that respondents felt comfortable. They were kept in an environment that was very familiar to them and were in the context they were being questioned about. This measure was implemented with the aim of enhancing the richness of the data.

4.3.4.2 The interview guide

Case-study research “benefits from the prior development of theoretical propositions to guide data collection and analysis” (Yin, 1994, p. 13). However, in this research project there were no research propositions that could be used to define the content of the interview guide; this project resembled a ‘fishing expedition’, with attempts to identify ideas that could help addressing the research problem. This situation was overcome by loosely using the preliminary and solely theoretically derived structure for Network Pictures, suggested in the last chapter, to formulate the interview guide. This technique is not incompatible with the social constructionist approach that underpins this project, as it is a common practice used when carrying out content analysis (Krippendorff, 2004). Moreover, another data analysis technique associated with social constructionism, namely grounded theory (Glaser, 1992, Glaser, 1998, Strauss and Corbin, 1990, Strauss and Corbin, 1998), also adopts this practice, as prescribed in the relevant literature. Grounded theory researchers take what could be considered as a fundamentalist position, in which there should be no pre-suppositions and ideas should be allowed to emerge from the data (Glaser, 1978, Glaser, 1992). However, other authors have adopted what can be seen to be a more flexible and practical perspective of grounded-theory, assuming that some pre-conceptions are inevitable in the sense that when a researcher sets out to investigate a research topic, it is normal that he/she tries to know something about it prior to carrying out the data collection (Strauss, 1998, Strauss and Corbin, 1990).

In addition to questions related to the three Elements of Network Pictures, some introductory questions were also included in the interview guide. The latter aimed mainly at: 1) creating in the respondents a sense of comfort, by inquiring about things they were familiar with and considered straightforward, and simultaneously 2) allowing the collection of some objective data regarding respondents' characteristics. They were asked about their working experience: how long they had been working in the company or sector and in which functions they were or had been involved in. They were also asked about the sector where their companies were developing business activity. There was also a question asked at the end of every interview, regarding their perception on the extent of within-company commonality: would the other directors who were going to be interviewed provide a similar view to the one that the respondent had just provided? The aim of including this question was to grasp what were the respondents' individual perceptions on the extent of commonality, and whether they coincided with the outcomes of this researcher's within-company analysis.

The developed interview guide was tested in a pilot study conducted in a company that did not belong to any of the selected networks. The selected company (Monteiro Ribas) developed business activity in the leather sector and in the Portuguese city of Porto. This company was selected to be part of the project's pilot study because of its accessibility: 1) there were some personal contacts with the company's Production Director and those connections were used to talk to some other directors of that same company and 2) the company was situated in Porto, making it geographically very handy for the data collector. In total, four directors were interviewed. In accordance with the receptivity shown by the respondents and richness of collected data, several adjustments were made to the initial interview guide. For example, some of the questions that were included in the initial interview guide were too theoretical and abstract and the respondents were not clear about what was being asked. The meaning of some expressions used in the initial interview guide was also questioned by some respondents. These were some of the things that had to be changed and adapted in the initially developed interview guide, so that it could better serve its final purpose.

4.3.4.3 Verbal and visual data collection techniques

Organisational science in the past few years has begun to develop more innovative research designs and methodologies, leading to a sense of refreshment and revitalisation in this field (Meyer, 1991). However, when it comes to the collection of data from human subjects, not many modifications can be detected when compared with the first techniques that were used to collect data (Meyer, 1991, Webb and Weick, 1979): verbal answers to questions continue

to be the most common way of data collecting and asking organisational members to create or to interpret visual representations has rarely been integrated into researchers' *modus operandi*. A number of authors have argued that verbal data collection should no longer be considered as the only and best technique to collect data in organisational research (Faulkner, 1982, Campbell et al., 1982, Salancik, 1979, Webb and Weick, 1979, Adler, 1970). Nevertheless, most researchers have still chosen not to use visual techniques to collect data.

A combination of visual and verbal data collection techniques was selected for this research project. The decision to combine both techniques was essentially for several reasons. To begin with, a combination of different techniques is advisable to assure a greater reliability of the collected data. By integrating distinct data collection techniques, researchers try to compensate the weaknesses of one method with the strengths of others (Denzin, 1978). Nevertheless, no matter how many techniques are combined and used in a research project, it is never possible for researchers to avoid imposing their own beliefs and preconceived ideas on the subject that is being studied, even if just partly (Meyer, 1991, Astley, 1984, Salancik, 1979). Using more than one technique does appear to make the process more reliable. Moreover, a combination of visual representations and captured words is expected to provide researchers and respondents with a more structured and clearer idea of what is being said. If information is simultaneously represented in two ways (e.g. visually and verbally), people find it easier and quicker to process information and to proceed to heuristic thinking. Meyer (1991) argued that although researchers are encouraged to use visual techniques in their data collection, they should not abandon other useful methods such as: questionnaires, interviews, rating scales or regression models. Finally, the combination served the aim of the research project developing a tool that allows for a grasping of actors' views of the world. Meyer (1991) suggested that there are several fields for which visual data is preferable to verbal data as a way to collect primary data, because it allows for obtaining certain information that the enquired subject is not, for some reason, able to provide in a verbal manner. The author pointed out how people are usually not able to verbalise the plenitude of their cognitive maps of the organisation and that visual representation can be a very useful tool to get access to a more in-depth image of those maps. Because informants have a limited capacity to process information and to make sense of what is happening around them, it becomes necessary to develop new ways of collecting data, in such a way that it is possible to grasp the informants' real knowledge of the situation. Frequently, 'pictures' function as "a catalyst, helping them to articulate feelings that had been implicit and hard to define" (Zuboff, 1989, p. 140) and

“these simple drawings convey feelings that often elude verbal expression (Zuboff, 1989, p. 141)¹⁵.

Henneberg et al. (2006) suggested a methodology for *constructing* individuals’ Network Pictures that relied solely on visual data collection techniques. Individuals were asked to represent on a blank piece of paper what were and how they saw their surroundings and the analysis of that representation was believed to allow for the researcher to grasp those individuals’ views of the world. As mentioned before, looking solely at individuals’ representations of the world does not appear to be sufficient (Ramos et al., 2005). A more elaborated methodology than the one suggested by Henneberg et al. (2006), one that includes not only collecting individuals’ representations of the world and eliciting their explanation of those drawings, but also interactively interviewing them, was put into practice for this project. This way, respondents could not only explain the logic underpinning their representations of the world, but also provide more details on what was and how they saw the network (Ramos et al., 2005). “Words and pictures belong together. Viewers need the help that words can provide” (Tufte, 1983, p. 180). Representations are nevertheless important: not only do they help interviewees to structure their loose thoughts and researchers to understand what the respondent is trying to transmit, but also they may capture some subliminal beliefs that may not be perceived in the verbal data.

In a previous study that intended to capture individuals’ mental representations of their company’s environment and that used visual data collection techniques (Meyer, 1991), the CEOs reacted enthusiastically. They were asked to use merely pictures, arrows, words or numbers in their representations. According to the author, words can be very useful to help viewers focus their attention on the various aspects of the representation (cues on how to read the representations). The high response rate may be explained by the fact that the CEOs found that trying to present a visual representation of their environment was a challenging, interesting and useful process that could bring benefits to the company.

At this stage it is important to clarify the distinction between the use of *pictures* as a data collection technique or methodological tool, and the concept of Network Pictures as the research device that allows for an understanding of how organisational actors’ perceive the network. Throughout this research project, it is made clear that it is believed that the pictures

¹⁵ When analysing the pictures obtained in her research, Zuboff (1989) found noticeable the resemblance and consistence between the several pictures obtained from different people who occupied the same function in the organization. This corroborates with some of the aspects of within-company commonality pointed out in the previous chapter.

business actors hold on their surroundings ontologically exist. Hence, even if only verbal data collection techniques were used and actors' views of the world were obtained by analysing solely verbal data, the ontology of those views would still be there and Network Pictures as a research tool would still be believed to grasp those pictures. The use of visual data techniques is merely an additional data collection method, one that is considered to have a number of advantages over other methods.

The visual data collection technique used in this research project entailed asking the respondent to represent his/her view of the surroundings on a blank piece of paper and to explain it (follow-up discussion). On the other hand, the verbal data collection technique involved the carrying out of open semi-structured interviews. The pilot study conducted at Monteiro Ribas was used to decide which technique was to be applied in the first place. Throughout the four interviews conducted at this company, it was observed that if there was an attempt to apply the verbal data collection first and simply conduct the interview by asking the questions included in the interview guide, the respondents would begin drawing their representation of their surroundings without being asked to do so. They would reach for a piece of paper, ask for permission and represent in a diagram what they were talking about. They explained how this way it became easier to structure their thoughts and to provide a clearer and more complete view of what they saw in their surroundings. On the other hand, whenever they were initially asked to provide a representation of the world, they would appear to be more comfortable and the obtained data was richer than in the previous situation. Therefore, the decision was made to apply the visual data collection technique first, followed by the gathering of verbal information. To sum up, the pilot study helped to improve the semi-structured interview questions and reinforce the view that both diagrams and interviews were the most appropriate procedure to follow. In particular these interviews led to the decision to begin those for the main study by asking the participants to draw a diagram.

Given the eliciting problems associated with research of this nature, in order to assure that respondents' answers would not be in any way influenced or conditioned by the way they were questioned, there was a need to be especially careful whilst developing and using the interview guide. Any discussion with the respondent, other than the set question format, from first contact had to be as impartial and general as possible. A brief and impartial introduction was made at the beginning of each interview and the same procedure was followed with every respondent when collecting the visual and verbal data. This procedure is addressed here.

. Introduction made at beginning of each interview

This introduction served several purposes: to let respondents know about the confidentiality of their answers, to request permission to audio-tape the interview and most of all to inform them about the overall aim of the interview that was going to take place. The latter involved a very brief exposition of the research project. This exposition had to be as basic and neutral as possible, to avoid leading the responses; a problem that the researcher needs to be aware of when collecting data of this nature (Evans, 1988). This way, respondents' perceptions on what and how they saw their surroundings, as well as their 'theories-in-use', were expected not to be influenced in any way. The exposition of the research project was as follows:

“I want to talk about the entities that are around you: about the people, companies or groups of companies that you have business with and the ones that, although you do not have business relations with, appear to influence or to be influenced by you and by your activity. I also want to talk about the relations that you have with those entities or relations these entities have with others or between them”.

. Data collection first phase – visual data

In this first phase respondents were required to draw a representation of their surroundings. Following the initial brief introduction to the research, as explained above, they were presented with the following request:

“If I give you some blank paper, can you please try to draw for me the entities that are around you as well as the relations that you see? Feel free to draw whatever you feel to be appropriate. I just want to know what your view on this set of entities and relations is. Please identify clearly the names of the entities you choose to include in this representation. You can use arrows, lines and circles, squares, whatever you desire and feel to be most appropriate. There is no time limit and let me just remind you that there is no correct way to do this drawing. Afterwards, please can you explain to me what you have drawn?”

Respondents proceeded to the encoding of the information and perceptions they held, making freehand drawings without receiving any cues, and "respondent-generated visual displays" (Zuboff, 1989) were obtained. A technique of this nature has been found to be a very helpful tool to obtain information from human subjects that they consider being hard to express and implicit (Zuboff, 1989) "Sometimes, when people had difficulty finding words, I asked them to draw pictures that conveyed their 'felt sense' of the work situation before and after [the analysed phenomenon took place]" (p. 428). However, if the researcher instructs the informant to make use of certain drawing tools such as triangles, diagrams, arrows or any other symbolic representation, the visual encoding process developed by the respondent is partially structured. In this case, the research is making use of researcher-generated displays. This was not the case for this research project.

Some informants preferred to make a draft before submitting the final representation. However, the majority began to draw the final version of their representations straightaway. As mentioned above, the visual data collection technique involved not only the 'picture' itself but also a "follow-up discussion", where each respondent had the possibility to explain what he/she had represented. "The process of describing the pictures served to free up the interviewees' ability to find words for their experience" (Zuboff, 1989, p. 228). This follow-up discussion gave each respondent the chance to develop greater insight about his/her drawing and mental representation. This researcher also benefited from this discussion: it was easier to understand what had been represented by each respondent, as well as understanding the representations' underlying logic. Whilst some respondents preferred to describe the representation as they were drawing, explaining the reasons why they were drawing in those specific terms, others preferred to discuss it after they had finished.

. Data collection second phase: verbal data

This second phase of data collection involved a semi-structured interview with open questions. The interview guide [see **Appendix 2**] was used to assure that no relevant issue was left out, but then other questions considered pertinent to the flow and the direction that the interview was taking were also introduced. Respondents were given sufficient freedom to talk about whatever they considered important for their business activity. Most of the time, they were left to talk with there being no attempt to interrupt them or to condition their answers.

After conducting each interview, this researcher took some time to write notes that were considered of interest to the aims of this study. Moreover, once all the data from each company had been collected, all the interviews were translated from Portuguese into English and transcribed *verbatim* into Word Documents. Given the aim of the research project, there was a need to transcribe all the interviews *verbatim*, not excluding any statement provided by respondents. Every single word could provide important input for analysing the data. The explanation given by each respondent regarding their pictorial representation was also transcribed. This allowed for, to a certain extent, the integration of the visual data into the full body of the transcript and helped to avoid some problems associated with only analysing visual data [see Chapter 3, Section 3.3.1].

For practical reasons, it was only after collecting all of the data from the 'Product Network', that that for the other network began. Data was first collected in the 'Product Network' because it was the first one selected. Moreover, the companies involved were spread

throughout Portugal and a considerable level of coordination was required to complete the interviewing schedule. This meant that it was inappropriate to get involved with the second network before completing this challenging quest. Furthermore, this separation of the total data collection into two different time periods for each network was so that, for each of them, this researcher was able to achieve a higher level of embeddedness and hence more likely to understand what was going on in a more comprehensive way. Collecting data for the ‘*Project Network*’ did not present any of the problems associated with doing so for the ‘*Product Network*’, as all the interviews were carried out in one city.

4.3.5 Data analysis

“Analysing involves the process of breaking data down into smaller units to reveal their characteristic elements and structure” and “we need to go beyond description: we want to interpret, to understand and to explain” (Gray, 2004, p. 327). There are several techniques available to analyse qualitative data and to achieve the described aims associated with such analysis. A qualitative content technique was adopted for carrying out the analysis in this particular research project. Krippendorff (2004) defined content analysis as “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use. [...] As a research technique, content analysis provides new insights, increases a researcher’s understanding of particular phenomena, or informs practical actions” (p. 18). This data analysis technique involves both the content and the context of the transcripts being analysed (Ritchie and Lewis, 2003).

Content analysis is about the “transcribing, recording, categorising, or interpreting of given units of analysis into the terms of a data language so that they can be compared and analysed” (Krippendorff, 2004, p. 220). It thus can be said to encompass two main stages: the first relies on identifying and operationalising mutually exclusive and considered descriptively exhaustive dimensions and the second stage involves coding or interpreting all the transcripts (or data) using the scheme of dimensions previously identified and defined (Gray, 2004).

In the following paragraphs these two parts of the data analysis in this research project are explored. Each of the stages of the method for developing Network Pictures put forward in Chapter 3 will be matched with the two parts of the conducted empirical data analysis.

4.3.5.1 First part of the data analysis

To begin with, the scheme of dimensions was empirically derived and developed. This scheme provided Network Pictures with a structure. This first part of the data analysis was thus closely associated with the first stage of the method for developing Network Pictures as a research tool. It addressed the project's first research question: "*What is the structure of Network Pictures as a research device?*".

The scheme of dimensions resulted from content analysing a sample of seven transcripts which corresponded to seven interviews conducted at the Logoplaste Group, a company from the '*Product Network*'. These particular transcripts were chosen for two main reasons. Firstly, in them most respondents spoke: extensively, quite freely, frequently talking about things they were not asked about but that they considered relevant. Secondly, on average the interviews carried out were the longest throughout the whole of this research project and therefore were considered to reveal the richest sources of data for identifying appropriate Network Pictures Dimensions.

This analysis was carried out with the aim of verifying whether the three theoretically driven Elements of Network Pictures [i.e. scale and structure, processes and positioning] used to structure the interviews were in fact represented in the data or if the data showed the existence of other relevant dimensions. In the former case, the three Elements of Network Pictures would be put forward as the structure for Network Pictures, whereas in the latter a different structure would need to be derived. A set of more granulated dimensions was identified and thus a new structure was put forward. This structure integrated twenty-one Network Pictures Dimensions and corresponding Sub-Dimensions. This derived structure for the construct of Network Pictures was the first output from this project's empirical research.

Elements of Network Pictures and Network Pictures Dimensions are a twofold way of looking at the same thing, only differing in their origins and level of detail. Thus, whilst the former were conceptually developed, the latter emerged from the empirical analysis carried out by drawing on these conceptually developed ones. Moreover, the Network Pictures Dimensions showed a greater level of detail than the Elements of Network Pictures and were therefore considered a more suitable, in-depth and rich way of looking at how individuals perceive the world. Before this new set of dimensions for the construct of Network Pictures was identified, it was quite difficult to make sense of the raw data, because the three elements previously employed were too non-specific.

The first part of the data analysis involved activities, such as: the coding data, developing a categorisation scheme and operationalising the identified dimensions. These processes are described in detail as follows.

.The coding process and development of a categorisation scheme

There was a coding process of the collected data, a very common way of interpreting qualitative information. “A code is a dimension applied to a word or set of words – most often a sentence or a paragraph – in order to interpret data documents, so that new theoretical insights can be generated from themes” (Brito, 1999, p. 100). For practical reasons, the unit of coding was the sub-clauses within sentences and it was thus quite common for the same sentence to be coded with more than one dimension; nothing out of the ordinary considering that this was qualitative and not quantitative analysis (Krippendorff, 2004, p. 160).

Initially, the coding was conducted using exclusively the dimensions that were expected to be found, with regards to the existing literature on the concept of Network Pictures. These were exclusively theory-driven and therefore the logic associated with a quantitative content analysis was followed. But as the coding process evolved, it became quite obvious that other relevant dimensions that had emerged from the transcripts (Krippendorff, 2004, p. 19, Altheide, 1987) should be included in the coding, so that an exhaustive description of the concept could be achieved. A qualitative or ethnographic content analysis began to emerge, as a result of these new empirically informed and apparently relevant dimensions. The process through which dimensions were identified was facilitated by the fact that there were some research questions chosen which were, known to protect “content analysts from getting lost in mere abstractions or self-serving categorisations” (Krippendorff, 2004, p. 32).

The identification of this coding scheme allowed for the interpretation of the raw qualitative data and for analytical insights. It involved the successive identification and review of topics and ideas, with the aim of uncovering what were the things that individuals saw in their surroundings and in what terms they saw those things.

The coding process was carried out with the help of computing software for qualitative analysis, *QSR Vivo*, a software package that is known to support procedures specified by grounded theory and also by content analysis. One of the advantages of using this software is that it allows for the coding of transcripts by associating pieces of text to certain themes. Another advantage is that content analysts may take advantage of this tool “if the body of texts is so large that a single individual cannot keep track of all the needed details whilst reading them” (Krippendorff, 2004, p. 341). It is nevertheless important to bear in mind that

although this software package may aid the researcher conducting the data analysis, it does not proceed to the analysis: it is merely a tool and it should always be considered as such. This computer aid used for carrying out the process, through which dimensions were identified, has been defined as interactive-hermeneutic (Krippendorff, 2004). It is said to be interactive because the categories of analysis are not fixed and these categories emerge while the analyst reads the transcripts; and it is said to be hermeneutic given that the process of analysis is driven by the analyst's understanding and familiarisation with the transcripts. Manual coding was put into practice by assigning one or more dimensions to chosen sections of the text.

. Operationalising the identified dimensions

At this stage, all identified Network Pictures Dimensions and corresponding sub-dimensions were operationalised. All identified dimensions were limited and explicitly defined, (Krippendorff, 2004) as opposed being to open-ended and implicit, that is to say, a complete list of sub-dimensions was provided for each identified dimension and all were then operationalised by having their meanings defined. This operationalisation had to follow certain rules (Krippendorff, 2004), the most important of which is that sub-dimensions had to be mutually exclusive and descriptively exhaustive, providing an exhaustive account of all possible outcomes. All variables or dimensions could be said nominal (or qualitative), given that they had no underlying ordering or metric. Furthermore, "the distinctions within a nominal variable are preserved under all permutations of its values", which means that "the differences between any two values of a nominal value is the same for all possible pairs of values" (Krippendorff, 2004, p. 161). Dimensions' operationalisation is only part of the process that allows for testing the reliability of the chosen data analysis technique [for further explanation see Section 4.3.5.3].

4.3.5.2 Second part of the data analysis

Once the scheme of dimensions was identified and operationalised, all transcripts were coded according to that scheme. This second part of the data analysis was thus closely associated with the second stage of the method for developing Network Pictures as a research tool: using the empirically derived structure of Network Pictures to analyse all the collected data and in this way understanding how each respondent perceived the world. It addressed the project's second, third and fourth research questions: "*What is the result of using Network Pictures as a research device?*", "*What do Network Pictures look like?*" and also "*Do Network Pictures allow for the identification of diversity between individuals' views of the world and between*

different network contexts and moreover do they allow for the capturing of other interesting phenomena?”.

This interpretation was carried out at several levels, integrating a within-case and a cross-case analysis. The aim was to come up with some ideas on the implications of Network Pictures and also to *see* if, how and why they differed or were similar.

1. Within-case analysis

The within-case analysis and findings mainly served two purposes: illustrating methodologies for analysing Network Pictures at several levels of analysis and also to consider some empirical findings that may result from using the research device of Network Pictures.

The within-case analysis encompassed three levels: individual, company and network [see Figure 11].

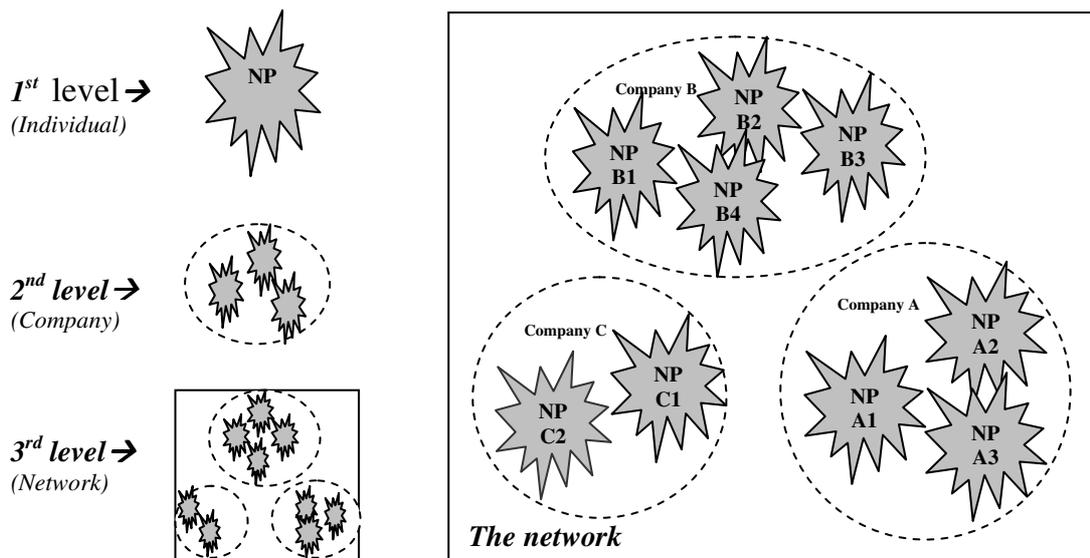


Figure 11 The three levels of analysis included in the within-case analysis

1. a) Individual level

Applying the derived structure to interpret the data collected from each respondent was partially a development aspect; an initial necessary step for the methodological development of this research project. It can be said to have served two specific purposes: on the one hand it was a way of testing if the empirically derived structure of Network Pictures allowed for a grasping of a rich and fairly complete way how individuals see the world and on the other hand, it allowed for an assessment of the potentiality associated with the use of this device.

The latter was achieved by exploring some of the interesting findings obtained by using the tool, which mere common sense may not have been able to predict.

To proceed with this analysis, there was an identification of the sub-dimensions that would lead to a better description and classification of how each respondent saw their surroundings. The meaning of each respondent's Network Picture was then interpreted by considering their objective features and some contextual variables.

1. b) Company level

Network Pictures were also analysed at the company level. The aim was to find out if and how their features varied within the same organisation. It was therefore about observing whether there were any differences or commonalities between the Network Pictures of respondents from the same company and to understand the reasons underlying each of these possible outcomes. Conducting the analysis at a company level was also an opportunity to successfully test a methodological technique on how to look at individuals' Network Pictures at that level.

Because actors' views of the world are individual, when the analysis was carried out at the company level, the set of individuals' views were not reified into one single *corporate* Network Picture. Instead, there was an identification of each respondent's Network Picture along the set of identified dimensions, followed by a comparison between them. The company was the context where respondents' views of the world were being generated.

1. c) Network level

Network Pictures of respondents from the same network were analysed to see if they also allowed for capturing the diversity or commonality at the network level and to address the role played by situational factors in the definition of actors' views of the world. In the previous chapter it was claimed that Network Pictures were believed to vary not only as a result of individuals' personal features, but also as a result of the context in which they are developed. This context may either be the company (addressed in the previous part of the within-case analysis) or the network where they are generated. The latter is the one addressed in this part of the within-case analysis.

The analysis conducted in one network was included in the main body of this thesis. This was carried out by comparing all the Network Pictures of all the respondents included in the same network and again, there was no case for reifying them.

2. Cross-case analysis:

Cross-case analysis complemented the last part of the within-case analysis, by addressing whether situational factors that resulted from the context or characteristics of the network, as well as individuals' and companies' objective features, did in fact condition how individuals perceived the network.

The main interest with the cross-case analysis was in looking at the network contextual features. If there was a considerable association between each network's features and the features of their respondents' Network Pictures, there would be the possibility of speculating whether situational factors conditioned the way individuals saw the world. As mentioned before, it was believed that the two networks selected for carrying out the empirical analysis would present quite different features. They were also expected to show, for some aspects, contrasting results regarding the features of Network Pictures created for those respondents interacting in each network.

The procedure to carry out the cross case analysis was as follows: 1) there was an analysis of what were Network Pictures' most commonly traced features among respondents from all companies in the same network; 2) then there was a comparison between networks. If there were any significant differences between the networks regarding those commonly found features, it would be possible to speculate and associate these significant differences with the specificities of each network. On the other hand, if the same Network Pictures' features were found for both networks, it would be possible to try to assess whether those similarities were somehow associated with the particular characteristics of each network. In either case, it would be possible to highlight the relevance of situational factors in determining individuals' Network Pictures.

4.3.5.3 Reliability and validity of the content analysis

Reliability and *validity* issues arise when a content analysis technique is employed or whenever a qualitative analysis is carried out. In this research project, an empirically derived structure was used to understand how someone else understood the world, that is, there was an interpretation of individuals' subjective constructs. Moreover, given that this project's analysis was fundamentally based on words and because words can assume different meanings for different people, given their idiosyncratic nature (Brito, 1999), testing its reliability and validity is essential.

How can it be possible to assure that researchers' own understanding was not imposed on the conducted analysis? How is it possible to ensure that the resulting Network Pictures were not mere impressions of this project's researcher with regards to the responses that were given? Moreover, how is it possible to provide assurance the *truthfulness* of the research results?

. **Reliability**

Given that this is a social constructive approach, it would be almost impossible for the researcher's own interpretation not, to some extent, to condition or bias the conducted content analysis (Krippendorff, 2004). However, there are some methods that can be used to ensure that the impact on the data analysis of researchers' interpretation and beliefs are not dramatic or that relevant. That is to say, "that no (or only a negligible) amount of extraneous 'noise' has entered the process and polluted the data or perturbed the research results" (Krippendorff, 2004, p. 212).

One possible way to assure reliability of a piece of research is to test the replicability of the conducted content analysis; this is a form of internal reliability, and it is often given more attention to this than to the external validity (Ritchie and Lewis, 2003). "Techniques are expected to be reliable. More specifically, research techniques should result in findings that are replicable... Replicability is the most important form of reliability" (Krippendorff, 2004, p. 18). According to Kaplan and Goldsen (1965), reliability assures that "data are obtained independent of the measuring event, instrument or person" (p. 83). Internal replication was thus used to show the reliability of this project's conducted analysis.

Two other academics were asked to help perform this replicability testing. They were not directly involved in this research project, but were familiar with the IMP body of literature. Three dimensions from the empirically derived dimension scheme were randomly selected, as were five transcripts of conducted interviews. This researcher provided these two academics with all the instructions that were necessary to carry out the content analysis. The coding unit was defined as being the sub-clauses within sentences and a list of the three dimensions with their corresponding operationalised sub-dimensions was provided. They were requested to follow the provided instructions and to classify how those five respondents perceived the world. The test showed that the way the two academics characterised the views of those five randomly selected respondents along the three randomly selected dimensions and corresponding sub-dimensions, was very similar to the classification that had been given by this project's researcher. There were no significant differences. This replicability provided a good indicator that the conducted analysis was reliable, that is to say, it is sound (Krippendorff, 2004, Ritchie and Lewis, 2003).

. Validity

Validity is associated with the truthfulness of the research findings. According to Krippendorff (2004), “scientific research must also yield valid results, in the sense that the research effort is open for careful scrutiny and the resulting claims can be upheld in the face of independently available evidence” (p. 18). This project’s researcher was concerned with both the research’s internal and external validity.

Internal validity was assured with the employment of two techniques. The first relied in carrying out what Silverman (2000) defined as a *constant comparative method*, something that that Glaser and Strauss (1967) defined as *checking accuracy of fit*. This implied raising possibilities of findings and constantly testing them in different companies and networks, and with regards to different individuals. The second technique involved a *deviant case analysis* (Ritchie and Lewis, 2003). Instead of trying to force the ‘outliers’ into the defined classes or expected findings, those specific individual differences were used to reinforce the idea that the ‘regularities’ were normative and to try to understand why was it that the more predictable or intuitive behaviour was not always found.

External validity is associated with the possibility of assessing if the developed constructs are applicable to other groups within the population, or to other contexts or settings (Ritchie and Lewis, 2003). These authors highlighted how this form of validity is about the extent to which the research has “wider applicability” (p. 273). The dimensions that formed the construct of the research tool of Network Pictures developed with this project emerged from content analysing one company associated with one particular situation or network, i.e. the ‘*Product Network*’. The structure was then used in that same network as well as in the ‘*Project Network*’, to interpret all individuals’ views of the world. The tool was proven to be usable and useful in both networks, because it allowed grasping individuals’ views in what was considered to be a fairly rich and comprehensive way and to raise some phenomena that might require further addressing. The applicability of the developed structure to other groups of the population or to other contexts was this way tested and confirmed. This researcher does not nevertheless discard the possibility for future researchers to find other dimensions to be more appropriate to grasp actors’ views of the world in contexts that are diverse from the ones considered in this piece of research.

4.3.5.4 Limitations associated with QSR NVivo

The QSR NVivo software package was used to develop the categorisation scheme and the result was the identification of a coding tree which contained twenty-one Network Pictures Dimensions and corresponding Sub-Dimensions. However, this piece of software was not used to operationalise the identified dimensions, nor to proceed to the actual data analysis. Several reasons led this researcher to decide not to use the software package for the latter two activities. Overall, this research project is about people and it takes one person and not one machine to interpret what may be going on in one other person's mind. Although it can be argued that QSR NVivo does facilitate the process of data analysis when there is a considerable amount of data, it may constrain the research by making it too mechanical. A researcher who chooses to use this software may without realising develop a predominant concern with the usage of the software, trying to assure that all passages are coded with the appropriated dimension, so that a frequency counting can take place. The danger of such practice is that the purpose of the investigation that is being conducted may be missed.

The primary orientation of this research project was to develop a structure for a research tool and to try it out. For such an aim to be achieved, this researcher was required to keep an open mind to the possibility of finding new interesting things that could contribute to the understanding of what could help in grasping how actors perceive the world. The meaning underlying the conducted interviews had to rely on the application of how this researcher interpreted the obtained responses; QSR NVivo would not allow for the carrying out of such interpretation.

Furthermore, the project's purpose was mainly illustrative and not really focused on the data collection. If it had been planned for QSR NVivo to be used, the interview questions would have had to be more structured, with direct questions that would address in a relatively direct way the identified dimensions. In that case respondents would be partially led in their answers. This structuring of the interview questions would thus also have negatively affected the ability to develop a vocabulary of specific terms that were used in the data analysis. To sum up, it is not that the software could not have been used to carry out the data analysis; instead, it just did not serve the purposes of this particular research project.

Not only was the software package not adequate with regards to the project's main purposes, but also its usage would have also brought some problems and disadvantages. Having used QSR NVivo in the sample of seven interviews selected for the first part of the data analysis, it

was possible to conclude that using this software would not have facilitated the data analysis process, but instead it would have conferred upon it greater complexity.

To begin with, the coding process would have been too time consuming. This was mainly because of the excessive overlapping of the coding for each sub-clause within each sentence. It became apparent that the same sub-clause within a sentence would be codified with several dimensions. In addition, because the interviews were semi-structured, the length of some of them was extremely long making the coding process extremely time consuming.

Moreover, QSR NVivo is traditionally associated with frequency counting. If this researcher looked for frequency to classify respondents' Network Pictures, these would be determined according to the number of times that sub-clauses were coded with specific sub-dimensions. However, this researcher believed that it would not be appropriate to carry out this classification by simply relying on frequency counting. This conclusion was reached after a careful and detailed reading of the full body of the seven relevant coded transcripts; it was observed that although a sub-dimension could be used more frequently to code a transcript than another sub-dimension belonging to the same dimension, the latter could be considered as being predominant in that respondent's view of the world. NVivo was therefore considered to over count the sub-dimensions, making it difficult to achieve an appropriate classification of a respondent's view of the world. Moreover, some sub-dimensions, such as that related to whether someone is moral in his / her outlook, were identified by their omission and not by explicit statements or explicit comments. QSR NVivo has not been devised to look for things that are not there and regarding sub-dimensions such as these, only a human researcher can interpret what has been omitted. Therefore, the classification of respondents' Network Pictures was not really about *frequency* but instead about *intensity*. QSR NVivo cannot really deal with this possibility, as its usage would lead to the analysis of coded sentences removed from their context and this would make it difficult to address *intensity* issues.

The operationalisation of Network Pictures Dimensions and corresponding sub-dimensions was affected by these *intensity* and *frequency* issues and it was found to be more appropriate to look for *intensity* than for *frequency*. This way, instead of defining sub-dimensions in terms of what individuals most regularly talked about, they were described in terms of how *strongly* or *intensively* they spoke and probably thought about something. The criterion that was applied for defining *intensity* resulted from the combination of the two following factors: 1) evaluation of the passion or strength associated with each possible (limited and explicit) sub-dimension of a particular dimension and 2) assessment and selection of what were the key sentences that could better describe the views held by individuals, in terms of that

particular dimension. Analysing and interpreting the transcripts did not imply coding every single passage that hinted at a certain sub-dimension. Instead there was a search for what were considered the most relevant pieces of evidence or sub-clauses, regarding individuals' pictures of the network on a specific dimension. The analysis involved in-depth reading of the full body of each transcript and evaluating the *intensity* of each sub-dimension.

A system to analyse and synthesise respondents' Network Pictures was developed. The system involved manually filling in a summary table for each respondent. The table had as many lines as the number of identified Network Pictures Sub-Dimensions, and two columns: one for observations and another for illustrations or sentences selected from the transcript, which clearly illustrated the observations that were made for a particular sub-dimension. This procedure allowed for the reduction of the substantial content of the transcripts into a summary and the construction of analytical tables, which could easily be analysed and compared. Moreover, this form of illustration facilitated the identification of the sub-dimensions that classified how each individual perceived the world, as well as the identification of some relevant contradictions in the way they saw the world around them.

4.4 Conclusion

With this chapter a match was made between the method for developing Network Pictures as a research tool put forward in Chapter 3 and the two parts of the conducted empirical data analysis. The research project's underlying social constructionist and inductive nature has been discussed and the reasons for choosing a case-study research method have been explained. The measures taken to reduce the potential "noise" that this project's researcher may have caused as a result of the subjectivity of the selected methodology were explained. The chapter has also justified the decision to combine visual and verbal data collection techniques.

In the following chapter, considering all the choices made with regards to the empirical research methodology and design, the results of the first stage of developing Network Pictures as a research tool are presented.

Chapter 5

5 Operationalising Network Pictures as a Research Tool

5.1 Introduction

The aim of this chapter is to provide a thorough operationalisation of the empirically derived structure of Network Pictures. It therefore corresponds to the result of the first stage of the method that was proposed for developing the research tool. The process through which this structure was derived was already explained in the two previous chapters. The listing of the identified Network Pictures Dimensions and corresponding Sub-Dimensions is presented in Section 5.2 and the meaning associated with each is set out in Section 5.3. Section 5.4 contains the conclusion.

5.2 Empirically Derived Structure

The qualitative coding of a sample of data resulted in the identification of twenty-one Network Pictures Dimensions and corresponding Sub-Dimensions. This structure was expected to allow researchers ‘see’ in a rich way what actors’ pictures were about.

With the aim of establishing some order into the identified Network Pictures Dimensions, they were clustered into four groups: 1) focus, 2) weight, 3) consistency and specificity, and 4) overall view of the surroundings. This clustering was not carried out randomly, although a strong subjectivity did underline the process: dimensions that intuitively belonged together were clustered into specific groups. Even though the data was qualitative, not having any specific ordering, there was a subjacent ordinal metric which presumed that the dimensions included in each group were “more similar to each other than to dimensions [...] in different groups” (Krippendorff, 2004, p. 167).

The identified dimensions were organised into a coding tree [see Figure 12], progressing from “larger and less differentiated sets of units of analysis to smaller and more specialised ones” (Krippendorff, 2004, p. 167). Thus the tree begins with the four groups that the identified dimensions were clustered into, moving on to the twenty-one Network Pictures Dimensions and finishes with the latter’s corresponding Sub-Dimensions.

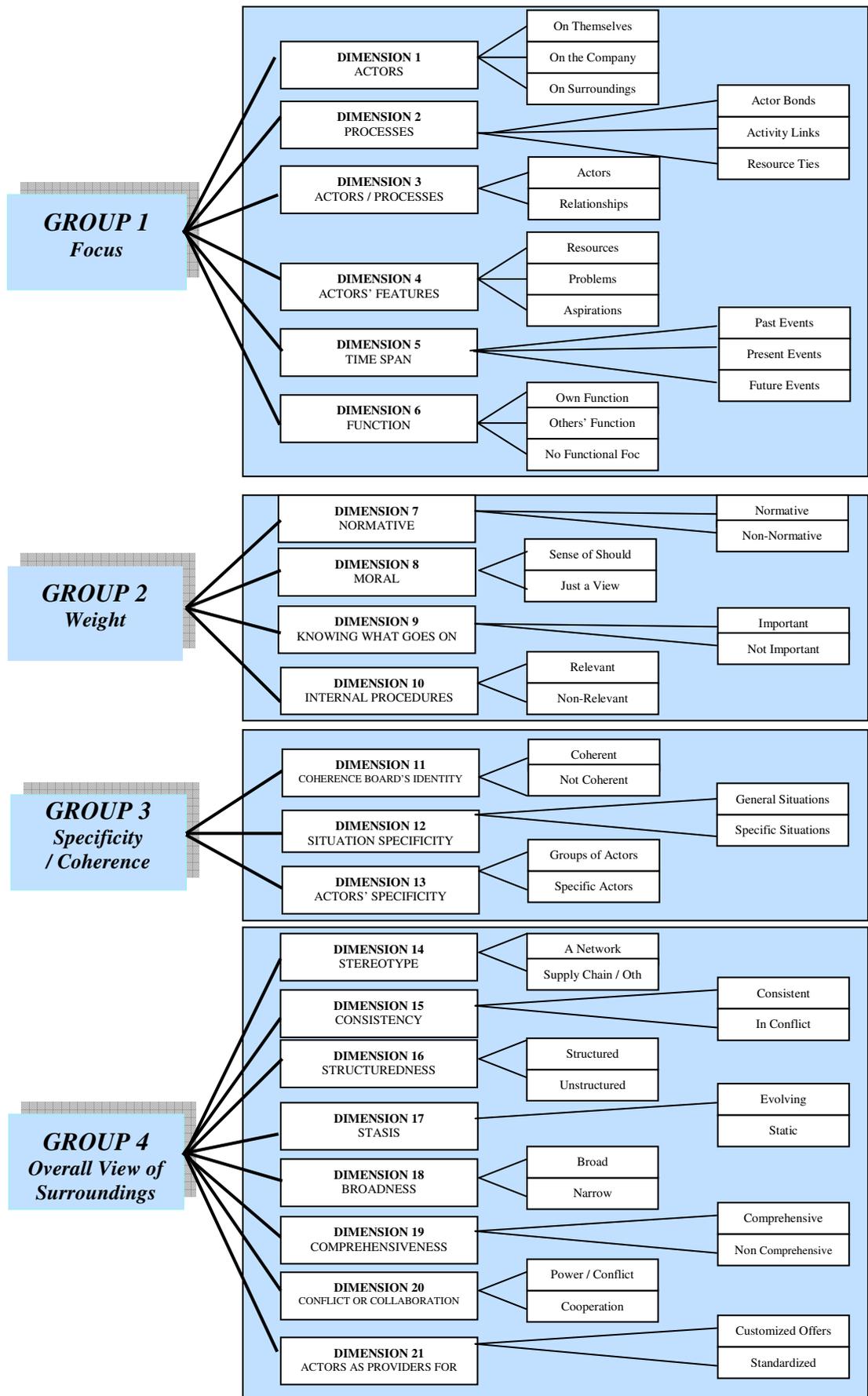


Figure 12 Groups of Network Pictures Dimensions, Network Pictures Dimensions and Sub-Dimensions

As previously discussed in Chapter 3 (see Section 3.3.2) and in Chapter 4 (see Section 4.3.4.2), data was collected using a theoretically derived structure of Network Pictures which integrated three Elements. The coding of a sample of data originated a set of twenty-one Network Pictures Dimensions, which were more granulated than the former structure and it was thus were put forward as being more appropriate. Nevertheless, the identified Network Picture Dimensions were still related to the conceptually developed Elements of Network Pictures and these relations between elements and dimensions were used to operationalise the latter. Each Network Picture Dimension was usually associated to more than one Element of Network Pictures, i.e. it was usually possible to establish a one-to-one relation between elements and dimensions.

Once the Network Pictures Dimensions were operationalised, some apparent associations between them were identified [see Figure 13].

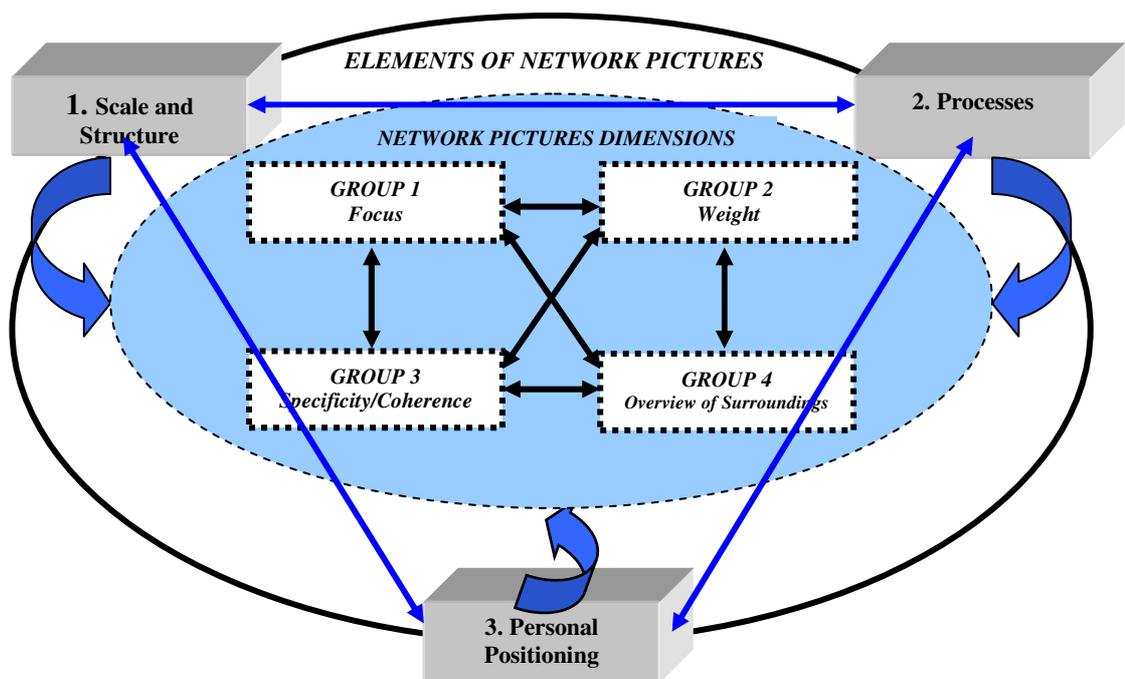


Figure 13 Potential Relations between the Elements of Network Pictures and Network Pictures Dimensions and those between the Network Pictures Dimensions - Ongoing Model of Network Pictures

5.3 Operationalising the Empirical Structure of Network Pictures

Drawing on the relations between the theoretically derived Elements of Network Pictures and the empirically derived Network Pictures Dimensions and Sub-Dimensions, the latter were operationalised.

The following four sections each correspond to the operationalisation of a group of Network Pictures Dimensions and corresponding Sub-Dimensions. For each sub-dimension a summary table with the most commonly observed associations with the three Elements of Network Pictures is included.

5.3.1 Group 1 – Focus

5.3.1.1 Dimension 1 – Actors’ Focus

This dimension can be used to classify how individuals perceive the world when it comes to selecting what they consider being the ‘focal’ actor or groups of actors. It is about those actors that individuals think about with greater intensity. Three possible sub-dimensions were identified for this dimension: respondents described their surroundings placing greater emphasis on 1) themselves, 2) on the company they worked for or 3) on the surrounding actors (i.e. those individuals from their company, their company’s departments, individuals and groups from other companies, companies or groups of companies) [see Table 2].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
	SCALE	STRUCTURE	PROCESSES	POSITIONING
<i>1. ACTORS’ FOCUS</i>				
<i>1.1. On Self</i>	Small number	Self’s problems, aspirations and resources	Bonds, links and ties between self and others	Individual as the centre
<i>1.2 .On Company</i>	Not very large number	Company’s problems, aspirations and resources	Bonds, links and ties between company & others	Company as the centre
<i>1.3. On Surroundings</i>	Large Number	Surrounding actors’ problems, aspirations and resources	Bonds, links and ties from the surroundings	Surroundings as the centre

Table 2 Observed relations between the Elements of Network Pictures and the Sub-Dimensions of Dimension 1 – Actors’ Focus

1) When the focus was on himself/herself, respondents would speak extensively in the first person, often using expressions such as “I”, “me”, “my”. Because they considered themselves as being at the centre of everything, they would talk mostly about actors and situations that were directly related to them. Some typical expressions these respondents used when describing their surroundings and which reflected a perception of control and ownership over the surrounding actors and over the company’s business activity were as follows:

- . “... I do not have any relations with this company.”
- . “I am here, in the middle of this ecosystem.”
- . “I have a business component outside my company, in which I develop services, projects...”.
- . “...my clients are also supplied by my competitors.”

2) If the respondents perceived their company as being the ‘hub’ of the network, that is, holding an ‘egocentric’ view, they placed most emphasis on the company they worked for. These respondents would talk more intensively about things that were somehow related to the company, frequently using the expressions “*we*” and “*our*” and using the company’s name to describe something. They made statements such as the following:

- . “...*we believe that we have...*”.
- . “...*our strategy is...*”.
- . “*We are increasingly looking for sectors where we can grow...*”.
- . “... *we think that we have...*”.

3) Finally, respondents might speak predominately about the company’s surroundings, identifying their company as merely one of many elements that were part of the overall network. They would talk strongly about what they understood as being the actors and processes between and with those external actors. They would highlight the impact these could have over their own company’s business activity. These respondents used expressions such as:

- . “...*it is very important having relationships with the data informers [...] that provide information on the market, so that one can have an idea of what is going on.*”
- . “...*for me is my competition and can’t leave them out of my sight...*”.
- . “...*there is a trend for growing sector specialisation...*”.
- . “*We are within this Universe.*”

5.3.1.2 Dimension 2 – Processes’ Focus

When thinking about the surrounding processes or relationships, individuals may think with greater intensity about some particular relationship dimension(s). Dimension 2 allows for a classification of individuals’ views of the world, in terms of which element(s) of relationships individuals think about with greater intensity. While describing processes that took place in their surroundings, respondents placed greater focus 1) on actor bonds, 2) on resource ties or 3) on activity links [see Table 3].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
2. PROCESSES’ FOCUS	SCALE	STRUCTURE	PROCESSES	POSITIONING
<i>2.1. Actor Bonds</i>	-----	-----	Emphasis on actor bonds	-----
<i>2.2. Activity Links</i>	-----	-----	Emphasis on resource ties	-----
<i>2.3. Resource Ties</i>	-----	-----	Emphasis on activity links	-----

Table 3 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 2 – Processes’ Focus

1) If respondents placed greater emphasis on actor bonds, when talking about relationships they would highlight mainly the atmosphere and social content of those relationships: issues of power-dependence, commitment, closeness-distance, cooperation-conflict, expectations and understanding between the parties. They would place great emphasis on the importance of managing expectations and the development of inter-personal relations. The processes that took place between and with surrounding entities were described as follows:

. *“... I maintain a personal relationship, but it is more an exchange of information on a personal level...”*.

. *“That supplier’s facilities are very near and that is a huge advantage for us....”*.

. *“...the personal aspect of the people that are on the other side is very important. And one of the trades that our company must have is that it has to know how to go beyond the professional and understand the relational. It's a lot about creating empathy...”*.

2) Respondents that placed greater focus on resource ties would speak in detail about how actors’ resource collections (technical, commercial, administrative know-how and tangible elements such as man-power, equipment, plant and knowledge) are tied by relationships. They would speak extensively about physical or knowledge related resources (service capabilities, products or facilities) that were jointly built in the relationship by the involved parties and commonly used expressions such as:

. *“...we have a Key Account Manager...”*.

. *“...there are rehearsals for raw materials...”*.

. *“...there is a human investment...”*.

. *“...being an in-house production unit...”*.

3) Finally, respondents might give greater importance to companies’ activity links, referring strongly to transfer or transformation of resources between actors. These respondents would mostly or solely show interest in the underlying interdependent activities performed by the parties involved in relationships: coordinated activities of logistics, designing, engineering, stocking and production. They used expressions such as:

. *“...since we supply in a just-in-time regime...”*.

. *“...we have some cross-relations in the technology area...”*.

. *“We have to develop some joint work in order to”*.

. *“...also minimises stocks through joint production planning...”*.

5.3.1.3 Dimension 3 – Actors / Processes’ Focus

With this Dimension the aim is to classify how individuals perceive the world by considering if they think about the network as a set of relevant actors (networks as elements of scale and structure) or in terms of relationships between those actors (network as the element of processes). This dimension could assume the following Sub-Dimensions: respondents either placed greater emphasis 1) on the surrounding actors or 2) on the relationships between and with those actors [see Table 4].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
3. ACTORS / PROCESSES’ FOCUS	SCALE	STRUCTURE	PROCESSES	POSITIONING
3.1. Actors	Considerable Number	Actors’ problems, aspirations and resources	Hardly mentioning bonds, links or ties	-----
3.3. Processes	-----	How actors’ problems, aspirations and resources can be linked	Talking extensively about bonds, links and ties	-----

Table 4 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 3 –Actors / Processes’ Focus

1) If the focus was on the surrounding actors, respondents would speak more intensively about issues of scale and structure of their surroundings, describing the network as a set of relevant actors. Speaking in terms of a network, respondents would give greater importance to the surrounding ‘nodes’ than to the ‘links’ between those nodes. These respondents frequently used expressions such as:

- . “...they have the typical problems that other Portuguese companies have: great lack of organisation, personnel training levels are low...”.
- . “...it is an interesting company, with good health, which has been growing by making acquisitions of other companies or growing by its own means....”.
- . “...many multinationals were led into reviewing their industrial units’ configurations, looking for concentration [...] and optimisation of their stocks...”.

2) If, on the other hand the focus was placed on relationships, respondents would describe the network as a set of relevant processes between actors. The surroundings were usually described in the following terms:

- . “We have a very balanced relationship with suppliers...”.
- . “...in operational terms, they have inbound logistics, which traditionally consists in bringing trucks with plastic containers from a faraway location, which suppliers are faraway...”.
- . “...the relationship is not professional but very personal, based on the familiar features of the relationships that exist between the two companies. We are the leaders in the relationship.”

5.3.1.4 Dimension 4 – Focus on Actors’ Features

Individuals may think about actors more intensively in terms of some structural features than others. This dimension was found to comprise the following Sub-Dimensions: respondents placed greater emphasis on actors’ 1) resources, on their 2) aspirations or on their 3) problems [see Table 5].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
4. ACTORS’ FEATURES	SCALE	STRUCTURE	PROCESSES	POSITIONING
<i>4.1 Actors’ Resources.</i>	-----	Actors defined by their Resources	-----	-----
<i>4.2 .Actors’ Aspirations</i>	-----	Actors defined by their Aspirations	-----	-----
<i>4.3. Actors’ Problems</i>	-----	Actors defined by their Problems	-----	-----

Table 5 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 4 – Focus on Actors’ Features

1) If respondents spoke more intensively about actors’ resources, they would describe the surrounding actors in terms of the assets they held or could have access to through their relationships. These respondents said things such as:

- . *“Alpla’s major resources are the old influences since they are very well positioned in the market... old relations, good contacts...”*.
- . *“They are technologically advanced and enjoy an image of technological ability and supplying quality...”*.

2) Respondents who spoke mostly about actors’ aspirations would classify the surrounding actors in terms of function of the goals they tried to achieve while interacting with them. Some typical expressions used by these respondents were:

- . *“They wanted to have a larger market share and for that they invested enormously in their facilities”*.
- . *“...they want to go through a restructuring process but are not able to...”*.

3) Finally, respondents who described the surrounding actors in terms of the problems they held would portray those actors in terms of the difficulties they faced while interacting. It was usual for these respondents to use expressions such as the following to talk about the surrounding actors:

- . *“...they are arrogant, inflexible, and technically distant, with high costs...”*.
- . *“Refrige can’t understand that there are major problems between the Portuguese and the Spanish market.”*

5.3.1.5 Dimension 5 – Focus on Time Span

Individuals' may think with different levels of intensity about distinct periods of time. Dimension 5 can be used to classify how individuals 'see' the network in terms of the time period they consider more important. The following possibilities were identified: respondents placed greater focus 1) on past events, 2) on present events or 3) on future events [see Table 6].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
5. TIME SPAN	SCALE	STRUCTURE	PROCESSES	POSITIONING
<i>5.1 Past Events</i>	Considerable Number	What were the problems, aspirations and resources in the past	What were the bonds, links and ties in the past	What was actors' positioning in the past
<i>5.2 .Present Events</i>	More restricted number	What are the current problems, aspirations and resources in the present	What are the bonds, links and ties in the present	What is actors' positioning in the present
<i>5.3. Future Events</i>	Restricted Number	What will be the problems, aspirations and resources in the future	What will be the bonds, links and ties be in the future	What actors' positioning will be in the future

Table 6 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 5 – Focus on Time Span.

1) Respondents whose focus was mainly on past events would describe their surroundings by speaking more intensively about past experiences and these could correspond to situations that they may or may not have been through, but that considered relevant. They frequently used expressions such as:

- . *“This was not that true in the past but it has been getting some balance.”*
- . *“...it was a very innovative project...”*.
- . *“I remember some situation from the past...”*.
- . *“...In those times, it was a family owned, typically familiar...”*.

2) Respondents that focused mainly on present events would speak most of the time about what the current situation of actors or processes was; not showing much interest in knowing how they got to that situation or how it would evolve. The surroundings were described in the following ways:

- . *“... at this moment [...] we are increasing the capacity.”*
- . *“Nowadays, the final customer is probably the one that influences the most...”*.
- . *“It’s a difficult relationship and also quite pro-active...”*.
- . *“...it is going through a difficult moment and therefore it is normal that they have other kinds of concerns.”*

3) Finally, if the focus was on future events, respondents would show an interest in what could happen to actors or relations. These respondents would also frequently speak extensively about what they believed to be their company’s strategic options. Typical expressions used by respondents when talking about their surroundings were for example:

- . “... potentially we will have to be very flexible to overcome the situations and to go a different way...”.
- . “... as the company grows, it’s natural that there will be a need to increase financial control...”.
- . “Although every company is moving in that direction, that company is a bit more ahead.”

5.3.1.6 Dimension 6 – Functional Focus

Individuals may perceive, or not, the network as a multi-disciplinary system. Dimension 6 allows for the classification of individuals’ views of the world in terms of multi-disciplinary character, by identifying whether there is any particular function they place greater emphasis on. Three possible situations were identified for this dimension: respondents centred their attention 1) solely on their own function, 2) solely someone else’s function, or 3) on several functions. In the latter case, they could be said to not have a functional focus [see Table 7].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
6. FUNCTION	SCALE	STRUCTURE	PROCESSES	POSITIONING
6.1 Own Function	Restricted Number	Problems, aspirations and resources linked to own functions	Bonds, links and ties implied in own function	Self as the centre
6.2. Other’s Function	Restricted Number	Problems, aspirations and resources linked to (a) function played by another	Bonds, links and ties implied in other’s functions	Self as peripheral
6.3. No Functional Focus	Considerable Number	Problems, aspirations and resources in general (no specific function)	Bonds, links and ties in general (no specific function)	-----

Table 7 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 6 – Functional Focus.

1) If respondents’ focus relied on their own function they would speak most intensively about actors and processes somehow associated with their function, reflecting an obvious restriction in the number of issues they considered as relevant. It would be common for respondents to frequently make use of technical expressions associated with the specific roles played in the organisation. For example, Commercial Directors with focus on own function typically used expressions such as:

- . “Competitors are interesting first of all because it’s important to know your enemy to win the battle.”

The RM (Ram Materials) Purchasing Director on the same matter said, for example:

. *“I don't have a clue if there are relations between clients. [...] That is very, very far away from this business area...”*.

. *“I come from raw materials and supply and before, those were terrible times, when there was a lot of tension, serious production problems that originated serious problems...”*.

Technology Directors with a technological focus commonly used the following type of expression:

. *“However [this industry] is strongly technological, with a potential for innovation or a considerable open space for innovation...”*.

. *“Technologically speaking, it comes around and they tell us and inform us about the new products...”*.

. *“They are a high level competitor and we are always trying to see what they are doing: they are technical benchmarking for us.”*

2) Respondents could articulate their view of the world by highlighting a function played by others, speaking mostly about that function's related topics. As in the previous situations, this implied that they restricted the number of actors and processes they would consider as relevant. For example, Commercial Directors who emerged to have a focus on a function different from their own said things such as:

. *“In the meetings that take place with RM suppliers, all day-to-day problems that have been taking place can be discussed.”*

. *“...we are in strategic relations with our transport and convey system suppliers, raw materials, equipment and machinery.”*

The RM Purchasing Director used expressions such as follows:

. *“.. our commercial relationship is a very technological one...”*.

. *“... was a very interesting project and innovative in technological terms.”*

The following expressions were frequently said by Technical Directors while placing focus on other people's functions:

. *“I think that our competitors know some things about us, maybe more than what we know about them...”*.

. *“...what the raw material suppliers try to do is obviously to convince us to buy their products, but they also go to these companies (the clients) with institutional presentations...”*.

3) One last possibility would be for respondents to speak about issues that were associated to more than one function. These people would talk intensively about issues that were associated with several functions. The examples given above for the two other possible situations in terms of functional focus included six directors, two from each function. In this case where there is no functional focus, what could happen would be for example, the

commercial directors would use expressions either from 1) above, i.e. talking about own function, or from 2) above, that is talking about someone else’s function.

5.3.2 Group 2 - Weight

5.3.2.1 Dimension 7 - Normative Weight

Individuals may believe they know (or not) what should or should not be done in the network so that success can be achieved in business practices. Dimension 7 allows for the classification of individuals’ views of the network in terms of normative weight. Two contrasting possibilities were identified: 1) respondents either held a normative view or 2) a non-normative one [see Table 8].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
7. NORMATIVE	SCALE	STRUCTURE	PROCESSES	POSITIONING
<i>7.1. Normative</i>	-----	What are actors’ problems, aspirations and resources	How the bonds, links and ties must be	Own view as critical
<i>7.2. Reference</i>	-----	What he thinks problems, aspirations and resources are about	Descriptive view of bonds, links and ties	Own view as peripheral

Table 8 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 7 – Normative Weight

1) If respondents held a normative view, they would hold a prescriptive or regulatory view of things, indicating what they believed to be the norms and rules that applied to their surroundings and if there was non compliance it would lead to sanctions of some sort. When talking about the network they would frequently use the expressions “what *must / should / has to happen is*” and some of expressions that these respondents used were:

- . “*To renew the contracts, we have to do two things: we have to be competitive which means having low prices (reflecting a sexy price) and to guarantee high quality.*”
- . “*...has to be very strong as a business partner...*”.
- . “*...and try to give it added value by the packaging aspect, or by the industrial production. And for that, we have to know our suppliers very well.*”
- . “*...we will only be able to survive if we are able to be in the front line...*”.
- . “*..., there is a need for maintaining a continuous human relationship [with suppliers] because...*”.

2) On the other hand, respondents could have a non-prescriptive or descriptive view of things, using to a great extent expressions such as “*what can / usually / might happen is...*” to talk

about the network. Respondents would consider their view of things as being merely an opinion, one without prescriptive weight. Typical expressions used by respondents with a view of this nature were as follows:

- . “...and that is more or less how we behave...”.
- . “...we try to be very close to them.”
- . “...sometimes we may give less attention to these...”.
- . “Typically, what we do is...”.
- . “Usually, both sides take the initiative.”

5.3.2.2 Dimension 8 - Moral Weight

Individuals’ views of the world may exhibit different levels of an underpinning moral philosophy and with Dimension 8 it is possible to classify those views according to the associated moral weight. Two contrasting possibilities were identified: respondents were either shown as having 1) a sense of what should/should not happen in their surroundings or 2) held a view without specific moral standards [see Table 9].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
8. MORAL	SCALE	STRUCTURE	PROCESSES	POSITIONING
<i>8.1. Sense of Should</i>	-----	-----	Moral view of bonds, links and ties ("should be")	Own view as critical
<i>8.2. Just a View</i>	-----	-----	A view of bonds, links and ties without any moral weight	Own view as peripheral

Table 9 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 8 – Moral Weight

1) If respondents held a moral view, they would look at the network from an ethical perspective, frequently making reference to expected or existing ethical behaviours. They would consider their perception of things as an imperative for what should and should not happen in the network, that is, what was morally correct and what was not. These respondents made extensive use, and in an almost passionate way, of expressions such as:

- . “...he is doing things that I wouldn't l do...”.
- . “We always pay on time; we are not a company that does not do what it has agreed...”.
- . “... but it's a “job for the boys”...”.
- . “There is a permanent ethic of communication. This is not the sort of company...”.
- . “Where is the lobby in mutual helping...”.
- . “...it is in fact necessary to transform and to recycle the already used products.”
- . “There is an attempt to have certain ethical behaviour...”.

2) Respondents who looked at the network without a moral weight would not impose ethical behaviours on what was happening in their surroundings. The personal ethical principles potentially held by these respondents appeared to not significantly affect their perception of the world and business practices. There were a few issues that some of these respondents discussed merely from a business and economics angle, whereas the more ethically minded chose to assess these same issues from a moral standpoint (e.g. environmental related issues such as recycling). These respondents described their viewpoints in following ways:

. *“I do consider it important that we are once again within this recycling world because our survival goes through there...”*.

. *“It's very critical for us the fact that our President occupies an important positioning in national and International associations.”*

. *“...in terms of image it is important for Logoplaste to be associated with this recycling organism.”*

. *“... and anyway I do not worry much about our environmental impact...”*.

5.3.2.3 Dimension 9 – Weight of Knowing What is Going on

Whilst some individuals may consider it important to be aware of what is taking place in the network, no matter how much it is related to their activity, others may not consider it that relevant. Dimension 9 allows for the classification of the way individuals ‘see’ the network with regards to this particular aspect. Respondents considered knowing what was going on in their surroundings as 1) being important or as 2) not being that important [see Table 10].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
9. KNOWING WHAT IS GOING ON	SCALE	STRUCTURE	PROCESSES	POSITIONING
9.1. Important	Considerable Number	Important considering problems, aspirations and resources	Importance of knowing what bonds, links and ties are	Individual and company as peripheral
9.2. Not Important	Restricted number	Not important considering problems, aspirations and resources	Not important knowing what bonds, links and ties are	Individual and company as central

Table 10 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 9 – Knowing what is going on

1) If respondents considered it was important to know what was going on, they would clearly express their desire to make the effort to know as much as possible about the network, even knowing about actors and processes not directly related to their activity. They often claimed that the same attitude should be undertaken by their company. Respondents who considered it important to what was going on described their surroundings as follows:

- . "...we don't know enough about what competitors are doing."
- . "... be in the lead of what is happening, to direct what is important for the company..."
- . "...all of us that are part of the company must have a sense of the business and we must have a notion concerning who are the partners involved."
- . "...it is very important having relationships with the data informers like Nielsen [...] that provide information on the market, so that one can have an idea of what is going on."

2) On the other hand, respondents that did not consider important knowing what was going on in their surroundings would not speak very often about issues that were not directly related to them and sometimes even claimed not to hold any interest in finding out more information about those entities or processes. These respondents commonly used expressions such as:

- . "Me, relations with suppliers, I am very distant..."
- . "I am very ignorant in this area and I haven't been worried with recycling matters, legal issues or lobbying. On a day to day basis, I don't deal with this."
- . "In some cases I have an idea on what they are doing, in some others I don't..."
- . "Knowing more about competitors hasn't been so far a key factor..."
- . "I don't have a clue if there are relations between clients..."
- . "On this issue, that colleague of mine doesn't know anything. But he brings us other things that we don't have."

5.3.2.4 Dimension 10 – Weight of Internal Procedures

Individuals may consider knowing what is going on ‘within’ actors as more or less relevant for their business activity. With Dimension 10 it is possible to classify individuals’ views of the world regarding the weight they give to actors’ internal procedures. Two sub-dimensions were identified for this dimension: respondents either chose to 1) highlight throughout the interview the internal procedures associated with their own company and/or other companies, or 2) they preferred talking mostly about external procedures between actors instead of internal ones [see Table 11].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
10. INTERNAL PROCEDURES	SCALE	STRUCTURE	PROCESSES	POSITIONING
10.1. Relevant	-----	Relevance of internal problems, aspirations and resources	Important knowing what internal bonds, links and ties are	-----
10.2. Not Relevant	-----	Non Relevance of internal problems, aspirations and resources	Not import knowing what internal bonds, links and ties are	-----

Table 11 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 10 – Weight of Internal Procedures

1) If respondents considered actors' internal procedures as relevant, then without being asked to do so they would intensively talk about what going on within any actors. Usually, these respondents would use the knowledge they had of their company's internal procedures and that of other actors to talk about the processes that took place between and with them. Commonly, respondents who considered companies' internal procedures as relevant used expressions such as:

. *“This is the value chain of a typical multinational, our client [...] they have a value chain which always has support activities such as purchasing, technical and technological support, finance, IT and others, such as human resources. But in operational terms, they have in-bound logistics...”*.

. *“They try not to be dependent on internal scientists regarding technologies...”*.

. *“...we don't produce and then stock it and transport and then deliver; instead, we produce and deliver immediately.”*

. *We [at LPTD] have what we call the internal clients, which are the structures and there is also a relationship between them [...]; I have a business component outside Logoplaste, in which I develop service, project, development for external clients and the aim is to integrate, if possible, all of it into the Logoplaste Universe.”*

2) On the other hand, respondents could consider actors' internal procedures as not being relevant, hardly ever mentioning issues associated with companies' internal operations. There is no set of expressions that can be identified as being used by these respondents, because this perception was identified by the omission of references to how important they considered companies' internal procedures.

5.3.3 Group 3 -Specificity and Coherence

5.3.3.1 Dimension 11 - Coherence with the Board's Explicit Identity

Individuals may agree more or less with the principles that the company's board explicitly states for the organisation. Dimension 11 allows for a classification of how individuals perceive the world by considering the extent to which their views are coherent with their board's explicit identity. Two situations were identified: respondents either perceived the network in terms that could be said be 1) coherent with their company board's explicit identity or 2) they were non-coherent with that identity [see Table 12].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
11.COHERENCE WITH BOARD'S EXPLICIT IDENTITY	SCALE	STRUCTURE	PROCESSES	POSITIONING
11.1. Coherent	-----	Coherence with board's views on actors' problems, aspirations and resources	Coherence with board's views of bonds, links and ties	Coherence with board's views of company as central or peripheral
11.2. Non-coherent	-----	Non-coherence w/ Board's views on actors' problems, aspirations and resources	Non-coherence with board's views of bonds, links and ties	Non-coherence with board's views of company as central or peripheral

Table 12 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 11 – Coherence with Board’s Explicit Identity

1) If respondents saw the network coherently with the board’s explicit identity, they would describe the network without dissenting to any great extent from that identity. It was possible to identify for Logoplaste what was its board’s explicit identity: it consisted of placing great focus and investing in relations with clients (a ‘can do’ attitude, responding with innovation), on the team (growing the business and ourselves together’), on quality (‘right the first time, on time, every time’), on principles of integrity (‘open, direct, respectful’), investing in the surrounding community (active in social work and environmental and in cultural issues (‘feeling at home anywhere we work’). Respondents from this company, who perceived the network coherently with the board’s explicit identity, frequently used expressions such as:

- . “...we are flexible, we have hole-through-the-wall and we have costs. Within this perspective of what our company is, this client is perhaps the most representative example of what nowadays is a very good relation...”.
- . “And we know how to choose the best solution on behalf of our clients. This is where we are specialists.”
- . “...clients are central. I truly believe that this works like this...”.
- . “...our basic doctrine is one of liberalism, of prizing merit, innovation capacity, people's development, the effort developed by the company, but everything is free.”
- . “...we do things because we believe in them.”

2) Interviewees who saw the network in terms which were non-coherent with the board’s explicit identity, would defy most or some of the principles underlying that identity when describing the network. They demonstrated how they believed in certain principles that were incoherent with the company’s disseminated image. If aware of this non-coherence, in most cases, respondents would identify their view of the network as more adequate than the ones underlying the board’s explicit identity. Moreover, some respondents would even criticise some elements of the board’s explicit identity. With regards to the elements of the explicit

identity that were identified for Logoplaste’s board in the previous paragraph, these respondents typically described the world as follows:

- . “...and the Group is much more formally structured than it is willing to admit.”
- . “...also with the collaborative spirit a bit different from those functional areas which are compartmentalised and which don’t talk amongst themselves...”.
- . “...and anyway, I do not worry much about it our environmental impact...”.
- . “And even our CEOs are everything except low profile and therefore, there is a certain tendency for stars!! Personally, it’s not my style since I’m generally low profile but here, we are compelled, we can’t... ”.
- . “...the most important entity is the clients. [...] It’s not because it is in my manual, it is in my chip. I think that it is in the chip of everyone in this company....”.

5.3.3.2 Dimension 12 - Situation Specificity

Individuals may think about situations or events with different levels of detail. With Dimension 12 it is possible to classify how individuals perceive the world regarding the issue of situation specificity. Two possibilities were identified: respondents talked mostly about 1) general situations or 2) specific ones [see Table 13].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
12.SITUATION SPECIFICITY	SCALE	STRUCTURE	PROCESSES	POSITIONING
<i>12.1. General Situations</i>	-----	-----	Talking of specific bonds, links and ties	-----
<i>12.2. Specific Situations</i>	-----	-----	Talking of general bonds, links and ties	-----

Table 13 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 12 – Situation Specificity

1) If respondents talked about general situations, they would not mention very often particular circumstances, instead speaking about universal processes and events. These respondents frequently used expressions as follows:

- . “In the past, this industry had many players (small and medium size companies that easily invested in this kind of technology and produced plastic containers) and nowadays a concentration process is taking place is ...”.
- . “We exchange deals, usually we meet with all suppliers once or twice per year and we try understanding what they are doing, what is new, the problems we have, well, essentially what we can do for each other.”
- . “...before plastic replaced PVC, there were many quality problems in production due to the poor quality of raw materials...”.

2) On the other hand interviewees who talked mostly about specific situations, without being asked to do so, would frequently talk about particular episodes or events that took place with a particular client or supplier or others. These respondents gave several examples of particular situations, such as:

- . *“For example, we conducted a study of a modification for a material of a container and that was our initiative.”*
- . *“Once, this competitor had to lower their prices too much because of us (we made an offer for supplying at a lower price)...”.*
- . *“I consider this client, in terms of structure and development, as the most advanced company in the market, within the packaging concept.”*
- . *“... on current trends in our area, we talk about single dose due to the decreasing size of families and small doses since there are families with one person only...”.*

5.3.3.3 Dimension 13 - Actors’ Specificity

Individuals may think with distinct levels of detail about the surrounding actors and with Dimension 13, these actors’ specificity can be used to classify individuals’ views of the network. Respondents either talked more intensively about 1) groups of actors or 2) specific actors [see Table 14].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
13. ACTORS’ SPECIFICITY	SCALE	STRUCTURE	PROCESSES	POSITIONING
13.1. Groups of Actors	-----	Problems, aspirations and resources of groups of actors	Bonds, links and ties of groups of actors	-----
13.2. Specific Actors	-----	Problems, aspirations and resources of specific actors	Bonds, links and ties of specific actors	-----

Table 14 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 13 – Actors’ Specificity

1) If respondents referred mostly to groups of actors, even when asked to describe situations with specific actors they would speak mostly in terms of “clients”, “suppliers”, “competitors” and not about specific entities. They would not be able to provide much information or would avoid talking about specific parties. These respondents used phrases such as:

- . *“Consumers want environmentally friendly containers and increasingly attractive containers.”*
- . *“...many multinationals were led into reviewing their industrial units’ configurations....”.*
- . *“The basis of these technology suppliers is on the one hand trying to have permanent relations with companies like ours (clients) and with innovation.”*

2) On the other hand, respondents who spoke about specific actors would regularly mention specific names of individuals, as well as specific departments or companies. And when asked to talk about particular companies, the interviewee would provide rich descriptions. They were frequently found saying things similar to the following:

. *“But this also happens, like with Danone, and Nestle, in which Logoplaste takes in whatever it is necessary to do directly from the marketing...”*

. *“... and the clients all need a "lifting" (changing their image or reformulating and shaping) every 3 or 4 years. Coca-cola is obviously not one example.”*

5.3.4 Group 4 – Overall view of the Surroundings

5.3.4.1 Dimension 14 – Overall Stereotyping

Individuals may use distinct forms of visual representation or framework to represent the surrounding network. Dimension 14 looks into these forms used by individuals and classifies their views according to the extent of stereotyping. Two possible forms of representation were identified: respondents either described their surroundings as a 1) network or 2) as some other form of representation such as: supply chains, chains of value or another visual form of representation [see Table 15].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
14.STEREOTYPE	SCALE	STRUCTURE	PROCESSES	POSITIONING
<i>14.1. Network</i>	Considerable number	Third parties' problems, aspirations and resources	Bonds, links and ties with direct and indirect parties	Company as peripheral
<i>14.2. Supply Chain or Other</i>	Probably more restricted number	-----	Bonds, links and ties solely with direct parties	Company as a part of the chain

Table 15 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 14 – Stereotype

1) If respondents saw a Network, they would describe the interconnectedness of their surroundings, talking about processes between actors and how these processes could affect the business activity, not only of those that were involved but also others'. They would also highlight the relevance of the concept of positioning to understand the dynamics of the network and identify their company as part of a *whole*. Typical expressions found to be said by these respondents were as follows:

. *“...our strategic positioning depends on the positions of these companies.”*

. *“...we know about this competitor because many times we are told about them by the companies that we supply.”*

- . “...there is a very strong interconnection in all of this, in such a way that the containers that we produce are according to what the society expects from us.”
- . “I have knowledge of those relations that take place between clients and their clients...”.

2) Otherwise, if respondents saw the surrounding as some other form of representation such as a supply chain, a value chain, they wouldn’t perceive or describe the interconnectedness between relationships. Respondents would articulate their views in terms that could be considered as being less complex than the ones corresponding to a network view: usually ‘seeing’ unidirectional flows (from supplier to the final consumer), not specifying potential relations that could take place outside of this straightforward flow or between entities that were not sequentially positioned. The following types of statement were frequently found for these respondents:

- . “If we had what we call a supply chain, it is quite obvious that this company is nowadays a seriously important player...”.
- . “This is the value chain of a typical multinational which has business in home or body care, typically our clients.”
- . “When I think about the company, I think about plastic containers and then I think about the business model.”
- . “We have what we call the internal clients ... [and] I have a business component outside the company, in which I develop service, project, and development for external clients...”.

5.3.4.2 Dimension 15 - Overall Consistency

With Dimension 15 it is possible to classify how individuals perceive the world by assessing the extent to which they ‘see’ things in a more or in a less comprehensively coherent way. On a simplified basis, two contrasting sub-dimensions were identified: respondents held an overall 1) consistent view or 2) an in conflict view [see Table 16].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
15. OVERALL CONSISTENCY	SCALE	STRUCTURE	PROCESSES	POSITIONING
15.1. Consistent	-----	Comprehensive consistency while talking about actors’ problems, aspirations and resources	Comprehensive consistency while talking about bonds, links and ties	Comprehensive view of company as central or peripheral
15.2. In Conflict	-----	Lack of consistency while talking about actors’ problems, aspirations and resources	Lack of consistency while talking of bonds, links and ties	Lack of consistency talking about company as central or peripheral

Table 16 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 15 – Overall Consistency

1) If respondents held a consistent view, throughout the interview they would never (or rarely) say something that could be inconsistent with their previous statements. Respondents with a consistent view would say things as follows:

- . *“... it is also an industry of small series.” and “right now, our company has the right formula: very flexible, [...] with a very low pyramid...”*.
- . *“The way we relate to Danone, as well to P&G is also in function with their Latin and Saxon base, respectively” and “our trend is to be much more formal with P&G than with Danone...”*.
- . *“I do not know if you are aware but the negotiation of raw materials within our company is very closed...” and “suppliers go in and out. Why? Because they spend their life negotiating, spend their life with the concept of where can I get the better price...”*.

2) On the other hand, respondents who held a predominantly ‘in conflict’ view would frequently say things about actors or processes that were in contradiction to other some other things they had said about those same actors or processes, at sometime in the interview.

Examples of some of the inconsistencies were as follows:

- . *“There is not really a motive for drawing the company in the middle; it’s more an emotional issue...” and “I think that in terms of importance, the multinational companies are also the ones who have a bigger capacity to influence the others...”*.
- . *“I know about relations with suppliers... even this week I visited two trying to understand what they are doing...” and “...I am not sure if I am the most appropriate person to tell you about the relations we have with suppliers... because [...] here, it is the director of the plants and the person responsible for the purchases... [...] that has relations with them.”*

5.3.4.3 Dimension 16 – Overall Structuredness

Individuals may perceive the world in a more or less structured and organised way. With Dimension 16, individuals’ views of the world are classified with regards to their overall structuredness. Two contrasting possibilities were considered: respondents showed themselves as having a predominantly 1) structured view of their surroundings or 2) an unstructured one [see Table 17].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
16. STRUCTUREDNESS	SCALE	STRUCTURE	PROCESSES	POSITIONING
16.1. Structured	-----	Structured description of actors’ problems, aspirations and resources	Structured description of bonds, links and ties	-----
16.2. Unstructured	-----	Unstructured description of actors’ problems, aspirations and resources	Unstructured description of bonds, links and ties	-----

Table 17 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 16 – Structuredness

1) If respondents held a mostly structured view of the network, throughout the interview they would always follow a very well defined and thought through line of thinking, where actors and relationships or situations were systematically positioned and their role explained. Example of a structured view was as follows:

... Logoplaste is inserted into a group of services suppliers related to containers. [...] I can draw the different companies that we fundamentally have relations with, which are different multinationals that we work for. Logoplaste supplies the containers in a partnership regime. [...] These multinationals are also supplied by our competitors, who are in the market and who are important players worldwide... Here we have all the suppliers who will be within a group... And then, in the middle of all of this, that is to say around this entire organisation, we have regulating entities...".

2) On the other hand, if respondents held an unstructured view, when describing the network they would commonly go back and forward and adding new entities and new relations to the representation and their explanation. Sometimes it was possible to assess how structured were respondents' views just by analysing their explanation of the provided representation of the network. These respondents would say things like:

... "Imagine!!! I forgot to include the competitors in my drawing..."
... "and therefore I question myself: "where am I going to place competition, suppliers and others on this piece of paper? And this is due to the fact that for me, in a certain moment in time, they all have to be in the first line."

5.3.4.4 Dimension 17 – Overall Stasis

Individuals may think about the network in more or less dynamic or evolving terms. With Dimension 17, individuals' views of the network can be classified in terms of their overall stasis. The following sub-dimensions were identified: respondents either held a 1) mainly evolving view of the network or 2) a mainly static one [see Table 18].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
17. STASIS	SCALE	STRUCTURE	PROCESSES	POSITIONING
<i>17.1. Evolving</i>	-----	Evolving view of actors' problems, aspirations and resources	Evolving view of bonds, links and ties	Evolving view of positioning
<i>17.2. Static</i>	-----	Static view of actors' problems, aspirations and resources	Static view of bonds, links and ties	Static view of Positioning

Table 18 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 17 – Stasis

1) If respondents held an evolving view of the network, they would describe actors and processes situated in more than one period of time, explaining how it got from one point to the other. These respondents typically said things such as:

. *“In the past, this industry had many players and nowadays the same that happens in the other industries is taking place, with concentration trends...”*.

. *“Consumers are increasingly environmentally aware and they are sensitive to prices.”*

. *“...many multinational were led into reviewing their industrial units’ configurations... [] This process is still in train.”*

. *“We are trying to improve our suppliers’ portfolio by...”*.

. *“It’s an extremely aggressive industry, constantly in mutation...”*.

2) On the other hand, if respondents held a static view, they would not introduce explanations very often about how actors or processes evolved between periods, preferring to describe their situation in particular moments of time. The following phrases were said by these respondents:

. *“I have some difficulty in describing the relationship with this client but surely it hasn’t changed much from 5 years to this part...”*.

. *“In the relation with this client, and in Portugal, there is nothing new... It’s like a wedding: a very cold relationship since everything is defined, the boundaries are perfectly established...”*.

5.3.4.5 Dimension 18 – Overall Broadness

The extent of broadness can be understood in several ways, depending on the definition given to what is broad and/or narrow and on the extent to which it integrates the degree of comprehensiveness. In this research project, broadness and comprehensiveness are considered independent notions and therefore assessed separately. Broadness is about the scope and wideness, while comprehensiveness is about content and about how specific and detailed the knowledge on a specific issue is. An individual may therefore show themselves, simultaneously, as having a broad and non-comprehensive view of the network. This will be the case if the individual sees an extended scope of actors or processes, but does not have detailed or specific information on those. Broadness is therefore closely associated, among other things, with the element of scale of the network, one of the suggested Network Pictures Dimensions.

Now that these definitions have been established, Dimension 18 and 19 can be operationalised. With Dimension 18, overall broadness, individuals’ views can be classified by how widely they ‘see’ the network. Two situations were identified: respondents either held a 1) broad view or 2) a narrow view of the network [see Table 19].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
18. BROADNESS	SCALE	STRUCTURE	PROCESSES	POSITIONING
<i>18.1. Broad</i>	Large Number	Mentioning many types of actors' problems, aspirations and resources	Bonds, links and ties of direct and indirect counterparts	-----
<i>18.2. Narrow</i>	Small Number	Mentioning restricted types of actors' problems, aspirations and resources	Bonds, links and ties of direct parties	-----

Table 19 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 18 – Broadness

1) Respondents with a broad view of the network would see a considerable number of actors and processes, usually including actors and processes that might not be directly related to their company's business activity. Respondents that held a broad view of the network said things such as:

. "...what the raw material suppliers try to do is obviously to convince us to buy but they go to these companies (the clients) with institutional presentations..."

. "...typical multinationals which have business in home or body care, typically our clients. [...]... support activities such as purchasing, technical and technological support, finance, IT and others, such as human resources [...], bringing trucks with plastic containers from a faraway locations, [...] our company inserts itself into this world... [...] our competitors [...] we are in strategic relations (this partnership) with our transport and convey system suppliers, raw materials, equipment and machinery. [...] and there still the filling equipment suppliers and warehouses."

2) On the other hand, interviewees who held a narrow view of the network would see a restricted number of actors and processes, usually including solely (some of) those who were directly related to the company's business activity. A narrow view of the network is not one that is better or worse than a broad one, but simply one that includes restricted number of actors and processes. These respondents used expressions such as follows:

. "I am very ignorant in this area and I haven't been worried with recycling matters, legal issues or lobbying. On a day to day basis, I don't deal with this."

. "The company, then the clients (which here are also designated by partners)... [...] We have the suppliers here to this side... [...] Then we have an element with two parts, which is the support for our business: IT and human resources, plus whatever. [...] I forgot to include the competitors in my drawing... "

5.3.4.6 Dimension 19 – Overall Comprehensiveness

As mentioned in the previous paragraphs on broadness, individuals may perceive the world in more or less specific, detailed and rich ways. With Dimension 19, it is possible to classify how individuals ‘see’ the world with the consideration of how comprehensive those views are. No matter how broadly or narrowly respondents’ perceived the network, they either viewed it 1) comprehensively or 2) non-comprehensively [see Table 20].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
19. COMPREHENSIVENESS	SCALE	STRUCTURE	PROCESSES	POSITIONING
19.1. Comprehensive	-----	Extensively describing actors' problems, aspirations and resources	Rich description of bonds, links and ties	Extensive description of others and self positioning
19.2. Non-Comprehensive	-----	Limited description of actors' problems, aspirations and resources	Poor description of bonds, links and ties	Restricted description of positioning

Table 20 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 19 – Comprehensiveness

1) If respondents perceived the network with a comprehensive view, they would talk about the surrounding actors and processes in a rich and detailed way, often including examples of both typical and abnormal situations. These respondents were frequently found saying things similar to the following:

- . *“It’s a relation that... since I have arrived to Logoplaste, it has been through several stages. Nowadays, it is going through a difficult stage because for what I understood, it is designated as a commodity and that is worrying.”*
- . *“Technology suppliers usually try to focus on a particular specialisation [...]. And they try to develop their competitiveness factor to the maximum: it’s obviously the prices of the equipment and the market technology and their performance in terms of costs and productivity.”*

2) If, on the other hand, respondents perceived the network in a non-comprehensive way, they would provide general and not specific descriptions, both of actors and processes. Typical things said by these interviewees were as follows:

- . *“I don't know about concrete situations but I imagine that it must be like that with my client. It's a relationship at two levels...”*
- . *“I am not able to say much about them. I know that they are very strong in the segment where our company works...”*
- . *“...they have the typical problems that other Portuguese companies have: great lack of organisation, personnel training levels are low, but well, this is my vague idea...”*

5.3.4.7 Dimension 20 – Overall Conflict or Collaboration

The network entails both conflict and collaboration situations. With Dimension 20 it is possible to classify how individuals perceive the world, by considering the extent to which they see it in terms of conflict or in terms of collaboration. The two following contrasting sub-dimensions were identified: respondents either saw their surroundings mostly 1) as conflict or 2) as collaboration between actors [see Table 21].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
20. CONFLICT OR COLLABORATION	SCALE	STRUCTURE	PROCESSES	POSITIONING
20.1. Power / Conflict	-----	Problems, aspirations and resources as a reflection of a struggle for power	Bonds, links and ties as a reflection of a struggle for power	Positioning as a tool for power
20.2. Collaboration	-----	Problems, aspirations and resources as a way to collaborate	Bonds, links and ties as a mean for collaboration	Positioning as means for collaboration

Table 21 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Dimension 20 – Conflict or Collaboration

1) If respondents saw the network mostly in terms of power/conflict then they would to a great extent mention situations of dependency, struggles for control of relationships, the influence played by others or by their company in the overall surroundings, strength related issues among other power related issues. The following sentences were said by respondents who saw their surroundings in terms of power / conflict:

- . “... sometimes, we also win and it feels great beating that competitor. But it wins more frequently...”.
- . “Raw material suppliers are world giants from the chemistry area and we try to get into their radar by concentrating our purchasing...”.
- . “We are lucky enough for not being dependent on one single product or client, which allows us to divide risks...”.
- . “...there are always limitations that come from their centralized and global policy, somehow conditioning the relationship.”

2) Alternatively, if respondents saw the network mostly in collaborative terms, then they would speak passionately about cooperation, teamwork and group effort between parties and also about other related activities which implied joint work, which had the aim of enhancing benefits for all the companies involved. These respondents typically said things such as:

- . “Our company supplies the containers in a partnership regime. We have an honest and open relationship with our partners...”.
- . “We also count on the suppliers’ flexibility, namely raw materials, so that they give us materials on consignment or they are ready to deal with these peaks.”

- . “...our just-in-time regime and also minimised stocks through joint production planning...”.
- . “...what I can do for them and what they can do for me.”
- . “We exchange opinions with suppliers, we share.”

5.3.4.8 Dimension 21 – Actors as Overall Providers For...

Actors provide services of diverse nature to different actors. With Dimension 21 individuals’ views are classified by looking at the ways individuals think about the nature of the service to their company that is provided by other actors. Two sub-dimensions were identified: respondents saw the surrounding actors as providers for 1) customised solutions or 2) for standardised products or services [see Table 22].

<i>Network Picture Dimension</i>	<i>Elements of Network Pictures</i>			
21.ACTORS AS PROVIDERS FOR...	SCALE	STRUCTURE	PROCESSES	POSITIONING
<i>21.1. Customized Problem Solutions</i>	-----	-----	Bonds, links and ties as means to provide customised solutions	-----
<i>21.2. Standardised Offers</i>	-----	-----	Bonds, links and ties as means to provide standardised solutions	-----

Table 22 Observed relation between the Elements of Network Pictures and the Sub-Dimensions of Network Picture Dimension 10 – Actors as Overall Providers for...

1) If respondents perceived actors as being providers for customised solutions, they would describe and explain how the processes between actors aimed at developing tailor-made products and services. These respondents would say things such as:

- . “They weren’t able to understand that their products didn’t suit us and there were other producers who would.”
- . “...the equipment and plants are increasingly flexible so that changes can be introduced in a rapid way.”
- . “Logoplaste supplies the containers in a partnership regime.”

2) On the other hand, respondents who perceived actors as being providers for standardised offers, would portray the processes that took place between actors as means to provide or obtain undifferentiated products or services. These interviewees typically used expressions as follows:

- . “We don’t have much necessity to influence them since they provide a standard product.”
- . “This competitor has not only in-plant solutions, but also multi-client plants; this sometimes enables them to have competitive advantages, because it takes complexity out of the relationship and they are able to supply clients which the volumes do not justify for an in-plant solution”.

5.4 Associations between Network Pictures Dimensions

Several associations between some of the identified Network Pictures Dimensions are expected to be identified when carrying out the second stage of the data analysis (i.e. coding or interpreting all the transcripts) [see Figure 14]. As a result of the operationalisation of Network Pictures Dimensions, it is this researcher's belief that some associations will emerge (e.g. a person having a narrow view would be expected to have predominantly a focus on himself). Moreover, these associations also result from this researcher's first impressions when carrying out the first stage of the data analysis, i.e. when identifying and operationalising mutually exclusive and what are considered to be descriptively exhaustive dimensions. The identification of grounds of consensus between people, result from identifying associations between Network Pictures Dimensions, may be relevant for partially addressing Research Question 4: "*Do Network Pictures allow for the identification of diversity between individuals' views of the world and between different network contexts and moreover do they allow capturing of other interesting phenomena?*". The associations that are likely to be observed are as follows:

. *Actors' Focus and Functional Focus*: Those respondents who saw themselves as being at the 'centre' of the network would be expected to see the world in terms of the function(s) they had in the company. They would consider their activity and therefore their function, as the most important aspect.

. *Actors' Focus and Importance of Knowing what is Going On*: It may be anticipated that those respondents who thought intensively about the network would show particular interest in knowing what was going on in their surroundings. Having a perception of the importance of the network's interconnectedness, they may be willing to scan and interpret further information.

. *Actors' Focus and Coherence with the Board's Explicit Identity*: It may be foreseen that those who saw themselves at the 'hub' of the network would have a view of the network which was not coherent with the board's explicit identity. Instead of integrating the company's explicit values into their own frameworks, these respondents would think and act according to their own personal values, not being worried with having a corporate perspective and preferring to speak their mind in a carefree way. For the opposite reasons, respondents who perceived their company as the 'hub' of the network would perceive things in terms that were coherent with the board's explicit identity.

. *Actors' Focus and Stereotyping*: It may be imagined that those who did not hold an egocentric view of the network and looked beyond their company would perceive the interconnectedness of their surroundings and therefore see it in what can be described as a network.

. *Actors' Focus and Broadness*: It may be expected that respondents who identified themselves as being at the centre of the network would hold a narrow view of their surroundings. As they would be mostly interested in actors and processes that were directly related to their activity, they would see a restricted part of the overall network.

. *Actors / Processes' Focus and Stereotyping*: It may be anticipated that those respondents who saw beyond the relevant actors of the network and looked at the processes between those actors, would see the surrounding in network terms. Because they thought about the relations that took place between actors, they would understand the interconnectedness underlying the network.

. *Actors / Processes' Focus and Broadness*: It is thought likely those who saw the network merely as a set of relevant actors would have a narrow view of it. They probably identified a vast number of actors, but did not consider the relationships that took place between them.

. *Focus on Time Span and Stasis*: It may be foreseen that those respondents who thought intensively about more than one time period would have an evolving view of the network. Because they thought about distinct periods, they could think and describe actors and processes evolving over time.

. *Focus on Time Span and Comprehensiveness*: It may be imagined that those who draw on past experiences to explain current situations would hold a comprehensive view of the network. By bringing to their current frames of reference elements from the past, they would achieve richer and more detailed insights.

. *Functional Focus and Broadness*: It may be expected that respondents who thought mostly about particular functions (one or a few) would hold a narrow view of the network. They were able and willing to see mostly, if not solely, actors and processes related to those functions. By so doing they restricted their views of the network.

. *Importance of knowing what is Going on and Stereotyping*: It may be anticipated that those respondents who considered it important knowing what was going on in their surroundings

would see the surroundings as a network. They would be expected to have an understanding of the interconnectedness of the surrounding environment, reflecting their greater willingness to know more about actors and processes that were not necessarily directly related to their activity.

. *Importance of knowing what is Going on and Broadness*: It may be expected that those who were not interested in knowing what was going in their surroundings, would think solely or mostly about actors and processes that were directly related to their own activity. Hence, these respondents would have a narrow view of the network.

. *Importance of knowing what is Going on and Comprehensiveness*: It may be anticipated that those respondents who did not show a great interest in knowing what was going on in their surroundings would see the network comprehensively, not talking in a rich and detailed way about the actors and processes that they identified.

. *Situational and Actor Specificity and Comprehensiveness*: It can be foreseen for those who spoke intensively about specific actors and /or situations, rich descriptions about particular actors or processes would be provided and thus they would hold a comprehensive view of the network.

. *Stereotyping and Broadness*: Respondents who saw their surroundings in terms that could be described as those of a network would perceive the interconnectedness between processes. Thus, it may be expected that these people would think about numerous actors and processes, reflecting a broad view of the network.

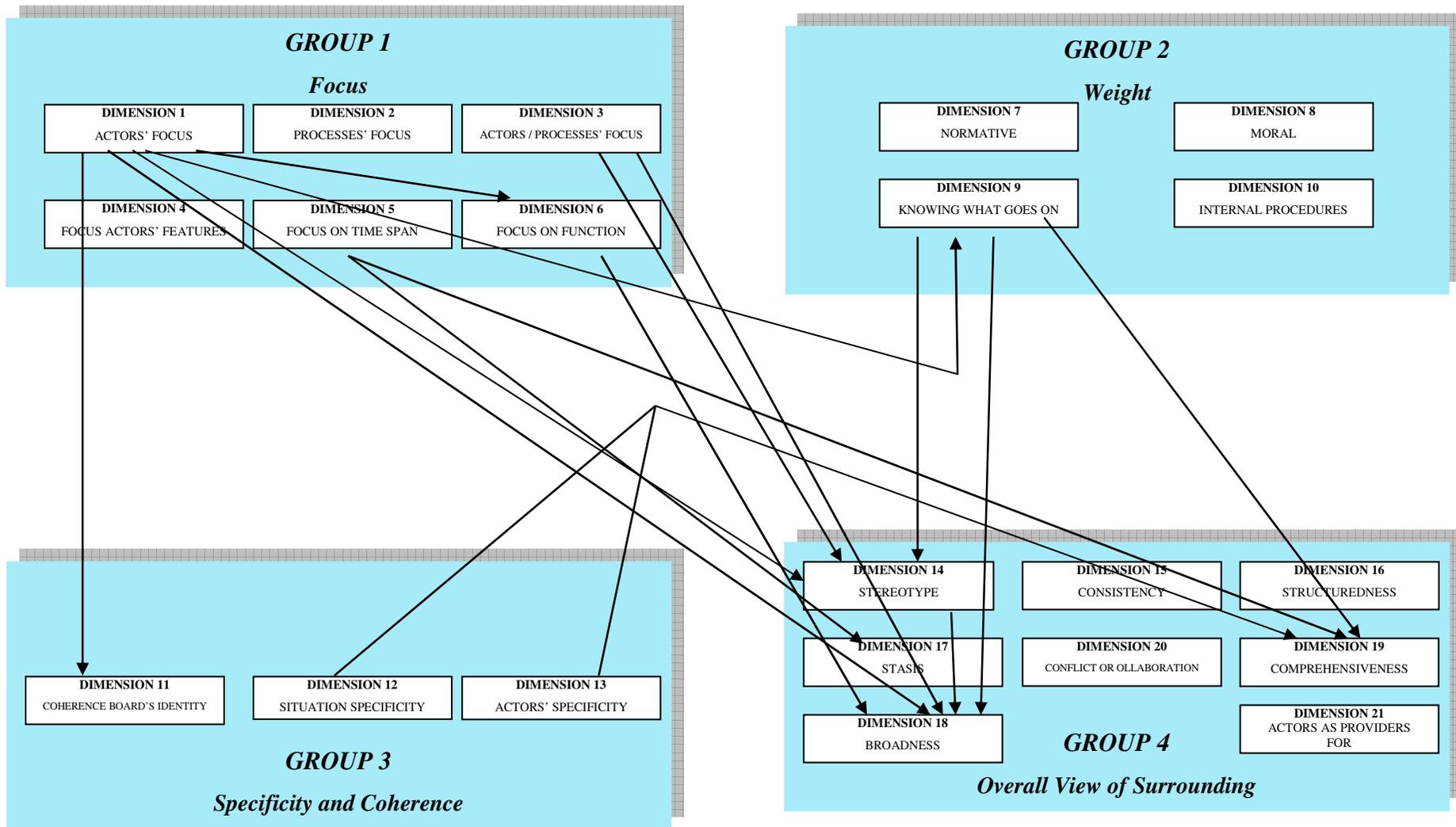


Figure 14 Potential associations between Network Pictures Dimensions

5.5 Conclusion

The chapter has defined the meaning of each Network Picture Dimension and correspondent Sub-Dimensions. The criteria for coding and analysing the collected data have thus been established. Potential associations between some of the identified sub-dimensions have been put forward, reflecting the possibility of common ground in the way respondents perceive the world.

It is now possible to carry out the second-stage of the method described in Chapter 3 for developing the construct of Network Pictures as a research tool: using the derived structure to analyse all the collected data and interpret respondents' views of the world. This procedure is presented in Chapters 6, 7, 8 and 9.

Chapter 6

6 The Network Picture of One Individual

6.1 Introduction

This chapter includes the interpretation of one respondent's view of the world. It is carried out using the previously derived structure for the research device of Network Pictures. The Chapter thus serves two distinct purposes. In the first place, it provides an illustration of how to grasp and to look in a structured and analytical way at one individual's view of the world; it illustrates how to use the tool of Network Pictures. In the second place, it demonstrates what can be achieved with the application of the tool and thus what may result from trying to understand actors' views of the world.

The structure of Network Pictures will thus be used to analyse this respondent's explicit knowledge, with regards to his tacit understanding of the world. The interview that was analysed provided a snapshot of what he was thought to have believed at the time that the interview was conducted. Human beings are full of contradictions and their views of the world are believed to have a dynamic nature [see Chapter 2]. Therefore, maybe this respondent's perceptions would have been different if the interview had been conducted at a different point in time. One thing that may be expected to be obtained from this interpretation is thus a set of inconsistencies and contradictions. These should not be ignored or avoided but instead embraced and understood, because they are part of the richness that comes out of the analysis and they may say something about some things that are unresolved in this manager's mind.

In Section 6.2, there is a description of the objective features of the selected respondent and in Section 6.3 a comprehensive analysis of his Network Picture is put forward. Section 6.4 considers the possible consequences of only analysing this individual's pictorial representation of his surroundings. Finally, Section 6.5 closes the chapter with a general discussion of the findings.

6.2 Objective Features of the Selected Respondent

The Network Picture described and interpreted in this chapter is from one respondent who at the time the data was collected had been the International Technical Director for the Logoplaste Group for approximately three years. The Logoplaste Group is a rigid plastic container producer, which provides a hole-through-the-wall production and distribution

system. The respondent was responsible for the company's international technical development and in parallel he also held a commercial development function with the company. He thus held externally and internally oriented functions. Before undertaking these roles, he was the plant manager for one of the company's *in-plants*. This *in-plant* was in the house of the client with whom the Logoplaste Group had the longest business relationships, having started in the late 1970's. Previously, he had been the KAM (i.e. Key Account Manager) for another client. That is to say, before undertaking his current functions, he also held both internally and externally oriented positions.

The director had been in the company for a considerable period of time, namely for ten years and previously had always been professionally associated with the containers industry. Immediately before joining the company he was working in the car components industry and then at a large multinational involved in the manufacturing of products for personal care and household cleaning. In both companies he worked in the containers area and his functions were mostly internally oriented.

6.3 The Network Picture of One Particular Respondent

The description and interpretation by this researcher of how this particular respondent saw the world is presented in this section. The tool of Network Pictures was used to get into the respondent's head and to grasp, in a structured and analytical way, what this real person, an organisational actor in the '*Product Network*', thinks about. This was carried out solely by analysing how the respondent described the world around him.

6.3.1 Focus of respondent's view

6.3.1.1 Actors

The interviewee came across as someone who felt like he was a member of a social group known as the Logoplaste Group. He spoke very frequently in *we* terms to refer to the company's business activity and relationships with other actors and he appeared to align himself with most of the company's explicit cultural values. This came through in some of the manager's statements, such as "*because unlike others of our competitors, we do not have dedicated machinery; we do not have an agreement with a machinery producer*" or "*we believe that at this moment we have the right formula, so that it works*". The Logoplaste Group at the time data was collected was considered to be one of the most important Portuguese producers in the rigid plastic containers sector, reflecting its considerable capacity

to influence others. This may be associated with the focus this director placed on the company.

Despite this apparent feeling of belonging to the company, this respondent held a restricted view of the company's importance, stating that the Logoplaste Group was just one element in the overall world. Thus he could be said to hold a contextual view of the world, i.e. not being egocentric. He appeared to understand that the business world does not have a centre, saying things such as "*we are within this universe*". This may be related to the considerable experience the respondent had had in the company and in the sector, which presumably reflected his capacity to see beyond his own and his company's business activity. If the director's experience in the business was solely related to the company, he could be expected to hold an egocentric view of the world. Also, his non-egocentric view of the world could be associated with his experience in externally oriented functions, which would involve exposure to activities taking place outside the company.

Identifying himself with the company and simultaneously considering it had a limited importance in the world, may explain why at certain points in the interview he showed some incoherency. This is evident in the following statements: "*I could never position the Logoplaste Group amongst the universe of stock market listed companies*" and "*we are among the big groups of companies which buy other companies that are developing their activity in our business area, but that have not been able to survive*".

On some occasions, the director did speak in the first person and talked extensively about those actors or processes that were directly connected to his current or past activity. This stance was visible in expressions such as "*my clients are also supplied by my competitors*". But the majority of things he said were associated with the company and the surrounding world.

Although he considered himself as having some knowledge about the company, he frequently reminded the data collector that his view was strongly conditioned by his departmental function. Among other things, he said "*I have knowledge on that matter, but not because of participating directly. My function at Logoplaste is technical...*" or even "*For me, relations with suppliers..., I am very distant, but I have some visibility of those relations, because I have a team that carries out trials with them...*". He also underlined that as a result of being the company's international technical director, his activity was mostly developed abroad and that therefore whatever he said about the Portuguese context reflected the perspective of that of an external observer. The respondent was very cautious in what he said and clearly

distinguished what was factual from what was perceptual. *“I have a technical function related to Europe and not much to Portugal; Europe has an independent structure to manage all these businesses. Therefore, whatever I say about them is not factual, but instead perceptions that result from what I hear”*. He preferred speaking about his past experiences in the Portuguese scenario or to rely on the expertise of others, frequently pointing out how other members of the company were surely better informed than he was to talk about certain areas. He was not willing to extrapolate what he knew, from his own experiences, to talk about particular actors or situations regarding which he did not have factual knowledge. Therefore, he showed reluctance in committing himself outside of his area of expertise. He could thus be said to be factually oriented.

6.3.1.2 Processes

The respondent revealed a strong social awareness, showing great interest in inter-personal relations. This was reflected in his visible willingness to invest and develop his social skills. He talked very frequently and intensively about relationships' social atmosphere describing for most relationships what he believed to be the extent of closeness, e.g. *“with Danone, it's a very interconnected relationship; it is as if we were their packaging department, as if we were part of their organisation”*, power, e.g. *“Coca-cola is clearly the leader of the relationship”*, understanding, e.g. *“it's an extremely open relationship the one we have with Danone”*, cooperation and conflict, e.g. *“we are constantly cooperating with Refrige”* and expectations, e.g. *“Selenis wasn't able to understand that they had to evolve and that Logoplaste's clients would not accept certain levels of quality that they were offering for our raw materials”*. He therefore described his surroundings mostly as a global actor network, representing relationships as patterns of social interaction between companies and particular individuals and highlighting the importance of inter-personal relations for the success of the hole-through-the-wall system. He appeared to see different elements of actor bonding for relationships of a different nature, e.g. when talking relationships with clients, he spoke in terms of: honesty and openness of the relations, closeness, cooperation and power, leadership, intensity, expectations, professionalism or lack of it and about the importance played by personal contacts. Then, when talking about relationships with suppliers, he spoke mostly in terms of: power and dependency, commitment and lack of understanding between parties.

The respondent sometimes described his surroundings in terms of specific individuals and specific interactions between them, highlighting the important role those interactions played in the relationships between companies. He therefore appeared to think not only about

companies or groups of companies, but about particular individuals. In other words he held and talked about specific rather than general knowledge.

This predominantly social perception of relationships may be associated with his commercial functions. The latter presume substantial actor bonding between those involved in commercial activities. However, the director's current main function was strongly associated with project development and this implied thoroughly addressing issues related to physical or knowledge resources jointly built through relationships. Moreover, it implied addressing issues related to the coordination of activities between the involved parties. In addition, previously he was the *in-plant* manager for one integrated unit. He would thus be expected to perceive relationships more intensively as activity links and resource ties. What came through is that his commercial framework clearly prevailed over other frames and the respondent thus held a strong social orientation.

His perception of relationships as actors bonds may also be related to the company's explicit cultural values, given that there was a policy of investing in inter-personal skills and the capacity for developing human bonding was considered an important desired asset amongst the company members. However, these cultural values would be expected for a low tech company and the Logoplaste Group does not fit into this category. Nevertheless, these values do fit the company's hole-through-the-wall system, because it implies that there is intense actor bonding.

Finally, it could be argued that this emphasis on actor bonding may also be associated with some cultural aspects of the plastics sector. Most companies from this sector had been in the business for decades and according to this manager, "*everyone knows each other*". It is a sector where deals are believed to be strongly dependent on personal connections. The director claimed that the sector was "... *about old relations, old influences... It's the contacts... It's an industry [that] requires a lot of personal contacts, of vision; it is about the person that 'I already know'*".

On some occasions, the director also described relationships as resource ties. This usually happened when he talked about hole-through-the-wall based relationships and in this case he talked about the ties implicit in this particular production and delivery system: "*the clients say: 'you build me an integrated plant but we want equipment H'...*", or whenever he described commercial relations: "...*with a Key Account Manager*". He identified time and money as the most common investments that relationships implied. As with actor bonding, he spoke about resource ties of different natures for different entities, e.g. when talking about

clients he described how his company's plant was within each client's house (i.e. material tie), how there was a joint development of solutions (i.e. knowledge tie), how they had to manage different machines and also how it was necessary for several people to be involved as well as a KAM (i.e. intangible tie). Furthermore, when talking about suppliers, he described mostly how there were joint discussions to develop machines which allowed for lower energy consumption (i.e. technical ties).

Sometimes the director also specified, in a quite detailed and extensive way, the activity linkage associated with project development; talking in some depth about daily and project related activities and also about the frequency and content of the contacts established between and with other companies. For example, at one point he said "*...and there is a very strong connection between our R&D area and theirs*" and "*...whenever there are projects, there are multi-disciplinary project teams [from both sides] that conduct the project...*". He also said "*we have daily, weekly and monthly meetings. It's very intense. Regarding the content of each, the daily meetings are to check what is going on...; then the weekly meetings are for planning and the monthly meetings take place at two levels, namely with the plant monthly meeting and KAM monthly meeting...*". He claimed that the importance he gave to these activity linkages resulted from the technical nature of his function. Like with actor bonding and resource tying, he spoke about activity linkages of different natures for different entities, e.g. regarding the company's relationships with clients, he described with whom and how often they talked to get to an agreement on what they wanted, and how there were relations between the packaging department, the marketing department and the Logoplaste Group (i.e. administrative links). Moreover, he also commented on how they went about making adjustments to the product, how their equipment and plants were flexible and required specialisation and refining of machinery and also how there was a need to feed the product to the client's production line so that it could be filled (i.e. technical links). Furthermore, he described how Logoplaste had to adjust its production, by decreasing or increasing it, depending on the clients' sales volume (commercial links). Then, when talking about relations with suppliers, he described how those companies had to be flexible to be able to help the Logoplaste Group in case something unexpected occurred (i.e. technical and commercial links).

This director thus thought about relationships in a simplified and restricted way: relationships were mostly perceived as patterns of human interaction and bonding and rarely as coordination of activities or joint development of resources. He hardly ever spoke about any relationship in terms of all three of the dimensions: actor bonds, activity links and resource ties. Given that actor bonding affects how actors perceive and treat each other this respondent

may have an advantage in relation to other directors who may not place as much focus on actor bonding. On the other hand, an incomplete view of relationships may result the management of relationships being carried out in a way that does not serve each party's interests in the best manner and wrong decisions being made.

6.3.1.3 Actors / Processes

This respondent talked about the surroundings in terms of both actors and relationships. Thus, he thought about the structural and process related aspects of the world, reflecting how he may be on the look-out for opportunities and threats associated, not only with actors' structural features, but also to relationships and to their interconnectedness. This was reflected in how he usually established a relation between actors' characteristics (or structural features) and the relationships they had with the Logoplaste Group. It showed how he perceived actors as potential sources of opportunities or threats for the company's business activity, if they were to become involved with these other actors. For example, regarding one of the company's clients, the respondent described it as being a "*family business, managed in an old fashioned way; the owner is quite a character... they are not able to transmit to the final customers the quality and hygienic features of their products...*". The respondent then described the relationship that existed between Logoplaste and that particular client in the following terms: "*we are the leaders of the relationship; we choose everything, even the technologies; it's a difficult relationship,... a relationship of exclusivity and it is very personal and not professional, based on the familiar features of the relationships that exist between the two companies*". Clearly, he associated the structural features of this client with the problematic nature of the relationship that the Logoplaste Group had with that company. Another example involved a client who was said to have "*a centralised organisation, with common objectives and perfectly defined aims in what concerns the bargaining processes;... all companies are moving in the same direction, becoming more demanding, but P&G is further ahead*". He then described the relationships between Logoplaste and this client in the following manner: "*by working with P&G we have been learning a lot, renovating our structures, our procedures, our rules, our working methodologies; we learn with the direct and daily contact and with P&G.... Obviously P&G leads the relationship and we don't even argue about that. They are very important for us*". Again, the respondent associated this client's features with the characteristics of the relationship the Logoplaste Group had with them.

This way of perceiving the world could be due to the manager's considerable experience in the company and in the business: he had directly interacted with several actors, been involved

in diverse relationships and this gave him the possibility of developing an understanding of the dynamics of his surroundings.

6.3.1.4 Actors' Features

This manager thought about actors mostly in terms of their resources and problems, and not so much about their aspirations. He thus held an incomplete view of the structural features of his surroundings. Actors get involved with other actors to have their aspirations fulfilled and to satisfy other actors' goals. By leaving actors' aspirations out of the equation of relationships, the director may have been missing potential opportunities or threats to the company's business activity.

Interestingly, the respondent showed great concern in establishing a comparison between other actors' structural features and his own company's. This reflects his sense of relativity and his effort to have a sense of positioning. For example, when talking about a specific competitor he claimed "...we are technically good but not as good as Alpla; they have many more resources than we do, they are technologically advanced...". One other example was when he said "they are not very flexible as a consequence of being a giant, and since they are not family owned it's more difficult for them to take decisions than it is for us".

He was also quite interested in understanding how other actors' characteristics could affect his own company, as well as other actors' business activity. This reflects his understanding of the interconnectedness of his surroundings and this understanding was also observed when he claimed to know about some actors' characteristics through the information that was passed to him by other actors: "what we know about Alpla is what our partners tell us and the image that they transmit is that they are...". This way, other actors' resources¹⁶ were perceived as potential sources of benefits for the Logoplaste Group, as he said "we appreciate suppliers' flexibility so that, in case we have some unexpected situation in one of our plants, they can help us". Moreover, their problems¹⁷ were perceived mostly as potential threats for his company's business, as demonstrated by: "Refrige can't understand that there are major problems between the Portuguese and the Spanish market...Logoplaste has been affected by

¹⁶ Amongst other attracting resources such as privileged location, technological means, internal organizational qualities, coherence of objectives and advanced production systems, he highlighted how personal and social contacts or actor bonding were considered central resources in this sector (e.g. "Alpla's major resources are the old influences since they are very well positioned in the market... old relations, good contacts...").

¹⁷ On the subject of internal problems, the director mentioned several difficulties companies faced such as: being poorly managed, being a family business, lacking strategic vision and flexibility, facing production problems and holding narrow horizons.

their need for lowering costs". The few times he mentioned actors' aspirations¹⁸, he referred to them as potential sources of strain for the Logoplaste Group resulting from other actors' demands in regards to the company's role. For example, he mentioned that "*our clients want to be competitive and for that to happen, they expect us to supply them in a competitive way*".

The respondent thought extensively about the resources and problems of the company's clients, suppliers and competitors, only mentioning briefly the aspirations of the clients. In general, he appeared to be interested in knowing about the surrounding actors' characteristics and he usually described how those characteristics had changed over time. When talking about the Logoplaste Group's characteristics he spoke extensively about the company's resources, hardly ever mentioning its problems and aspirations. This reflects what may be considered a biased perception towards his company, one that only integrates positive aspects. That is to say, he had what could be considered as being a strong stereotyped view of his own company.

6.3.1.5 Time Span

This director could be said to be experience driven: he intensively lived in the present, whilst drawing on what he knew about the past. For example, regarding a particular client the respondent said that "*it used to be owned by a family but since they weren't able to achieve the aim that Coca-Cola was demanding, they sold the company to the Spanish*". Moreover, regarding the sector, he claimed that "*right now, it is going through a concentration stage; in the past, this industry had many players, small family based companies invested in this technology and produced plastics, and nowadays it is happening the same as in other industries: big world players are taking over the market*". This attitude may be related to the considerable business experience he had had in the company and in the business. Because he had been around for a long time, he had experienced and knew about past situations that he talked about and made use of this to explain how the current situation had been arrived at. This allowed him to be quite assertive and confident. Given this vast experience, he could be of the opinion that he had nothing new to learn and thus be reluctant to scan information which might be incongruous with his long-term established frameworks, resulting in a very restricted and biased view of the world. If on the other hand he did not have considerable experience in the business, he might not feel comfortable talking about situations that he had not witnessed and would thus be expected to speak mostly or solely about the present. He

¹⁸ When describing other companies' aspirations, the respondent spoke amongst other things about those companies' desire to: increase their market share, to be competitive, to supply consumers with environmentally friendly and attractive products and to enter into specific markets.

could consider that his lack of experience handicapped him and to overcome this he would be expected to try to scan as much information as possible to broaden his knowledge. One other possible situation would be to assume a more defensive attitude and scan solely for information coherent with his current framework.

The reason why this manager talked so often about the past may also be related to the following: his current functions were developed outside the national context and he showed himself to have factual orientation, as described above. These two factors resulted in him talking intensively about what he had experienced in the past, at the time he was working in Portugal.

Given the strategic nature of his main function in the company, namely project development with the potential and actual clients he was involved in and which conditioned the relationships' direction and hence the company's progress, he would be expected to speculate more about the future. However, he hardly ever mentioned what he believed would happen in the future. Regarding his own company, he did not show much concern about its future. *"What will become of Logoplaste in 20 years time? It will strongly be dependent on the adaptation capacity we will have because in 10 years time we may have a 'white elephant' on our hands that can't move"*. He claimed that at the moment the Logoplaste Group *"has the right formula: very flexible, with a very dynamic organisation, with young people, with a high proximity between management..."* and thus in the meantime, in his opinion, no major changes had to be introduced.

6.3.1.6 Function

The respondent believed and claimed that the technical and commercial function he was currently developing in the company conditioned or restricted the way he saw the world: *"It is obvious that my view is conditioned by my area (very technical), an area very much directed towards the plant, the project and development of bottles"*. He said that he could only speak in factual terms about those things that he was directly involved in.

He spoke extensively about actors or processes associated with his function. Amongst other things, he explained what the normal procedure for a project development was, the differences that existed between clients when it came to suggesting or taking on suggestions for technical modifications, and also talked about the freedom that he had, as a technical project developer, to shop around in order to purchase machinery. For example, he said *"and then, whenever there are projects, there are multi-disciplinary project teams that conduct the*

project by themselves". Nevertheless, he also spoke very often about issues associated with other functions. Moreover, very frequently his view of the surroundings did not seem to be conditioned by his current functions, but instead by those of others. He also spoke about functions he had performed at some time in the past, such as that of KAM, which related to commercial aspects, and that of responsibility for purchasing which related to supply. For example, he spoke broadly about competitors, entities who were related with his past and even current commercial functions. Another example was when he was very assertive describing the nature of the problems that might emerge on the shop floor at the *in-plants* and how each client and Logoplaste dealt with them, even though at the time of the interview he had no direct involvement with this process. The director showed himself as being more comfortable talking about issues related to those functions he had performed at some point, rather than those he had never been involved with and this reinforced this researcher's view that he preferred to deal with facts. Nevertheless, he *did* speak about functions he had not been directly involved in. For example, he said that "*due to the difficulties associated with selling raw materials in the plastic materials industry, what the raw material suppliers try to do is obviously to convince us to buy their products, but they go to these companies (the clients) with institutional presentations...*". To sum up, although he claimed to have a functional focus, he emerged as having a multidisciplinary view of the world. If he had a functional focus of any nature, he would see solely or mostly actors and processes directly related to one particular function, and would thus have a simplified view of the world.

This multidisciplinary perspective may be related to his considerable experience in the business, which allowed him to understand the importance of seeing the world from several perspectives. Not having a particular functional focus could also be associated with a restricted experience: respondents with a limited experience would be expected not to have a clear view or available information on what is going on in the world, preferring to talk in terms of specific functions (usually their own). These respondents could then either be willing to scan for more information to get a clearer and more specific view of the world or fearing the unknown and exposing themselves they may choose to undertake a more defensive position.

It may also be associated with his involvement throughout the years in quite a few functions in his current company as well as in others. This involvement and direct contact with several functions could have made him realise that the surroundings could be perceived from several different perspectives. Moreover, because as mentioned above he appeared to perceive his company as one element of a whole, he would be expected to have this multidisciplinary view of things.

The fact that his framework appeared to be strongly conditioned by his previous functions and not as much by his current one, may be associated with the limited experience he had had in this current function. If he had been working in this role for a longer period of time, he would be expected to see the world more intensively in terms of that function.

6.3.2 Weight of respondent's view

6.3.2.1 Normative

The respondent came across as someone who lived according to a set of rules regarding the surrounding world; rules which he was not willing to break and that that he had thoroughly thought about and developed throughout the years he had been working in the sector. He saw the world in terms of causal relations between certain actions and corresponding consequences, understanding or finding the reasons why those causal relations are valid. He therefore spoke quite often about what he believed should or should not take place, what business practices were or were not recommended, so that the success of actors' business activity or the achievement of a desired business performance could be assured.

This prescriptive view of the world may be associated with the director's considerable working experience in the company, in the business and in multiple functions. Having been around for some time and having seen and experienced diverse situations, he might have acquired the feeling that he knew what worked or did not in that particular context. His normative view could also be related to some of the 'Product Network's implicit and informal rules and also to some of the company's cultural principles.

Curiously, he spoke much more often about the rules he believed the Logoplaste Group should live by than about the rules other companies should respect. Some examples of his normative view and which integrate these two situations are shown as follows [see Table 23]:

<i>A both-way prescriptive perspective on the relation with suppliers</i>	
<i>"We have to be competitive.... Hence, the negotiation that goes on with raw materials suppliers is very important since it is from that good negotiation that competitiveness emerges and is then passed to our partners."</i>	<p>Theory: Good negotiation with raw material suppliers leads to better relations with clients.</p> <p>Argument: Lower prices of raw materials lead to a higher competitiveness for the company and subsequent possibility of offering lower prices to clients.</p>
<i>"We appreciate suppliers' flexibility so that they can help us in case we have some unexpected situation in one of our plants."</i>	<p>Theory: Suppliers' Flexibility leads to better relations with clients.</p> <p>Argument: If suppliers are flexible, they can help in unexpected situations on the plant ground and clients get a more reliable service and greater satisfaction.</p>

<p><i>“We must have some availability for them (for the suppliers). Sometimes, they challenge us with new ideas for new developments but I would say that it is much more about time and knowing how to listen them, integrating those novelties to our benefit, then investing in them.”</i></p>	<p>Theory: Having availability for listening to suppliers leads to more business opportunities with potential clients. Argument: By checking what suppliers have to offer, the company gets updated with latest innovations and is able to invest and improve its offer.</p>
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Table 23 Some of the respondent’s theories on relationships with suppliers

One other example of the respondent’s prescriptive view regarding Logoplaste’s behaviour is present in the following: *“Logoplaste has to get to a size so that one day it can reach the level and dynamics that Alpla has in the market”* and *“marketing here is... well... it is obvious that we must have the capacity to influence.”*

This prescriptive view can act as an obstacle to change, in the sense that this director may not be willing to scan and interpret information which may defy some of the rules he lives by. On the other hand, it may also be a conductor for openness and willingness to scan for more information, which may complement and update what he believes to work or not in the business world.

6.3.2.2 Moral

The respondent did not think about the world in ethical terms. He hardly ever mentioned any ethical principles when describing the surrounding world. Instead, he spoke from an economic and business perspective about some topics that could be more easily associated with moral issues than with economic aspects. Some examples were related to environmental topics and some to suppliers’ or clients’ specific behaviour. The former example came across quite clearly in the following statement: *“I think that by being a member of this Portuguese environmental association, Logoplaste develops an image of its production being environmentally aware”*. Thus, instead of considering the company’s association with this agency as a way to increase its environmental awareness and practices, he showed a belief that it was a way to improve its image and thus achieve better economic results. Another example was when he spoke solely in business terms about some business practices that could be considered by others as non-ethical: *“... what raw material suppliers try to do is obviously to convince us to buy, but they also go to these companies [the clients] with institutional presentations to say that if they pack with their raw materials, there will be advantages of weight, process ability, and that the packages supplier will have lower energy costs; also, my machinery suppliers try to convince my multinational clients to use a certain machine in a specific project... This sort of relationship, as a rule, makes our business more difficult”*.

There were some exceptions to this rule of not having an ethical perspective of the world, namely regarding his perception of the relation between the company and its clients, e.g. “*we have an honest and opened relation with our partners*” and “*we treat them in a very professional way and with a lot of respect*”, and his opinion about certain companies’ behaviour, e.g. “*and I think that this company is quite fair*”. Thus it can be seen that he thought about these relations from an ethical perspective.

His business orientation may have been the result of his considerable experience in the business and also of his personal beliefs and attitude towards life. Someone that had recently started in the business would be expected to be more idealistic and principled, than someone who had been around for a considerable period of time and who had become hardened and somewhat cynical towards moral issues. However, if this respondent did hold strong moral convictions on the ethics of business practices, it would probably be difficult to prevent these principles affecting how he perceived the world.

6.3.2.3 Knowing What Goes On

The respondent frequently claimed that he preferred to rely on the expertise of other industry members to know what was going on in the world, instead of looking for the knowledge by himself. Moreover, he said that he was mostly interested in knowing about issues that were directly related to his current core function in the company. For example, he classified his visibility of relations with suppliers as limited and did not appear to be worried about holding such a restricted view in that field, because the nature of his function did not require a deep knowledge of what was going on with those entities. He also said that given that his function was being developed outside the Portuguese scenario, he would be wasting resources trying to find out more about what was taking place in that context.

However, in spite of all these arguments, he did show that he held a substantial knowledge about that particular scenario and about things that were not directly related to his function. This reflected his unwillingness to be completely reliant on other people’s knowledge and expertise and his interest in knowing what was going on in the company’s surroundings. He appeared to be on the look out, trying to understand, amongst other aspects from the

Portuguese business scenario, what was happening in the sector in general¹⁹, in relationships with and between other parties, what were the activities that the competition was involved in, and what was the role played by environmental organisations. This attitude did not come as a great surprise, given that as mentioned before, he perceived his company as being part of a bigger picture. In fact, he clearly stated that for the company's success to be assured, it ought to invest in finding out what was happening in the world. He believed that varying amounts of resources should be invested, depending on the importance of the involved actors or processes for the company's business activity. For example, regarding a supplier he said *"they provide standard products and therefore there is no need for technological connection at that level"*. Not only did he consider that it was important for his company to be aware of what was going on in the surroundings, but also that other companies should adopt this same posture. For example, he spoke about how Refrige (Coca-Cola in Portugal) did not have the necessary sensibility to understand that there were strong differences in the consumption habits between the Portuguese and the Spanish market and how that affected the company's business activity. This example reinforces the strong emphasis that this respondent placed on his surroundings, as mentioned above.

This interest in knowing about the world may be associated with his substantial exposure to the surroundings and diverse situations and a perception of how everything was interconnected. He used his perception of interconnectedness to get access to information regarding what was going on in his surroundings, e.g. *"and we know about this competitor, many times through the companies that we supply"*. He may thus be in a good position to anticipate change.

6.3.2.4 Internal Procedures

Understandably, the respondent was mostly interested about processes between actors and not so much about actors' internal processes. He was only interested in actors' internal procedures as a means to understand how these connected actors, either through actor bonding, activity linkage or resource tying. This came through quite clearly in the following sentences: *"multinationals traditionally had very strong technical departments... called Packaging Departments...; there has been a tendency for the Packaging Departments to disappear, which is a huge advantage for Logoplaste since then it can talk directly to marketing and is able to be responsible for the entire process. Sometimes, the Packaging*

¹⁹ E.g. activities developed by environmental organizations, country commissions and legislation, clients' demands and pressure played by competitors, trends for concentration, technological situation, innovation and change, role played by the labour force and know-how, amongst others.

Departments people didn't quite understand what the marketing people were saying and their role as a filter didn't work... gentlemen from the Packaging Departments have much more difficulty talking to these structures of marketing than we do, because they don't understand what they are told". This emphasis on understanding relationships between companies, by looking at their internal procedures and structures is also visible in the following sentence: *"There is a very strong relationship between our R&D departments. Communication is very formal: there has to be a project protocol where everything is written down; if we say we are going to lower gr/bottle, we have to establish how many tests we are conducting, how many samples, how many transportation tests have to be done and so on".* Hence, this director did not consider those procedures relevant *per se*, but instead as a way to get a more detailed understanding of relationships. This reinforces the idea mentioned above that he perceived the world as a combination between actors and processes, instead of merely as a set of relevant actors.

This attitude may be related to the external orientation of his current commercial function; his secondary function. Given that his main function was internally oriented, a stronger awareness of company's internal processes would be expected. However, he had only been in this function for a short period of time and previously he had been involved mostly in externally oriented functions. Thus, it would appear natural for his views to be mostly externally oriented. Nevertheless, since his company provided a hole-through-the-wall production and delivery system which involved a strong activity linkage, he was expected to show greater interest in companies' internal procedures, which was the case.

6.3.3 Specificity and Coherence of the respondent's view

6.3.3.1 Coherence with the Board's Explicit Identity

The respondent strongly agreed with several aspects of the explicit identity implemented and disseminated by his company's board. Because he appeared to identify himself with the company, this coherence between how he perceived the world and the board's explicit identity was predictable. Apart from not making any statements that could somehow be construed as being in disagreement with that identity, on several occasions he talked about some of its aspects as being the most appropriate. For example, he mentioned that the Logoplaste Group is a service provider and not an industrial company or product provider, as it might seem at first sight. Moreover, he identified the clients as the most important group of entities in his surroundings, highlighting the integrated solution that the company offered to its clients: conception, production and delivery to the clients' filling equipment of the plastic

containers. Amongst other things, he also claimed that the company had found the right formula and that it was flexible, dynamic and quite flat in hierarchical terms; it had a good image spread throughout the sector, a continuous improvement policy and it competed amongst the best in the business.

When expressing this perspective on things, it did not seem like he was simply trying to avoid internal conflicts, not daring to challenge the board by showing his disagreement on some issues which could jeopardise his situation in the company. Instead, he genuinely appeared to agree with most of its aspects. For example, when talking about a specific client, he said “*Danone is a very ‘Logoplaste style’ relationship: we are flexible, we have hole-through-the-wall and we have costs*”. Moreover, regarding the company’s membership of an environmental agency he said “*there are flags that we use in our presentations to potential clients and the environmental one is one of those*”.

This coherence may be associated with the fact that he had been working in the company for several years, reflecting a prolonged exposure to the company’s policies and desired identity. It may be that because he had been exposed to it for such a long time, even though he might not truly or fully agree with some of its elements, he might have integrated them into his framework. This exposure could have led to the opposite effect given that it meant that he had had enough time to think things through and to become aware of his disagreement with some of the elements of the board’s explicit identity.

The observed coherence may also be related to some mechanisms that the Logoplaste Group had set up internally, with the aim of assuring significant commonality in the way its directors perceived the surroundings. One of those mechanisms was (unconsciously) mentioned by the respondent: “*the team is very integrated, very participative, and we do not work in an isolated way*”. He claimed that he believed that despite each director’s views of the world being naturally conditioned by their particular function in the company, there was obviously a strong commonality amongst their views, because of the strong integration that was encouraged by company’s board. Frequent meetings brought together all the company’s directors to discuss issues of a diverse nature. These meetings provided them with the possibility of exchanging ideas concerning diverse topics and achieving a generally shared view on some core issues. It was also a way for the board to transmit its guidelines regarding its desired identity. This director could have held a myopic and biased perspective of the world, one that was conditioned by these mechanisms. He could have shown reluctance in scanning and interpreting new information that somehow defies that identity. Hence, the measures which his company implemented in order to assure a common perspective amongst

its members may have caused some undesired side effects, namely that of unwillingness to change, yet as can be seen from the above, this was not the case.

6.3.3.2 Situation and Actor Specificity

Drawing on his considerable past experiences and on what was currently taking place, he identified commonalities between the surrounding actors and processes and aggregated them, whilst simultaneously being able and willing to see the specificities within each set or group. Most of the time he began by talking about general situations and / or groups of actors and then moved on to specific examples, frequently talking about situations he had been involved in or actors with whom he had interacted and also about other actors. It seems that given that he was very cautious in what he transmitted, trying to be as factual as possible, he used his specific knowledge to illustrate what he identified for each group of actors or processes. This reinforces the idea that he was strongly experience driven. For example, he said “*they are companies that can't take risks.... must have a strong image. P&G for example is a company which is in several countries*”. Then, regarding one of its clients and the discussion of which party took the initiative, after saying that both parties could take the first step to introduce changes, he illustrated with an example: “*For example, Lactimel was from their initiative because the problem associated with this product of Lactimel and Bifida is that there is a need for a certain thickness of plastic to keep the organism alive, maintain the oxygen so that the Imunita do not die*”. Most of the examples that he gave were usually very detailed and included figures and particular parties.

By aggregating actors and processes, the director was simplifying reality. This simplification technique may be useful in the sense that it allows for the carrying out of generalisations to understand and predict what may happen in the surroundings. At the same time, it may be misleading, because some generalisations may not be appropriate for some elements in each group. However, given that this respondent combined the technique of aggregating with the ability of thinking about specificities, he was surely able to make the best of the simplification technique.

The capacity to aggregate whilst keeping a perception of specificities may be associated with the director's substantial experience in the company, in the business and with multiple functions. He had been an eye witness to many episodes in relationships and had interacted with multiple actors over the years. This exposure granted him the possibility to identify common threads among those actors or processes thus aggregating them, whilst having a detailed knowledge about each one. Despite this described experience and its effects, if he did

not have the personal features that provided him with the ability and willingness to use his experience to identify commonalities and carry out the clustering, he would not see beyond specificities. A limited experience would be expected to reflect a restricted access to information or knowledge about specific actors and processes. In this case, the respondent would either 1) group actors and processes as a result of not knowing much about their particularities or he would 2) not be able to see beyond actors and processes' specificities and think solely in specific terms. In the latter situation, he would see and talk mostly about issues related to his specific and limited working experience.

6.3.4 Respondent's Overall view

6.3.4.1 Stereotyping

The respondent saw his surroundings in terms that could be interpreted by this project's researcher as that of a network. Among other things, he perceived the interconnectedness of the surrounding relationships, e.g. *"...there is a very strong interconnection in all of this, in such a way that the containers that we produce are in accordance with what the society expects from us..."*, thought about actors and relationships his company was not directly involved with, e.g. *"all this planning with raw materials is also developed in these environmental organisations, countries' commissions and legislation have some influence ..."*, addressed how these may affect his company's business activity and perceived actors' positioning, as being dependent on other actors' business activity and strategic positioning. Also, he relied on the information provided by other actors to know what was going on in the world, e.g. *"...we have heard about this competitor many times through the companies that we supply"*. As a result of being understood as perceiving the world as a network, the director would be expected to be able to identify potential threats and opportunities associated with the surrounding interconnectedness, which may be used in his decisions when interacting. Over the years the respondent was involved in several relationships and in diverse functions, including externally oriented ones, becoming aware of the complexity and interconnectedness of the surroundings and of its relevance to the company's business.

Although he appeared to see the world as a network, he did not seem to be aware of it and on several occasions he claimed to see a supply chain, along which the Logoplaste Group was integrated at some point. This came through quite clearly when he said *"here we have all the suppliers which will be within a group and that whatever material they supply us with; they are within the supply chain perspective"*, claiming that what he saw was a supply chain, and then talking about features associated with a network, e.g. *"in a very general way, this is the*

environment where we are inserted; obviously, our strategic positioning depends on the positions of these companies". A supply chain is considered a traditional stereotyped framework of business relationships, a much less complex and less facsimilous way of representing what goes on between business actors, than that obtained with a network. Claiming to see a supply chain, but actually being understood as seeing a network, can be understood as a technique unconsciously used by the respondent to simplify reality. Given his awareness of the world's high complexity, he claimed to see a supply chain to gain a sense of control over what was going on in the surroundings, as well as a sense of focus. Moreover, it may also be related to his academic experience, given that he may have been taught to see the world in those terms, not being familiar with the Industrial Network Approach to industrial systems. Furthermore, it may be associated with the attempts by the Logoplaste Group's board to institutionalise among its members this stereotyped and simplified view of its business and relations. Finally, seeing it as a supply chain may be related to what is considered the norm in this sector of plastic containers.

6.3.4.2 Structuredness and Consistency

The respondent held a predominately structured view of the world. This appeared to be mostly related to his considerable experience in the business, which had granted him enough time to think things through extensively. Also, because he frequently simplified reality e.g. claiming to see a supply chain when he saw a network, grouping actors and situations and thus, it was easier for him to devise an overall structure. It could also be related to a narrow or non comprehensive view of the world: if a respondent does not see much (in scope and / or richness), holding a simplified view of the network, it would be probably easier for him to provide a structured view, than for other respondents who see more things in a more complex way. By keeping things simple, it would mean that there was less difficulty in providing an ordered presentation. However, this did not seem to be so in this director's case. He appeared to have the ability to form a structured representation of a complex world by putting together *bits and pieces* in an organised, proactive way, as a result of having a well thought out view of the world.

Although he held an overall structured view of the surroundings, the same can not be said regarding consistency. Throughout the interview, this manager showed some inconsistency, by saying different things, things that were *in conflict*, at different times during the conversation and regarding the same subject. This is not surprising and it would be expected because as a human being, he possesses all the traits of one, not least inconsistency, and fallibility. The inconsistency was visible when for example, at a point during the interview

he said “*there is not really a motive why I have placed Logoplaste in the centre; it’s more an emotional issue. But I do think that in some ways Logoplaste is a model...*” and then at a different time said “*I think that in terms of importance, these multinational companies [our clients] are also the ones who have a bigger capacity to influence the others*”. For some matters, he therefore appeared to be in a constant dialogue with himself. Regarding other matters, he was consistent in his responses, not having any doubts about them.

It therefore seems that some things were well established in this respondent’s mind and he was quite sure about them and no matter what, he was not going to change his opinion about those issues. This was his interiorised cognitive map of the world and he felt sure about it. That is to say, these things were the *rocks on the bottom*, which were not going to be changed. They can be classified as the respondent’s interiorised or *indwelled knowledge* (Polanyi, 1962). On the other hand, there were some other issues about which he was not really sure and thus he could probably be more easily swayed by other people, by other opinions. These were things that kept on changing, kept on developing, and revealed that actors’ views of the world are of a dynamic nature. It is the *grass or the mud of the surface* and can be classified as not being part of that respondent’s *indwelled knowledge* (Polanyi, 1962) .

It would appear to be important not only to identify what were the matters that the respondent showed as having inconsistent thoughts about, but also to understand the reasons why these matters were not solved in his head. Several possible explanations can be given for the encountered inconsistencies. It may be that the manager had only come across these situations recently, owing to his limited experience in the company or business, not having had the time to think or reflect about those situations and thus these remained unsolved in his mind. Another possible reason could be that the manager, having discussed the matter with several other people with strong diverse opinions, had not yet been able to form his own view on the issue. It could also have been the case that at some point during the interview he was trying to please the interviewer and gave what he considered to be the answer that the interviewer would be most impressed with. One other possibility is that this manager was attempting to provide an answer that was coherent with the explicit identity of his company’s board and that did not meet with his own perception of how things were. Thus, the inconsistencies that were observed and happened over a short period of time (i.e. the duration of the interview), should not be understood as the manager’s attempt to lie; instead, they may be related to issues that were not yet resolved in his mind.

A structured and relatively consistent view, as exhibited by this manager, may lead him to having a reluctance to scan and interpret new information, as it may require him changing his existing and well thought through frameworks. If that was the case, structure and consistency would become an obstacle to change.

6.3.4.3 Stasis

The respondent undertook a dynamic perspective of the world, perceiving actors and processes as evolving throughout time. He talked about how things used to be in the past and what they had become. For example, he said *“in the past, this industry had many players... and nowadays... with the concentration trends there are fewer”* and also *““We constantly try to convince our suppliers to adopt this ‘open book accountancy policy’ but they are not willing to do it”*. Amongst other issues, he spoke in evolving terms about the situation in the sector and the role of external forces, about relationships with other entities of a diverse nature and about those entities’ situations, and also about the Logoplaste Group’s features and business activity. This evolving perception of things may be associated with the fact that he had been around for several years and involved in some externally oriented functions, and thus had the opportunity to see the surrounding business world evolve, experiencing multiple situations and interacting with several actors at different moments in time. He had experienced a continuous and direct contact with an active and dynamic scenario, and integrated that changing perspective into his own perspective of things. However, his considerable experience could also have been an obstacle to a dynamic view of the world: he could believe, given his substantial experience and knowledge of the surroundings, that he would not require ‘updating’ his perceptions on actors or processes. He could believe that what he knew at a certain point in time was sufficient, but this was not the case.

Because the director had a dynamic perspective of the world, he would be expected to show openness towards the idea of scanning and interpreting information which may challenge his current framework. A greater reluctance to change would be expected, if he had seen the world in static terms.

6.3.4.4 Broadness

The respondent talked about several actors and processes that his company was directly involved with such as: multinational partners, competitors, raw material suppliers and other suppliers. Besides mentioning private entities, he also talked about some public organisations that somehow affected or were affected by the Logoplaste Group’s activity. In this set, he

included environmental organisations, Regional and European Law Commissions. He therefore looked beyond the entities with which business activities were taking place, talking about those that might in some way or other affect or be affected by those actors' activity (including the Logoplaste Group's). Apart from talking about numerous actors, he also discussed the relations with and between those actors, speaking for example about the relations between the Logoplaste Group's clients and its competitors, as well as between the group's clients and its suppliers, e.g. *"There is a very aggressive and very direct relation between these people (raw materials and equipments suppliers) and my clients; my clients may ask me to produce with specific materials or to use certain equipment that should be purchased from a supplier..."*. He also spoke about the relations between the group's clients and the final consumers. He therefore showed himself to have a broad view regarding the scale, structure and the processes of the surroundings.

Although not being sufficient, seeing the world with such wide scope may reflect a good capacity to identify further opportunities and threats in the world, having the *right* insights is also required. It may also be the case that given the considerable broadness of his view of the world, he may have been prevented from focusing on what really matters.

The broadness of his view appeared to be associated with his considerable experience in the business and in multiple functions, including externally oriented ones. He had interacted with actors from diverse areas, been involved in several relations and had been strongly in contact with the world, thus perceiving the existence of multiple actors and relationships. If his experience was confined to his company, he might have had a narrow view conditioned by his company's business activity. However, this was not the case.

Also, considering some of the features of Network Pictures that were encountered for this respondent, he would be expected to hold a broad view. These features included the following: focusing on his surroundings and considering it important knowing what was going on in those surroundings, thinking about the world in terms of actors and relationships between those actors, holding a multidisciplinary vision of the world, seeing specificities and talking in terms of what may be considered as those of a network. These observed associations between Network Pictures dimensions were put forward in Chapter 5 and thus were expected.

6.3.4.5 Comprehensiveness

The respondent saw his surroundings in a rich and detailed way. For example, regarding the sector, he said that: *“it is an industry in which both labour force and know-how are important, especially in the blowing activities, because it is a difficult technology and it takes years to learn the technique, but it’s not an intense labour industry. It’s not a technology where it’s just necessary to plug it and ‘in goes pork, out comes sausage’”*. He also spoke comprehensively about specific actors and relationships, e.g. *“It’s a very intensive relationship since in every Procter factory there are daily meetings. Therefore, everyday, everything that has happened in the plant for the last 24 hours is analysed... Usually, both parties take initiative”*. Given his considerable experience in the business and in multiple functions, it seems natural that he had extensive familiarity with, or knowledge about, particular actors and relationships. He spoke in a way that was more comprehensive about those actors with whom he had had direct contact, not being willing to speak extensively about any others. For the latter, he preferred to rely on other individuals’ specific knowledge and experience.

A rich view of the surroundings may reflect the possibility of interacting and taking decisions in a more ‘informed’ way. It may also indicate a stronger capacity to identify opportunities and threats from the surrounding world.

As with the feature of holding a broad view of the world that was addressed above, because of some of the features of Network Pictures observed for this respondent, he would be expected to have a comprehensive view. These being: seeing specificities, thinking about actors and processes between those actors and showing an interest in knowing what is going on in the world.

6.3.4.6 Surroundings as collaboration or conflict

The respondent perceived the world as being predominantly power driven, thinking mostly about control and dependency situations or actors’ expectations. For example, he described the Logoplaste Group’s relationship with its suppliers: as a struggle for better positioning and trying not to become completely dependent on specific suppliers. He also described how the relation with some clients was based on leverage and how the power usually lay with the client. Furthermore, he described how the final consumers expected to find certain environmental and ethically related features in the containers they supplied and how that resulted in considerable pressure for the Logoplaste Group’s clients and therefore also for

Logoplaste itself. This power oriented perspective was evident, in the following statements: “*the contact between these suppliers and my clients is less threatening than the contact between clients and raw materials suppliers...*”, and “*sometimes, we also win and it feels great beating that competitor*” and also “*... it is quite obvious that Logoplaste is nowadays a seriously important player, both in the world and the market...*”. This perception of power may be related to the characteristics of the sector within which his company was involved. The plastic containers sector is highly competitive and although there are not many companies with a size and capacity similar to or bigger than that of the Logoplaste Group’, competition is still very tight. Moreover, in the director’s opinion numerous smaller companies offered their services and products most of the time at low prices, to the detriment of quality.

Given the director’s considerable experience in the business, he would be expected to perceive the surroundings, not only as being power driven, but also in terms of collaboration. Also, the nature of the company’s production and delivery system (i.e. hole-through-the-wall) presumes strong collaborative relationships or partnership agreements, e.g. “*... in these plants that we are supplying through-the-wall, frequently there are some unexpected situations, peak situations... We also count on our suppliers’ flexibility...*”. However, even the relationships between the Logoplaste Group and its clients were perceived by this respondent as situations of pressure and the power clients had over the company, e.g. “*We are the leaders of the relationship; we choose everything, even the technologies*”. This reveals what could be considered an incomplete view of the nature of relationships, which according to the IMP theory should always integrate both elements of conflict and collaboration.

6.3.4.7 Actors as providers for...

The director thought about most surrounding actors, and also about his company, as providers for customised solutions and not as providers for standardised offers. This appeared to be related to the nature of the hole-through-the-wall system provided by his company, in which most of the other actors in the ‘*Product Network*’ were somehow involved. This system involved assembling a plant according to the clients’ needs and supplying them with a product and service totally adapted to their requests. For this to be possible, suppliers were also expected to be flexible and provide the Logoplaste Group with what it needed and when it needed it. This idea came across very clearly in the following statements: “*Nowadays, the aim is to differentiate the products (the clients’ products).... It is necessary to make the necessary adaptations in such a way that there aren’t losses and therefore, the equipment*

and plants are increasingly flexible so that changes can be introduced in a rapid way”, “when we have some unexpected situation in one of our plants, e.g. we need to increase production from one day to the other, Ferro is quite good at helping us out...” and also “my clients may ask me to produce using a certain material or to use certain machinery from a particular supplier...”.

Nevertheless, he did mention some standardised offers that he could identify in the network, namely those associated with some of the Logoplaste Group’s suppliers. For example, he said that *“we don't have much need to influence them, because they provide a standard product; we can't influence them technologically, and we don't want to, but we try to do it commercially.”*

6.4 The Analysis Carried out Solely at the Pictorial Level

With the aim of demonstrating the incompleteness and misleading picture that would result from analysing someone’s view of the world solely at the pictorial level, in this section there is a comparison between the Network Picture that resulted from interpreting solely the visual data and that from analysing both the verbal and visual data; the latter having been described in the previous section. The purpose of this demonstration is methodological: the aim is to reinforce the idea suggested in Chapter 3 that visual data is not sufficient to collect data on actors’ views of the world and visual and verbal data techniques should be used in a combined way.

The analysis of the visual representation of the world provided by this respondent [see **Appendix 3**, Figure 18], did not allow for the identification of the features for all dimensions along which Network Pictures could be defined. Instead, it only provided clues for a few dimensions and these clues sometimes proved to be misleading [see Figure 15].

On the first group of Network Pictures, Focus, the visual representation allowed for the characterisation of how this respondent saw the world with regard to two dimensions: Actors and Actors / Processes. Regarding Focus on Actors, the pictorial analysis would suggest that the respondent thought mostly about the surrounding world and not as much about himself or the company. However, the verbal data analysis showed that besides thinking about the *whole*, he also identified himself with the company, considering the latter an important part of the business world. Thus, the pictorial analysis provided an incomplete characterisation of this respondent’s view of the world. But regarding the other dimension, Focus on Actors /

Processes, the pictorial analysis would result in a characterisation of this respondent's view of the world similar to the one obtained in the previous section: he sees the surroundings as a set of actors and relationships between them.

On the second group of Network Pictures, Weight, the provided picture allows for the characterisation of only one dimension: Knowing what is Going On. Again, the result of the pictorial analysis would be similar to the one resulting from a verbal and visual analysis, because as indicated he considered it important knowing what was going on in the surroundings.

The third group of Network Pictures, Specificity and Coherence allows for the categorisation of Actors and Situations Specificity. However, the analysis of the visual data would mislead researchers into believing that the respondent aggregated situations and actors, not being able to see their specificities. The analysis of this director's interview showed that this was not the case, because he was also able and willing to see specific actors and processes.

And finally, on the fourth group of Network Pictures, Overall View, the provided drawing allowed for the characterisation of two Network Pictures Dimensions: Stereotyping and Broadness. Regarding Stereotyping, the drawing alludes to the fact that he saw the world in terms of a Network. However, in the previous section it was pointed out how although the respondent spoke mostly in terms that can be described as those of a network, he claimed to see a supply chain in which the Logoplaste Group was included. Thus, the verbal data revealed a feature of the way he perceived the world that was not identified in the drawing. Finally, regarding the dimension of Broadness, the pictorial analysis would result in a similar interpretation to that resulting from the combination of the verbal and visual data. Because the director represented numerous entities and relations, he could be said to be holding a broad view of the world.

Therefore, whilst the combined analysis of the visual and verbal data carried out in the previous section enabled the creation of a fairly complete and illuminating picture of how this respondent perceived the surroundings, the same can not be said about sole analysis of the visual data. Not only was visual data insufficient to give an understanding of how this respondent saw the world, it was also sometimes misleading. Thus, although it is relevant, it is advisable for visual data to be always complemented with verbal data.

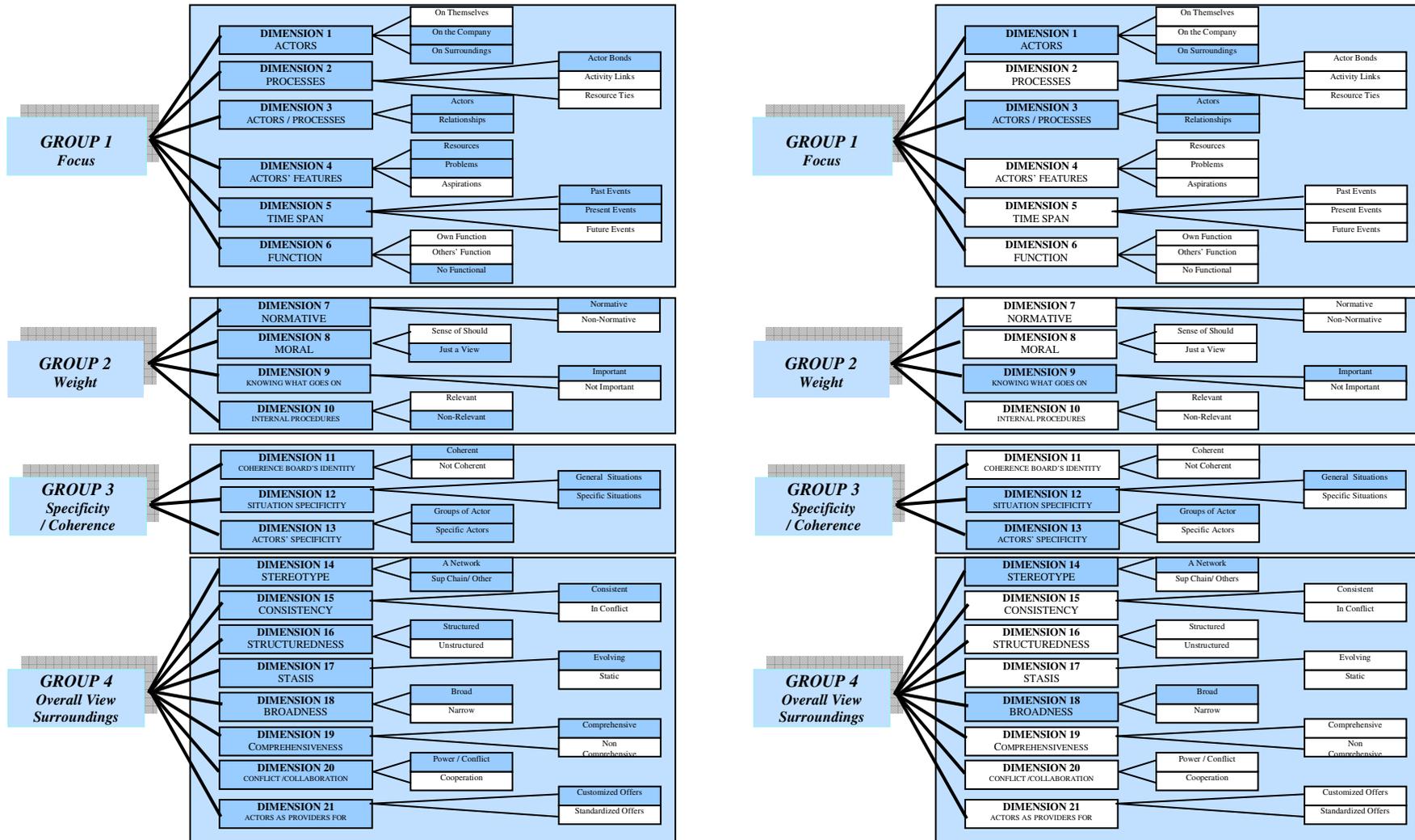


Figure 15 Characterisation of one particular respondent's Network Picture based on the combination of visual and verbal data (1st schema) and one that is based solely on the visual data (2nd schema)

6.5 Overview of Findings and Conclusions

The result of using the empirically derived structure of Network Pictures for understanding how this respondent described the surroundings, was what may be considered as something quite obvious and that is that people are complex. Using the tool has nevertheless also brought some quite interesting findings to the fore that could not have been identified without it. The two key findings are set out below.

6.5.1 A rich description and understanding of this manager's views of the world

To begin with, the usage of the research device provided what can be considered as a rich, structured and fairly detailed description and understanding of how this particular manager perceived the world. The possible reasons underlying the way he saw the world, and some possible consequences of seeing the world in such terms, were addressed in considerable detail.

The research tool thus provided some interesting findings and insights into this actor's views. It revealed how this director unconsciously saw his surroundings in terms that could be described as those of a network, holding a dynamic and multi-disciplinary view of the world and identifying himself with the company and with its explicit identity. It showed how he perceived his company as being part of a *whole* that had multiple and interconnected actors and relationships. The usage of the tool exposed how this manager perceived actors mostly as providers for customised solutions and perceived relationships in terms of human bonding, namely power issues. The manager appeared to be willing to rely, to a certain extent, on other people's expertise to know what was going on in the world, preferring to transmit factual knowledge than perceptual knowledge. Because his functions were mostly developed outside the Portuguese context, he saw himself as an 'outsider' in the Portuguese business scenario, whose knowledge relied solely on his past experiences and on what other actors had told him about. The director also showed some flexibility in the sense that he tried to understand how other actors might think and perceive his company's business activity and the world. The tool exposed how this manager held a broad, comprehensive and structured view of his surroundings, frequently simplifying reality as a technique that helped him to deal with their complexity.

The research tool also revealed that the way this respondent perceived the world was strongly associated with his objective features, namely his considerable working experience in the business and in the company, and the nature and diversity of functions he had been involved in. It was also related to some of the visible policies implemented by the company and with some of the objective characteristics of the sector. The analysis for this individual therefore has revealed that there appears to be an association between the way people perceive the world and individuals', companies' and networks' objective features. It is thus proposed that it is important to include these objective features as part of the analysis of Network Pictures.

6.5.2 Contradictory outcomes in the way he perceived the world

The other central thing that resulted from using the device of Network Pictures was the set of identified contradictions in the way that this respondent perceived his surroundings. That is, outcomes that went against what this researcher or IMP theory would have expected. This differs from the notion of inconsistency discussed in Section 6.3.4.2 where contradictory statements occurred at different points in the same interview.

Regarding these contradictory outcomes, to begin with, given that his main function was in the area of project development, an area that implies a strong activity linkage and resource tying between parties, this manager was expected to place a stronger emphasis on these two dimensions of relationships and not so much on actor bonding. Furthermore, because he had been in the business for a considerable period of time he was expected to hold a more complete view of relationships and describe them in terms of their three dimensions (i.e. actor bonds, activity links and resource ties) and not simply or mainly as actor bonds.

Another unexpected outcome that was identified concerned the focus he placed on different time periods. Although he appeared to have a clear view of what was going on in his surroundings and was involved in a function that conditioned relationships' and the company's strategic direction, he was also sometimes quite tentative and non committal, with regards to what was going to happen in the future and did not show much interest in talking about it. Given his highly responsible role, it would be expected that strategic planning for the future would be in the forefront of his mind.

A further outcome contrary to expectations, given the company's ethical principles as discussed in Chapter 5, was how he spoke in business terms about matters that he would be expected to talk about in ethical terms and as will be found in the next chapter this was the

case for a number of his colleagues. This raises the question of how his position in the company impinges on his ethical perspectives.

One other contradictory outcome concerned the lack of emphasis he gave to actors' internal procedures. Given that his main function was internally oriented, he was expected to place a greater focus on companies' internal structure and organisation, but instead he preferred to focus on what was going on between companies.

Finally, regarding counterintuitive outcomes, as a result of his vast experience and consistent with the IMP theory, this manager was expected to think about his surroundings as an arena not only for conflict, but also for collaboration. However, his expressions mainly covered this area in terms of conflict and power.

A different type of contradiction arose in that sometimes the respondent claimed to see things in a particular way, but his words actually showed a different perspective from this researcher's point of view. The following presents some examples of this. To begin with, he claimed that he held a strong functional focus, believing that his view of his surroundings was strongly influenced by his function in the company. However, he emerged to have a quite comprehensive view of things, one that was not conditioned by any particular function. Furthermore, he claimed that he was not interested in holding a comprehensive view of what was going on in the Portuguese setting, because as he stated he was based outside of Portugal and he preferred to rely on others to know what was going on in that context. However, his interview responses showed that he held a comprehensive knowledge of the surroundings, showing great interest in knowing what was going on. Finally, he claimed to see the world as a supply-chain, but this researcher interpreted that he viewed the world in terms of what could be described as a network.

The above were the main counterintuitive and contradictory outcomes observed for this manager. As discussed in Section 6.3.4.2 regarding the consistency of this manager's views, once these contradictions have been identified, it would now be important to understand the reasons why they exist. Although some of the reasons for these anomalies have been suggested above, it is beyond the scope of this research project to cover these in any more detail.

The sense-making process is one of constant ongoing resolution with its subjectification-objectification-subjectification activities [see Chapter 2, Section 2.2.2.3]. It is about reflections, as the result of the dynamic nature of the sense-making processes and of the

changeable nature of human beings. This respondent's Network Picture analysed above revealed itself to be of a complex and ever-changing form. The fact that there were substantial contradictions in his responses reinforces the idea of his world being in permanent flux, in that there were many areas of his involvement where resolution of day-to-day issues were seen to be on-going. That is, it is argued that where a snapshot such as this manager's interview captures unresolved phenomena, the very fact that these need resolving exposes the dynamic nature of the situation, i.e. it is fundamentally about shifting perceptions.

At this stage, the most important thing to note is that the research tool of Network Pictures brought out these counterintuitive outcomes. From this, it has become possible to investigate the underlying reasons for such phenomena, which is largely beyond the bounds of this research project. On the other hand, the tool allowed for the emergence of evidence that supported expectations, in that certain features of this individual's Network Picture followed the models proposed by IMP researchers to understand industrial systems, e.g. he spoke about his surroundings not only in terms of relevant actors but also as processes between them.

This chapter has shown how the structure of the Network Pictures derived in Chapter 5 could be applied to a particular situation involving one specific individual. It has demonstrated that Network Pictures enable researchers to grasp, in a rich and fairly complete way, individuals' views of the world and as such can be considered a usable tool. The tool has thus allowed for the *telling of a story* about the way this manager perceived his surroundings and although the interpretations that were carried out may be questioned, this work has not been undertaken previously in such a structured way. Moreover, it is argued that many of the interesting and sometimes unexpected findings that resulted from the conducted analysis could not have been revealed by other means. Furthermore, the findings revealed the usefulness of Network Pictures as a research device for research into organisational networks. Last but not least, the evidence in this chapter has demonstrated that using only a pictorial analysis may be insufficient and even misleading to gain an understanding of someone's perception of the world.

In the following chapter, the analysis is taken to the company level: Network Pictures from respondents working in the same company are analysed and compared.

Chapter 7

7 Network Pictures from One Company

7.1 Introduction

In this chapter Network Pictures are analysed at the company level. The aim is to illustrate some of the diversity and commonality that Network Pictures may have in a company and to investigate how some personal features and other contextual factors may condition how individuals see the world. Although this analysis has been carried out for all companies, this chapter concentrates on one of these, namely the Logoplaste Group. The chapter also aims at demonstrating how Network Pictures may be used to analyse and compare the views of actors across an organisation and to explore what interesting phenomena may be captured. Subsequently, as these phenomena emerge, possible explanations for them are posited.

In Section 7.2 there is a thorough analysis of Network Pictures from one company and in Section 7.3 an overview of the findings and conclusions is presented.

7.2 A Thorough Analysis of Network Pictures from One Company

In this section there is a thorough analysis of Network Pictures carried out at the company level for the Logoplaste Group; a company included in the *'Product Network'*. This analysis involves looking simultaneously at seven Network Pictures from this company and making comparisons. The tables that resulted from analysing all seven interviews conducted at this company are presented in **Appendix 4**. The analysis, and thus this section, is divided into four stages each comprising one of four Groups of Network Pictures Dimensions previously established.

7.2.1 Focus of respondents' views

7.2.1.1 Actors

A few respondents considered being the centre of the business world, the key element to make it 'function', whilst the majority felt that their company was an important element of a *whole*. For example, one respondent said that *"this industry suffers the pressure of modern distribution which has a strong negotiation power... and this leads multinationals to look for savings with their own suppliers, and that includes packaging which is the Logoplaste Group's core business activity"*(Commercial Director and KAM). This sentence shows the

emphasis he placed on the surroundings, whilst highlighting the important role that his own company paid in these overall surroundings. Almost every respondent physically represented the Logoplaste Group as the ‘hub’ of the world, by drawing a big circle representing their company right in the middle of the provided A3 sheet of blank paper. This reflects a stereotyped and most commonly egocentric view of the world.

However, one respondent represented the clients and their relationships as the centre and the Logoplaste Group as a mere supplier of a specific part of the client’s internal value chain. It was only after representing and describing the client’s internal value chain, that he introduced his own company’s role in the world by saying “*the way the Logoplaste Group inserts itself into this world is as follows...*” (Commercial Director and KAM). This respondent was able to ‘step-back’ and think about how other actors may perceive the world, whereas all the remaining respondents were not willing or able to do so. Interestingly, this was the only respondent from this company who was close to the production process, in the sense that he was working within one of the company’s *in-plants*. The other people were not so directly related to the production process. Thus, the person closest to the centre of the production seems to have had the less egocentric view. This could show there is connection with regards to how the proximity of an individual to the production process could decrease their egocentric view of the world.

Notwithstanding this egocentric view of nearly all the respondents, they all placed the client as of paramount importance for the effective functioning of the company. This came through quite clearly in the interviews with respondents frequently saying things such as “*I have an idea on what is going on with clients because I think it is fundamental for us to work not for within the company but according to the clients' needs*” (Operations Director). It could be that there was some sort of internal conflict amongst those who place the company at the ‘hub’, in that their company loyalty led them to overemphasising the egocentric position, when they did see the client as having equal importance. That is to say that their physical Network Picture could contradict their actual view about the world as expressed in the interviews. Another possibility of the pull factor towards the client could be associated with the explicit identity that the board intends to disseminate, according to which the client is the most important entity in the world. There appeared to be some evidence of ‘forces’ pulling in different directions, to and from the egocentric view.

A predominant egocentric view may result in the company’s incapacity to understand the opportunities and threats of the world in which it is integrated and interact accordingly. It may not be willing to consider what the interests of the potential counterparts are and that

relationships only function when both parties, directly or indirectly, benefit from it. This could explain the board's conscious attempt to move the company's focus towards the client.

7.2.1.2 Processes

As discussed in Chapter 3, according to IMP theory the structure of a network has three dimensions, these being actors bonds, activity links and resource ties. The evidence that came forth with the application of the Network Pictures tool is as follows:

Actor Bonds

All respondents thought about relationships at least in terms of actor bonding. Clearly there was some consensus that this aspect of relationships was perceived universally as crucial amongst these managers. As one respondent said, *"this is very relational... and so there is a common language and a natural empathy [and] these are all small aspects which contribute to facilitate"* (Technology Director). One other interviewee claimed that *"... there is a need for maintaining a continuous human relationship [...with suppliers] so that we can make a phone call and say that we need this or that"* (Commercial Director and KAM). In other words, respondents talked about relationships as a form of intensive social exchange, claiming that the quality of relationships was dependent on the quality of personal relations between companies' owners (or company members) and also on the quality of relationships' atmosphere. Informality and personal style were also believed to play an important role in the quality of relationships. For example, people from a Latin background, e.g. people from Portugal, were perceived to be more flexible and informal in their approach, when compared with those with an Anglo-Saxon background. Respondents frequently talked about particular individuals from other companies, considering that personal relations were crucial: they allowed for access to important information for their company's business activity and it was fundamental to identify and talk to the 'right person' for some specific developments. They held a considerable knowledge on who was in the plastic industry, and this was associated with people usually being in the industry for a long time, despite the frequent changes between companies, and also a result of the concentration trends of the sector that has led to a reduced number of relevant players and thus they have become more easily identifiable.

This emphasis on actor bonding may be related to the company's production and delivery system, which presupposes a strong physical proximity between the involved parties, granting good inter-personal relations and natural empathies; a crucial importance for the quality of relationships. One of the interviewees claimed that *"... the contact between specific people is essential for us; those men that are there, on the shop floor, dealing with all the*

pressure of the shop floor, facing planning changes...” (RM Purchasing Director). Moreover, the plastics sector is known for “old contacts” and good inter-personal relations represent privileges for signing or renewing contracts. As one of the respondents put it, “*it’s an industry [that] has a lot of personal contacts, of vision, the person that “I already know”*” (International Technical Director). On the other hand, the hole-through-the-wall also implies a vast array of activity linkage and considerable investment in resources by the involved parties. Therefore, more respondents would be expected to think more intensively about the world in those terms. But it seems that respondents took this fact for granted, not talking much about it.

Actor Bonds and Resource Ties or Actor Bonds and Activity Links

One respondent perceived relationships in these two dimensions: as actor bonds and resource ties. For example, she said that “... *we have teams dedicated to us, which facilitates the relation a lot and we also have teams dedicated to that; therefore, it is a very, very strong relationship...*” (RM Purchasing Director). So instead of perceiving relationships solely as described above, she also thought about the involved inter-personal investment, that is to say in terms of: 1) commercial resource ties (e.g. key account managers, specialised and dedicated sales or purchasing teams); 2) technical and material resource ties (e.g. plants that were specially conceived for a hole-through-the-wall relationship, periodic seminars for specific counterparts to updated them with newest innovations, specialised teams to manage equipment, machines which are developed for a specific relation); and 3) as intangible resource ties (e.g. hours of contact implied in a relation). It could be argued that in her position as raw materials purchasing director she would have a more complete view about processes.

Two respondents perceived relationships as actor bonds and activity links. Thus, not only did they perceive processes as the inter-personal bonds described previously, but also as activity coordination and interlocking behaviour between counterparts. That is to say, they described relations as: 1) forms of logistics and production coordination (e.g. joint production and delivery planning according to the clients’ needs); 2) technical and design coordination (e.g. joint efforts for designing the plant, running tests and rehearsals, adjusting equipment tunings, joint R&D for specific technological solutions and cross party relations in the technological area); and 3) administrative and commercial joint management (e.g. coordinated activity and periodic meetings between Logoplaste’s KAM and the clients’ packaging and /or marketing departments for solution development or adjustment, production quantities adjustments according to the counterparts’ needs). These respondents said things such as “*in terms of business, the contacts are daily in the production area. This ends up*

being the heart of our operations.... For whoever provides just-in-time, that is fundamental” (Technology Director) or *“Logoplaste.... eliminates inbound logistics, delivers to production in a just-in-time regime and also minimises stocks through joint production planning”* (Commercial Director and KAM). This comes across as an anomaly, because they both had responsibility for resources and thus it is hard to give an explanation for why they did not put further emphasis on this dimension.

Actor Bonds, Activity Links and Resource Ties

Given the IMP model mentioned above, perhaps the most revealing finding in this section on process is that none of the respondents expressed a strong awareness of all three entailed dimensions. Those who recognised two aspects in the processes did mention the third, but it could be argued that not to the extent that they gave equal weight to all three. Clearly, the practitioners do not think in the same terms that academics do.

With a predominantly incomplete view of relationships, a company may be incapable to fully capitalise on existing ones or to assess the full potential of new relationships. On the other hand, by investing in actor bonding, a company in the ‘*Product Network*’ would be complying with the way business is traditionally made in the plastics sector and also focusing on an important aspect of *in-plant* based relationships.

7.2.1.3 Actors / Processes

All respondents perceived the world as set of interrelated relations between actors and some of those respondents also thought about it in terms of its relevant actors. That is to say, the latter included not only the processes that were going on between different entities, but also named and emphasised particular players in these relationships. For example, one respondent said *“Refrige has been losing market share, Coca-Cola is losing market share; it's a huge structure, a franchise of Coca-Cola here in Portugal which is relatively big but there is an issue: Coca-Cola exercises over them a huge pressure concerning the growing rates...”* (Commercial Director); then he also said that *“Refrige is a partner and before, we used to have a very privileged relationship because of the administrator that they had and who has now left the company... We have been reducing the amount of staff since they are looking for lower costs”* (Commercial Director). It can be argued that these respondents held a more complete and clearer view than those who only thought about process, which resulted in the possibility of them better understanding what benefits and threats could result from interacting with specific parties. Moreover, they believed they knew which individuals performed the functions more effectively for the effective functioning of the company. On the

other hand, where the relationships had perhaps drifted into what could be called 'old boys networks', the situation could arise where nepotistic advantage was given to certain entities which they may not deserve. As a consequence, opportunities could be missed for forging new and more profitable relationships.

7.2.1.4 Actors' Features

Most respondents held a simplified view of actors' characteristics, in the sense that they thought about them solely in terms of one or two of its following dimensions: resources, aspirations and problems. Even respondents that had been in the business for a long time and that were involved in close and intense relations with counterparts, did not think about actors in terms of all of these three features.

The commercial nature of the actor, i.e. whether a client, supplier or competitor, appeared to condition the dimensions of actors' features that respondents talked about. Respondents held a more complete view about clients than about other parties, usually thinking about the former in terms of all three dimensions. Competitors were usually perceived in a less complete way, that is in terms of problems and resources, whereas suppliers were commonly perceived in a very simplified terms, as problems.

Most respondents thought about their own company in terms of resources and aspirations, rarely thinking about it in terms of problems. By contrast, when asked about their views on the surrounding actors, they most commonly spoke in terms of problems. But it could well be that these external entities may have taken the position that some of the problems rested with the company in question and it would appear that the respondents were ignorant of this. As a consequence, perceptions of where the problems lie may be conflicting. This could involve considerable risk for the company since those surrounding actors who perceive the company in terms of problems may require a different strategy from those who do see it in terms of resources or aspirations.

Generally respondents from this company talked about the surrounding actors' structural features, with the aim of defining their own company's situation and strategy. So, in terms of other actors' resources and aspirations respondents were mainly interested in understanding the benefits that could potentially accrue to their company. In terms of other actors' problems, respondents mostly showed interest in helping those actors coping with their problems, with the aim of transforming them into opportunities for their own company.

Overall, this appears to reflect once again respondents' egocentric view. But then, given that this is a company with profit goals, this finding was not surprising.

7.2.1.5 Time Span

All respondents talked about the surrounding world in terms of what was going on at the present and some also empathised the past. It is considered that the latter had a more complete view than the former, because past experiences and events are commonly the basis for what takes place in the present and for what can take place in the future. One of the respondents said *"I was here when for environmental reasons, among others, PET replaced PVC; and that was a big change for this industry... I remember that before, there were many quality problems in production due to the poor quality of raw materials..."* (RM Purchasing Director). Furthermore, the same respondent also said that *"today things are very different, the stability is very different; it's an industry that can dedicate itself to a stabilised production, very commoditised, and therefore, it dedicates more time to innovation..."* (RM Purchasing Director). Thinking about the past brings into one's view of the world an element of dynamism and it allows a clearer understanding of the world. It may also be useful for strategic thinking. Curiously, only one respondent included the future as a key time dimension, which in strategic management terms is an essential element of planning. He said things such as *"But when the competitors that compete on a price base need to renovate their machinery, on that occasion, they will call us asking if we want to buy them and the answer will be no; some of them are thus destined to disappear"* (Commercial Director and KAM). This could be attributed to a degree of complacency brought on by the high level of entrenchment of this company in the sector of the plastics industry.

7.2.1.6 Function

All respondents expressed their world in terms of the function they were currently developing. Some interviewees could be seen not having such a particular functional focus, as they included other functions as being of comparable importance. This was the case for the RM Purchasing Director who at one point said *"I know that to put through a new raw material in this company, it is a real drama"* (RM Purchasing Director), and on one other time she said *"... we know who the most demanding clients are ..."* (RM Purchasing Director). This multidisciplinary vision may be associated with the Logoplaste Group's several internal mechanisms, which aim at instigating amongst its directors a multidisciplinary view of the world. This culture promoted by the company's board encouraged managers to be specialists in their own field and simultaneously to develop a

multidisciplinary understanding of the company and of its surroundings. However, this goal does not appear to have been achieved, because several of the management respondents expressed themselves mainly in terms of one specific function.

7.2.2 Weight of respondents' views

7.2.2.1 Normative

All respondents had strong opinions on how actors should or should not behave in order to achieve success in the business world. Among other things, they held a prescriptive view on: the actions that their company and others should implement to assure their competitiveness, how relationships with suppliers should be managed and what was the appropriated extent of collaboration or power between parties. They also believed knowing what the recommended attitude towards competitors was and what information ought to be shared between parties. They may have had clear opinions on what was right or wrong and of the processes that should be taking place, however respondents were not always in agreement as to what actions should be taken. For example, one of the interviewees said *“for the equipment suppliers, it is paramount to know raw materials and to be able to transform them”* (RM Purchasing Director), whereas another respondent said *“we are an interesting solution only for companies that have important sustained volumes;... if it does not have enough volume, it's not justifiable in term of costs that we set a structure for a small production unit”* (Technological Director). Notwithstanding these differences, the culture of the Logoplaste Group encouraged its managers to hold firm beliefs on such processes.

A predominantly prescriptive view may be an obstacle for change to take place in this company, because individuals may be reluctant to the idea of modifying their current frameworks. However, there may also be a positive side in that respondents with such strong beliefs are expected to show great persistency and confidence in what they do and in crisis situations or in very dynamic environments this attitude may save the company from 'sinking'.

7.2.2.2 Moral

Most respondents saw the financial probity of a company as paramount, but still held a moral view of the world with regard to the existence of a “code of honour” between companies, which generates expectations of behaviour and conditions interactions. This came through quite clearly in expressions such as the one that follows: *“our clients are multinationals*

which means that at the risk level the possibility of not getting paid or of breaking the contract rules is very low, because these are companies with at least a minimum of ethical and ontological rules” (Commercial Director and KAM).

Moreover, for some issues some of these interviewees put ethical considerations above business considerations, particularity in the area of recycling. However, even in the controversial area of recycling some respondents still prioritised the profit motive. For example, regarding the company’s membership of an Environmental Portuguese Association, one of the respondents claimed that *“this activity allows and only for the Portuguese market, for access to recycled PET for our needs at a preferential price”* (Commercial Director and KAM). Ethical and economic aims are usually incompatible and antagonistic, reflecting the possibility for internal conflicts to take place. Ethical principles are usually very personal and people may not be willing to let go of their principles for the sake of the organisation’s economic growth.

A company with a predominantly moral view may be seen more positively by its current or potential suppliers / clients, who may then be more willing to get involved or increase their involvement with that company. Obviously ethical issues are particularly topical in the present day industrial environment and a predominantly moral view may inhibit the company from pursuing some economic goals and maximising its profitability.

7.2.2.3 *Knowing What Goes On*

Most respondents were interested in knowing about what was taking place around them, showing that they held an understanding of the interconnectedness of the world. This came through when they said things such as *“I think this is a lacuna for the company, we don't know what goes on beyond this”* (Operations Director). They sought out information proactively by using their contacts. For example, one of the respondents said *“we are able to know more about the relations between Logoplaste’s suppliers and competitors because there is some contact with suppliers’ technical staff”* (LPTD Director – R&D). Whereas others would pass on requests for information by suggesting the names of people that might hold the knowledge, rather than participating actively in this process. One interviewee said *“you should talk with a colleague of mine, the operations director, about this company; his reaction will probably be to scream and to ask you to get them out of his sight”* (Commercial Director). The latter may be perceived as a strategy that reflects efficiency and efficacy: the obtained information is more precise since it comes from experts, and in relative terms it implies spending fewer resources. These are the reasons why many companies ‘purchase’

from external entities information about the network. These entities have greater expertise and experience than the company on specific matters and can provide for that information (either entities who specialise in getting and providing that knowledge or simply counterparts who hold relevant information). On the negative side, always referring to experts could lead to a situation where the person that deflects the requests for information, sticking solely to learning and promoting their job requirements, fails to increase their knowledge base and hence fails to improve their comprehension of the surroundings.

In a company where there is a predominant interest in knowing what is going on in the surroundings, there may be a greater capacity to make better decisions regarding current or potential interactions, by taking advantage of the greater amount of information available. However, if the managers in the company are over involved in gathering information, the situation may arise where they dilute their knowledge concentration and consequently could lose their focus on their primary task.

7.2.2.4 Internal Procedures

Understandably, most respondents thought about their own enterprise in terms of internal structures and procedures. As one of the respondents described it, “*Logoplaste is like a satellite structure, which has the corporate, the national and regional structures and... the plants. Logoplaste is organised in the following this way...*” (Technology Director). More interestingly, the same goes for their views of other companies. That is, instead of perceiving each company as one single unit, they thought of them as a number of sections or departments and the processes within and / or between them. For example, regarding the company’s clients one of the respondents said that “*multinationals traditionally had very strong technical departments, with people with quite a vast experience... called Packaging Departments*” (International Technical Director). Moreover, most of the interviewees saw relationships as being between them and specific departments in other companies, rather than between the enterprises as a *whole*. These relationships were thus perceived with considerable level of specificity and detail. Some illustration of this is as follows: “*at the corporate level... we have a connection to what we call KAM and that has relationships with the business units (BU) and with the technological units...*” (Technology Director) and also “*there is a tendency for the Packaging Departments to disappear and this is a huge advantage for Logoplaste: it can talk directly to marketing and is able to be responsible for the entire process; sometimes, the Packaging Departments people didn’t quite understand what the marketing people were saying and their role as filter didn’t work*” (International Technical Director). This way of perceiving the world did not register as particularly

surprising, given the intensive activity linkage that is traditionally associated with hole-through-the-wall production and the complexity of the Logoplaste Group's internal structure.

In a company such as this, where the predominant situation is that there is a detailed understanding of processes between different departments, there is more likely to be appropriate and effective allocation of resources involved in the processes.

7.2.3 Specificity and Coherence of respondents' views

7.2.3.1 Coherence with Board's Explicit Identity

There was a predominant idea among respondents on what the company's identity was and should be about. However, there was not one that is shared by all respondents. The Logoplaste Group was described by most respondents as a packaging solution provider, an expert in hole-through-the-wall supply and a very good manager of relations with both clients and suppliers. They also considered that they had a strong orientation towards the clients, reflected in a 'can do' approach when it came to solving problems. The company was seen to be benefiting from a strong reputation that led to a high level of respect and trust, and also as a strong state-of-the-art company. On some aspects of identity there was dissent from all of the respondents. Logoplaste Group's board tried to diffuse an image of being a decentralised and informal organisation, with a low profile and a strong team spirit. Moreover, it wanted to be seen as an organisation that made the most appropriate decisions in satisfying both suppliers' and clients' needs. However, some respondents said the company had achieved this from an outside perspective, but did not accept that was the way they felt while working for the company. There was much more formality and control over the workforce than what managers claimed. Moreover, they considered that management was too domineering and that the best interest of the client or supplier was not always the priority. As one respondent put it "*...the negotiation for raw materials within our company is very limited....the company's board and purchasing area impose certain suppliers on us and we have to work with those who were selected....don't ask me why we still have relations with them, ask our managers...*" (Commercial Director). On the other hand, the effort made by the company's board to disseminate its desired identity regarding the latter topic comes through in the following sentence: "*there are antagonistic interests: the production people never got along well with the commercial people because the production managers want to produce well and the commercial people want to sell well....we try to negotiate and try to convince them that that is the best solution...*" (RM Purchasing Director).

Whilst some of the respondents who did not agree with aspects of the company's identity kept quiet, with the aim of avoiding internal conflict, choosing to put company loyalty first, others did not hide their feelings and were critical of the company's policy to other actors, both internal and external. If there is a lack of spoken disagreement there is the danger that errors are missed. However, by critically discussing what may be at fault they may undermine the company's leading position. That is to say, the lack of total coherence amongst the managers of an organisation, not simply the workers, may tarnish the company's reputation and leading to competitors trying to seduce the company's clients.

7.2.3.2 Situation and Actor Specificity

Some respondents talked about general situations and / or groups of actors, whereas others talked about specific ones and there were some who expressed themselves in both ways. An example of the latter was when one of the respondents spoke in general terms about clients saying that "*in some units within the partners, we have an over capacity and our partners suggest and give us permission to use that over capacity to 3rd parties*" (Commercial Director); then speaking in specific terms by providing an example: "*for example, at Unilever in Portugal where I produce margarine packages, I also produce butter packages for one other client, Lactogal*" (Commercial Director). Interestingly, those who aggregated actors also did so for processes.

Because some respondents identified multiple entities, it was impossible for them to talk about each in specific terms. Their past experience allowed them to trace commonalities and develop archetypes, and by extrapolation to view entities in an aggregated form. That is, they were not interested in specificities and believed their interpretative powers would lead to accurate generalisations. By doing do, the perception is that this will speed up the company's assessment and decision processes. The drawback is that there is the risk of treating everything or every entity from the same group in the same way, when in fact different treatment techniques may be required. The company may thus be blind to specific actors and process and the appropriate action that should be taken.

However, in the Logoplaste Group's case, given that frequently respondents talked about both specific and general dimensions, this risk was seen as minimal.

7.2.4 Respondents' Overall View

7.2.4.1 Stereotyping

Generally, respondents saw the world in terms of what could be understood as a network. However, none of them used this specific term and this researcher used the responses to the interview questions to make an assessment of their level of recognition of the existence of a network. Most of them talked about the effects of interconnectedness between business relationships, e.g. *“I think that the lobbying that Logoplaste does in the big international associations must have some impact over the other entities’ activities”* (RM Purchasing Director) ;and also *“I have knowledge of those relations that take place between clients and their clients: the distributors”* (Operations Director). They looked at indirect relationships, e.g. *“there is a pressure here on the consumer side”* (RM Purchasing Director), and considered relationships between several types of companies, e.g. *“...the technology suppliers....what they do with....the other plastic converters”* (Technology Director); and also *“our relation with official entities”* (Commercial Director). Moreover, they looked into issues of positioning, e.g. *“regarding our competitors, it's hard to define how they position us”* (Commercial Director and KAM), among other features of networks.

Some respondents explicitly stated that they operated within a supply chain, a classical stereotyped and hierarchical way of perceiving the world. Whilst it can be interpreted that some of these people did see the world in these terms, others who claimed they did, implicitly, the world they were describing took the form of a network. One of the respondents talked about several features associated with that of a network, saying for example that *“this is all interconnected...”* (RM Purchasing Director), and *“I know that we have an important position, not only in relation to the Association but also regarding the sector in Portugal”* (RM Purchasing Director), and yet one the other hand claimed that *“for me, this is very clear; I am here, in the middle of the supply chain”* (RM Purchasing Director). This reduction of the network to a supply chain by those who claimed to see the latter could be interpreted in a number of ways. For example and as discussed in Chapter 6, it could be a simplification technique unconsciously put into practice by these respondents, to achieve a sense of control over their complex surroundings or it could be associated with their knowledge of the terminology used in economic textbooks.

In addition, there were also a few respondents who saw the world in other terms, such as that of a chain of value like Porter's Five Forces Model, amongst others.

It could be that it would be beneficial for the managers of this company, who in essence see a network but don't know it, to have it explicitly pointed out to them. However, the company appears to be working very well without the awareness of such an entity.

7.2.4.2 Structuredness and Consistency

The majority of respondents held a consistent and structured view of the world around them. Structure and consistency, two features that can be associated with managers carefully and thoroughly thinking through what is going on and between whom, reflecting an attempt to have some kind of framework of the world. These qualities are generally generated over time, through a process whereby people identify what they consider relevant. In this process of framing, they may include greater or fewer actors and processes, with richer or poorer detail and in a more or less stereotyped or simplified way, over time.

In a company where there is a predominantly structured and consistent view of the world, sound decisions may be expected to be made quicker and with greater confidence. However, as it needs pointed out in Chapter 6 to be recognised that individuals are in a permanent state of flux and even though on the surface there appears to be consistency, beneath the surface there much internal dialogue and potential contradiction in reaching decisions. One of these managers who came across as very consistent in his views actually said, on the one hand *“Our action is, contrary to what people may think, associated with a low environmental impact...”*, revealing how he considered important the company's environmental impact and then he said *“...and anyway, I do not worry much about our environmental impact...”* (Operations Director). One other respondent at some point of the interview said *“I know about relations with suppliers... even this week I visited two trying to understand what they are doing, what there is new, what can be done to improve. This is one of my functions”* and he then said at another point in the interview that *“I am not sure if I am the most appropriate person to tell you about the relations we have with suppliers”* (LPTD Director – R&D). These are just two of the small examples of contradiction that came through quite frequently.

7.2.4.3 Stasis

Almost all respondents saw the world in evolving terms, reflecting the surrounding's dynamic nature. As one of the respondents put it, *“we have been trying, calmly, and we have been invited to go with them to Eastern European countries”* (Commercial Director). Although the company had not been recently through any major restructuring, the sector where it carried out its business activity had been through many changes, as the result of a

concentration. Moreover, since it was a highly technological company and sector, novelties and innovations were introduced all the time and in several locations. Thus, besides the changes that usually took place in a normal business scenario, this company was integrated in a sector and in a business activity with which a strong dynamism was associated.

Recognition of the dynamic nature by the management would be seen to enable it to respond to changes in a timely and efficient manner. However, as illustrated in Chapter 6 at least one manager in this company failed to talk about the future during the interview even though it is clear that the future is an integral part of any effective dynamic assessment. This was also the case with some of the other managers.

7.2.4.4 Breadness

Not all respondents were able or willing to see the same number of actors and relationships. Those who talked about large numbers of actors usually also did so for relationships. Whilst almost every respondent thought about the company's direct business actors and its relationships with them, some more perceptive managers also thought about entities (e.g. European and Local Plastic Commissions, the State, Recycling and Environmental Organisations, the Press and competitors) and relationships which only indirectly affected them or not at all. That is to say, they were aware of the interactions of companies who were neither clients nor suppliers. For example, one respondent talked about the relation between some of the Logoplaste Group's clients and their filling suppliers and how there was a business opportunity here for Logoplaste to expand its business activity: working with the filling suppliers, it could provide the client with a more complete product. If this respondent did not see this relation he would not be able to identify this opportunity for collaboration.

The inferences from these observations are consistent with those discussed at the end of the dimension Knowing What is Going On in their surroundings. That is, it is important to increase knowledge, but a situation could arise where too much knowledge is negatively affecting the business operation.

7.2.4.5 Comprehensiveness

Whilst some respondents perceived the surrounding world in rich and detailed terms, others were not able to. They did not have the wealth of experience of their more established counterparts and thus had a restricted level of access to useful information. Given the company's high priority on communications and cooperation it would be expected that the

dissemination of rich knowledge flows would occur throughout the company. However, this evidence suggested that this was not the case and such a process was not talked about. This might suggest that people were protective of their knowledge and did not want to share it.

Interestingly, respondents from this company that could be considered to have a broad view also held a comprehensive view. That is, those who looked further also looked deeper.

7.2.4.6 Surroundings as collaboration or conflict

The world was perceived by most respondents as being predominantly split between a constant struggle for power or as collaboration between parties. Only a few respondents perceived the world as a combination of both. The ones who had a polarised view could be described as having a simplified view of business relationships.

Respondents who thought about the surrounding business world as a scenario for collaboration between actors, frequently talked about the joint efforts with the clients to develop solutions for those parties. Also, relations between suppliers and competitors were sometimes considered as potential collaborations for team work that could help developing the plastic containers sector. Conflict was spoken about as something undesirable, always harmful for relationships between actors and thus ought to be avoided at all cost. These respondents did not perceive conflict situations as potential sources for business development and innovation. This comes through in the following statement given by one of the respondents: *“I think that this relation of influencing or being influenced is permanent; now, the possibility of having a supplier influencing Logoplaste directly, I tell you that the answer is NO!”* (Commercial Director). This respondent did not conceive the possibility of having a supplier trying to influence his company’s choices. On the other hand, respondents who thought in terms of power between actors frequently placed too much emphasis on the expectations generated from relationships between actors and on them fulfilling them. For example, they spoke extensively about their company’s effort to avoid becoming dependent on suppliers, as well as about the permanent struggle with competitors and the high expectations clients had regarding the Logoplaste Group’s performance. These managers may have been missing out on opportunities, because they were not able or willing to work jointly with others, preferring to trust their own judgements and refusing to recognise the skills that could they could benefit from. For example, one of these respondents said that *“there is a considerable respect between Logoplaste and its competitors but I also feel that there is a big capacity to fight; there is a posture here of going to war”* (RM Purchasing Director). Thus,

this respondent did not consider the benefits that could result from cooperation between the company and some of its competitors.

7.2.4.7 Actors as Providers For...

All respondents shared the same idea on what relationships' function was about: they saw them as sources for problem solving, delivering customised solutions. This is reflected in the following sentence taken from one of this company's interviews: "*the aim is to differentiate the products (the clients' products)... the equipment and plants are increasingly flexible so that changes can be introduced in a rapid way*" (International Technical Director). But not all Logoplaste Group's clients / suppliers appeared to agree with this, and this was reflected some tensions in the relationships with the organisation [see Chapter 8].

The respondents clearly agreed with the purpose of their company regarding relationships with clients. That is the Logoplaste Group was seen as a problem solver, offering customised solutions and being involved in intense relationships with clients. They believed that clients were getting access to a flexible and high quality solution, and that they were entrusted with this outsourcing. Moreover, the clients would benefit from the Logoplaste Group's strategic relations with its suppliers.

However, not every client appeared to desire a close and intense relationship with the Logoplaste Group: once the *in-plant* was set up after the customised solution had been developed, some clients (namely multinationals that had a centralised packaging policy) did not expect or want the Logoplaste Group to go forward with further innovations or suggestions. So, whilst some clients wanted the provided solution to simply remain as being a commodity, Logoplaste Group's managers did not wish to see things in those terms, preferring to see themselves as problem solvers throughout the duration of the relationships.

All the company's respondents also talked about most suppliers as problem solvers. Suppliers were mostly cherished for their flexibility, which allowed Logoplaste to rapidly answer clients' unexpected requests or production changes. They were also seen as a source for innovation and competitiveness. However, they were not interested in having intense and close relationships with all suppliers. Those who did not supply strategic materials or equipment were viewed at a more standard level. Thus, equipment and materials suppliers were perceived as having very different functions. The former was expected to provide customised solutions, whilst keeping the company updated with the latest innovations; the latter was expected to provide cost efficiency and at the same time keeping the ability to carry

out potential minor adjustments. Nevertheless, both types of suppliers were expected to be part of the solution to the Logoplaste group's problems, being involved in a "*what I can do for him and what he can do for me*" (Technology Director) type of relationship.

However, some of those suppliers which the Logoplaste Group's members considered not to be of strategic importance were looking for more intimate relationships with that company; in most cases, their major client. By contrast, the Logoplaste Group's members appeared, on the whole, to be preoccupied with their own procedures and gave little attention to these suppliers' wishes.

Given this miscommunication between actors, a case could be raised for discussions to elucidate what the goals of the different organisations for the relationships are and to see if any of them can be accommodated. This type of action can be nevertheless costly and time consuming and could prove fruitless.

7.3 Overview of Findings and Conclusions

From the above discussion, it is possible to see that both commonalities and diversities were identified in the features of Network Pictures of the management respondents of the Logoplaste Group. Moreover, what became apparent was that no two Network Pictures were the same, that is, the number of Network Pictures that were found matched the number of people interviewed. Therefore this supports the view that multiple Network Pictures are bound to coexist within a company, as suggested in Chapter 3.

The managerial and organisational cognitive field of research, as seen in Chapter 3, has argued that companies can function even with conflicting views and interpretations of goals. The Network Pictures for this company would suggest that this proposition extends into the wider network, that is, the company can function effectively even when its managers' perceptions of external actors and relationships diverge / conflict.

If all Network Pictures of individuals from one company hold a certain feature, then to a certain extent that feature may be associated with that particular company. The context where individuals develop their business activity and frameworks, in this case the company, may thus be said to condition the way they perceive their surroundings. In the analysis carried out in this chapter, there were in fact some features of Network Pictures that were common to all respondents. The features that notably followed this pattern were: Focus on Actor Bonds, the

Surroundings as Processes, Focus on the Past and Present, Normative View of the World, Weight of Internal Procedures, Overall Consistent and Structured View of the World, Evolving View, and Actors as Providers for Customised Solutions. By contrast, there were some areas where there were significant diverging / conflicting perceptions of the world. The most significant dimensions being: Focus on Actors and on Actors' Features, Moral View, Coherence with the Board's Identity, Stereotyping, Broadness and Comprehensiveness and the Surroundings as an Arena for Conflict or Collaboration. It is suggested that given the general consensus amongst management scholars that from the resolution of disagreements creativity can be the result, further investigation of these topics is warranted.

Moreover, in view of some of the traced similarities in the dimensions along which Network Pictures are defined, two main groups of respondents could be identified. On the one hand there were those who thought about their company as part of the *whole* and saw the world in terms that could be described as those of a network. These people were interested in knowing what was going on in their surroundings, and held a comprehensive and broad view of the world. On the other hand, there were those who saw themselves at the centre of everything, not being particularly interested in finding out more about their surroundings. That is, the former were able to take themselves out of their surroundings and view them as if they were on the outside, whereas the latter were incapable of making this shift and were only able to maintain a narrow and non-comprehensive perspective on things. In Chapter 5, it was suggested that patterns of associations of dimensions would emerge when the data was analysed and the above demonstrates that this was the case. The most significant associations that emerged at the company level were in terms of the first group of respondents identified above, greater Knowing what was Going on, Comprehensiveness and Broadness combined with a lower level of Stereotyping. On the other hand, the second group exhibited lower Knowing what was Going on, Comprehensiveness and Broadness combined with a higher level of Stereotyping. Regarding the dimension of Focus on Actors, the first group talked in terms of their Surroundings whereas the second group conversed about Themselves.

The chapter has provided some grounds for reinforcing the idea of different ways of perceiving the world coexisting within the same company. This takes place no matter how strongly structured and organised the company is or how robustly its identity is established. Additionally, it has illustrated how from using the device of Network Pictures at the company level, the dimensions in which this diversity can commonly be found. The richness of this type of evidence that has emerged has brought forward many interesting features that would benefit from further investigation. The chapter has also demonstrated the important role that some contextual factors appear to play in how actors perceive the world. That is to say some

features of Network Pictures came up quite frequently in the responses of the different company managers and they appeared to be associated with situational factors that were common to all respondents.

In the following chapter, the analysis is moves on to the network level. There is a comparison between Network Pictures from individuals working at different companies, but belonging to the same network.

Chapter 8

8 Network Pictures in One Network

8.1 Introduction

In this chapter Network Pictures are analysed at the company and network levels. The aim is to illustrate how the analysis of Network Pictures can be conducted at the network level, as well as to show how contextual factors appear to condition the way in which actors perceive the world. The most commonly traced features of Network Pictures for the ‘*Product Network*’ are identified and the possible reasons underlying the traced commonality. Given that a considerable commonality was observed, not only across all Network Pictures for this network, but also within each company from this network, the chapter is divided in two main sections, each corresponding to a different level of analysis and those are the contexts of the network and the company.

Furthermore, this chapter investigates some of the interesting findings of a non contextual nature that emerged from the analysis. Differences were apparent at this level, however many of these have been covered in the previous chapter and thus to avoid repetition will not be considered again. Nevertheless there were a few differences that emerged that do deserve some consideration and these will be addressed.

In Section 8.2 and Section 8.3 there is an analysis of the commonly traced features of Network Pictures in the ‘*Product Network*’, at the network and company levels respectively. Conclusions are presented in Section 8.4.

8.2 Network Pictures in the ‘Product Network’: Commonly Traced Features at the Network Level

From the analysis and comparison of all Network Pictures from the ‘*Product Network*’, it emerged that in spite of there being significant diversity, a considerable number of Network Pictures features were commonly traced for most respondents. The majority of these commonalities appeared to be strongly associated with the nature of the network. Below, the predominant features of commonality that came out of the analysis are considered, in terms of the four Groups of Network Pictures Dimensions previously identified.

8.2.1 Focus of respondents' views

. ***Focus on the Company:*** Most respondents believed their company to be the centre of everything, reflecting what may be interpreted as their having egocentric views. For example, when asked to describe his surroundings, one respondent spoke exclusively in 'we' terms, having said "*We have the clients. We have the results, somewhere over here... Theoretically, we have Danone and our suppliers for raw materials, technology and services, and these are fundamental... We supply product and service to our clients. We are here close to our clients, who are going to make us develop new products by telling us what their new needs are about, or making us change the already existing products. Then we have our results, which are affected by the strength of our competitors and by their actions, and also by our products*" (Danone, Production Director). Very commonly and without being asked to do so, they extensively described their own company's internal structure and procedures and the internal changes that their companies had been through. Most respondents had been in the business for some time and most companies had been functioning in the plastics sector for a considerable period. Moreover, although some of these companies had been through mergers or acquisitions there was a feeling that each had established a role for itself. This is consistent with the findings in the previous chapter, in that egocentricity appeared to be common across the network.

. ***Focus on Actor Bonds:*** because most companies included in the '*Product Network*' were somehow associated with the hole-through-the-wall system, respondents would be expected to think about relationships mostly in terms of activity linkage or resource tying. However, the system also implies a strong inter-personal contact associated with that particular production and delivery system, especially on the plant floor and this was found to be the case. That is, the majority of the respondents appeared to be preoccupied with the importance of the inter-personal dimension of relations. As one respondent put it when talking about a specific client and then about clients in general, "*what makes more sense from my point of view is the trust relationship that one has with companies and people. Because they know that they can come over... The fact that our behavior with them has always been clear and honest makes them... probably giving us their preference. The relation that there is with a client has more to do with people and not exactly with companies*" (Ferro, Commercial Director). This same interviewee reinforced this focus she placed on the importance of actor bonding when she said "*because talking with people, making those connections, is fundamental... it's not by chance that when our former colleague left the company, a colleague that had been in Ferro for forty years and who visited customers for more than twenty years, we had some problems as a result of most our clients being a friend of his. He went to work for one of our*

competitors and people were telling me ‘Well, I don’t like that company that much but now that Mister Grilo is there... well, he’s a nice guy and I have to help him a little bit!’... I had the idea that companies were cold things, which operated blindly and also that products were similar and thus he was the party who won whoever had the best price... this is also true [that] the ability to manage this and the relationship between people, ends up prevailing” (Ferro, Commercial Director). As pointed out in the single company chapter [see Chapter 7] many of these actors were well established, everyone knew each other and personal contacts were considered essential for conducting business. This was a particular idiosyncrasy of this network and could well explain this focus on Actor Bonds.

. ***Focus on Processes:*** although many respondents saw the world in terms of relevant actors and particular people, most perceived it as relationships between actors. The hole-through-the-wall production system presumes intensive and usually continuous relationships between actors, and respondents are frequently thinking about these processes; mainly actor bonding. Also, most respondents had been in the business for a considerable period of time and had been involved in multiple functions and had thus been exposed to a variety of situations. As a consequence they built up a strong understanding of the processes involved. For example, as one interviewee who was directly involved in ‘hole-through-wall’ put it, *“Well, SICPA technically accompanies Amcor Neocel 24 hours per day because the printing machines don’t stop and obviously we have that duty of accompanying them 24 hours per day. Aspects that are more linked to technical issues, planning and stock management are usually handled by me” (Sicpa, In-Plant Director).*

8.2.2 Weight of respondents’ views

. ***Normative View:*** the great majority of respondents held a prescriptive view of the world. Not only had most of the interviewees been in the sector for a number of years, but also most companies had been interacting in this sector for many decades. Possibly as a result of this, there appeared to be some implicit rules that had been developed through time and that people more or less complied with. For example, when describing what the clients looked for, one interviewee said *“PET is nowadays a commodity and therefore the clients are not loyal; they buy from whoever gives them lower prices... In the fibre area the situation is quite different and here we are talking about long-term partnerships. It is not very easy for our clients to swap suppliers, because there is a vast range of machinery tuning for the type of fibre that is bought and that the clients use in their machinery. And although the price is also important, there is a bigger notion amongst potential clients with regards to the*

importance of the service and of having partnerships. But I believe that is due to the fact that for them it is not very easy to change suppliers; on the other hand, a container producer can change the PET that he uses in his machines whenever he wants to, because it only requires tiny tunings” (Selenis, Logistics Director). The view that this interviewee has put forward is that in order to be competitive, in the plastics sector his company has to be able to provide low prices to its clients, whereas in the fibre sector it must to be able to be willing to get involved in what can be said a *partnership* type of relationship. The argument for this theory is that while clients in the plastics sector can easily swap between suppliers, because the swapping would not imply major tuning of their machinery, the same can not be said about the fibres sector where the opposite situation takes place.

. **Relevance of Companies’ Internal Processes:** the majority of respondents were very willing to explain the complexity and importance of their own as well as other actors’ internal processes and structure. The hole-through-the-wall production system presupposes a typically strong internal linkage and activity coordination between actors and thus their focus on companies’ internal aspects does come across as much of a surprise. As one respondent put it *“The clients have a value chain, one that always has support activities such as purchasing, technical and technological support, finance, IT and others such as human resources. But in operational terms, they have inbound logistics, and these traditionally consist of bringing trucks with plastic containers from a faraway location whose suppliers are at a distance and with whom the relationship type relies on a pure price competition. These empty bottles go into the storehouse and are stocked and then they manually feed the client’s production line where he then fills them, packages and then sends them to the market accordingly, at the marketing and sales required volumes. The way the Logoplaste Group inserts itself into this world is that the client’s purchasing area studies alternatives to glass, carton, and plastic for its containers, and activates dialogue when it has to make decisions in order to sign plural-annual contracts”* (Logoplaste Group, Commercial Director and KAM). Also, most respondents were or had been at some point in the past involved in internally oriented functions. This probably explains why most of the interviewees were well informed and emphasised the importance of companies’ internal processes.

8.2.3 Specificity and Coherence of respondents’ views

. **Groups of Actors:** Commonly respondents thought about groups of actors instead of (or as well as) specific ones. There was even a Production Director that did not speak about any specific actor, speaking instead about the company’s internal structures and when referring to any external entities he also spoke about groups: *“I rarely speak with suppliers... I speak with*

them when there is a quality complaint and the supplier wants to know what was the impact at the plant level” and also “I don’t have much direct contact with clients but we know, more or less, what the customer wants... the client gives us some input through their complaints and this helps us a bit” (Ferro, Production Director). Companies involved in the ‘Product Network’ generally had a considerable number of direct counterparts and in addition there were numerous other actors, who were directly or indirectly connected to the network. Thus it would be extremely difficult for them to be able to concentrate on each of these people and this may explain their preference to see groups rather than individuals. Moreover, as explained above, most respondents had been in the business for some time and this could have led to them forming and developing group archetypes, as described for the Logoplaste Group in Chapter 7.

8.2.4 Respondents’ Overall View

*. **Network or Supply Chain:** the majority of respondents saw the world in terms of what could be said to be a network. Predictably, some of these respondents claimed to see a supply chain. They were in a sector where companies had been around for some time and where people were used to using more conventional models to portray reality. The supply-chain model appeared to have been informally institutionalised in the sector, as the way to describe relations. In the last two decades IMP researchers have demonstrated that considering the network is the most appropriated way to portrait business activity in industrial systems. However, some other models are strongly rooted in a number of industrial sectors and this would appear to be the case in the plastics sector in Portugal, where the supply chain is still seen as valid. It is worth pointing out that most respondents who perceived the world in terms of a network had been in the plastics business for a substantial period of time and thus seemed to hold an understanding of the interconnectedness of their surroundings. For example, one respondent who had been in the company and business for a considerable period of time, spoke extensively about the interconnectedness that characterised his surroundings, explaining how things that took place in a certain location of the network affected her company’s business activity. Amongst other things, she said “*This sector is going through a crisis situation, one that is fundamentally due to the petrol price oscillations. Amongst other things these oscillations lead to an increase in the variation of the price of our raw materials as well as of the transportation of our final products. Unfortunately, not everyone in our market is able to understand this relation, not assimilating that Grandupla cannot survive going through these price oscillations of raw materials without changing the prices of the products... most of our clients do not accept this fact very well, mostly because some have agreements with hypermarkets which do not allow them to change prices.*”*

Therefore, they do not accept our price changes and we have to make some drastic decisions (the client does not want us to change the price but we can't continue producing and losing money and in that case if we have to refuse the order this leaves us disappointed since we want to work and not to decline orders)" (Grandupla, International Director). With this statement, this manager clearly expressed her understanding of the interconnectedness of her surroundings.

. ***Consistent and Structured View:*** the majority of respondents saw the world in a consistent and structured way. As for the above sub-section on Groups of Actors, the length of service of the participants suggests that they have had many years to form quite entrenched views, subconsciously or consciously, about their surroundings.

. ***Evolving view:*** very frequently respondents showed that they held evolving views of the world. They often described how relationships and actors had changed throughout time. For example, one respondent said *"When the change of Royal took place and they moved abroad, for some time we still supplied them, there was still the graphical part and the cost of the pre-print. When they started to change all the graphical part, they immediately transferred to their local supplier... For example, with Nestlé purchases are managed in Spain; until two years ago they had a purchasing centre here in Portugal and now everything is decided in Spain."* (Amcor Flexibles, CEO) This evolving perspective of things might be related to the idea of continuity underlying the 'Product Network' and specifically the hole-through-the-wall production system, because this form of production is usually seen as entailing long-term relationships.

8.3 Network Pictures in the 'Product Network': Commonly Traced Features at the Company Level

Substantial commonality was also identified within some of the companies included in this network. This traced commonality appeared to be mostly related to each company's distinct features. In spite of these common traits, it is worth stressing that a considerable level of diversity was also observed regarding the features of Network Pictures within each company.

In this section, and with the aim of illustrating how some company features appear to condition the way actors perceive the world, the most interesting²⁰ within-company

²⁰ They were considered interesting since they were closely related to each company's particularities.

commonalities are presented and explored for each organisation in the 'Product Network'. Given that for some companies there was only one respondent, in these cases instead of looking for interesting commonly traced features, the aim was to look for Network Picture features that were predominant in those respondents' views and that could be seen to be related with their company's objective features. Both the interviewees' understanding of the company's culture and literature about the company were employed to achieve this.

Selenis S.A.

. Broad View

All respondents held a broad view of the world, speaking about entities they did not have business relations with and they highlighted the importance of relations with the local social and political community. Selenis S.A. is a chemical company and people usually associate this industry with pollution and negative effects on the local community. The company's business activity has a strong impact upon and is strongly affected by these local entities and it has invested a considerable amount of resources to improve its relations with the local community and thus improve its public image. As one respondent put it, "*then we have interactions with the local community and which I consider to be very important. These concern not only our close neighbours, but also the local authority (council, firemen, schools and others) and other entities that are not as close such as labour inspection, health centres and governmental entities which manage the environmental area, the industrial treatments)... I think that these interactions must be and have been incremented because there are many people around this plant... and some do not have any notion at all of what we do whilst others have the wrong notion... for the last 3 or 4 years we have been doing excellent work and the people that are around us have already begun talking with a some knowledge when they talk about our company*" (Selenis, Production Director). This idea was reinforced by what one interviewee from Ferro, another company related to the chemical industry, said when listing the entities from his surroundings: "*Then, and although it is not related to this whole, but that is very important for Ferro, there is the community. So, I would draw a little circle here... mainly in the chemical industry where the environmental part is very important... and these are related to perceptions that we want Ferro to have... since the chemical industry is considered as a noxious industry. So, we must know... we must find a way to manage that perception*" (Ferro, Production Director). In other companies where these environmental and public image issues were not so important, their perspective of their surroundings was fundamentally business oriented. That is to say, they had a less broad view than those in Selenis S.A.

. Coherence with the Board's Explicit Identity

The way these respondents viewed the world was strongly coherent with the board's explicit identity. Interestingly, the company went through a restructuring process three years before the data was collected. The restructuring process was thus quite recent at the time of the interviews and it was still very topical in the managers' mindsets. As they had only been in this present format as a company for a short time, they appeared to take the board's view without questioning its appropriateness. In other companies where there was no restructuring process, this coherence was not as obvious as in these cases: the respondents had experienced stability for a longer period and had had the chance to formulate their opinions. As a consequence they were more likely to dissent from their board's identity.

There was a lot of evidence that prior to restructuring this company was not performing particularly well. However, after being acquired and becoming Selenis S.A., it jumped 10-15 positions in its world ranking. As a consequence, unlike in many other companies where restructuring took place, the managers did not offer much opposition to the changes which occurred and appeared to embrace them. Curiously, some of the interviewed managers had been brought in from the group that took over the company and they quickly assumed the identity of the new entity, rather than that of the group which they rarely mentioned. For example, the company's CEO, one of the directors that was brought in from the Group that bought this company said *"and we then do benchmarking with our competition. This is our position, Selenis' position, and this is our competition"*. This could be because these imported managers were excited at the prospects in the new reformed company.

In Selenis S.A., one result of the restructuring was the decision to change the company's image. This was to be achieved by a repositioning in the sector, through shifting outside perceptions. To the managers in the company this had been a successful endeavour, however some actors outside of the company did not concur with this view. This comes across quite clearly in some of things that were said by respondents in a company that was supplied by Selenis: *"Selenis is a small company which usually doesn't offer the quality guarantee to its customers that its competitors do; maybe it has less capacity to introduce the changes that we need for big volumes than other suppliers"* (Logoplaste, Technology Director); *"We have been having some problems with them and the relationship is not stable... It is a typical small Portuguese company, with all the problems it implies."* (Logoplaste, Commercial Director); *"There have been many problems of lack of understanding from both parties and it has been quite difficult to solve these issues... The company wasn't able to understand that they had to evolve and that Logoplaste's clients would not accept the quality standards that they were offering. This is why the relationship got worse and worse"* (Logoplaste, International

Technical Director). This interesting finding highlights the potential danger of companies' managers becoming too insular, owing to an unquestioning loyalty to the board and as a consequence being unaware of outsiders' opinions on their performance and image.

Ferro Corporation S.A.

.Non Coherence with the Board's Explicit Identity

All respondents disagreed with one particular element of the board's explicitly identity, namely its strong production orientation. They hoped that it would undertake a more commercially oriented approach and they believed that it was crucial for the company to coordinate what the client wanted with what the company had to offer. As one of the respondent put it *"Well, at the moment, we are trying to change our market approach a great deal, because... well, but that has to do with historical things that got us to this point. At the moment we have a distributor who visits the majority of our customers, and we visit only a few in the Portuguese sphere... which isn't always the best way... We have to try to maintain out production capacity and some times that is not easy... Therefore, we are trying to create a new market development and to visit clients who weren't traditionally customers with whom we used to work with"*. They claimed that the company lacked the commercial approach and competitive spirit that was necessary, in order to deal with certain features of their product. That is to say, their view was that the product they had to offer was not of strategic importance to the client and moreover there were numerous competitor suppliers offering similar products. As a consequence, they placed great store in personal contacts and actor bonds to maintain their level of business and to seek out opportunities for further growth. Interestingly, the company recently went through a management change which involved the recruitment of a new CEO with considerable commercial experience and yet the company maintained its production orientation.

Grandupla - Fabrica de Plasticos S.A.

. Focus on the Past and on the Present and Evolving View

All respondents perceived the business world in evolving terms, thinking mostly about how things used to be in the past and how they had changed and how the current situation had been arrived at. Grandupla resulted from a merger between two competitors (Upla and Grandarte) and respondents perceived the moment when that merger took place as a turning point or the beginning of a new era. They referred to the period prior to the amalgamation as *"the old times"* (Grandupla, International Director). They frequently talked about what was happening to the company and in the sector in terms of the changes since the fusion took place in 1997. In one case, a newly arrived manager had also adopted this approach, even

though he was not a member of the company during those *old times*. This is interesting because it would appear that he had been influenced in his views by his colleagues' understanding of the surroundings. Moreover, this suggests a powerful conforming socialising process within the company.

. *The Surrounding as an Arena for Conflict*

All respondents thought about their surroundings in terms of conflict between actors. Interestingly, this took place in a company which could be said to be positioned, as some of the respondents have put it, "*somewhere in the middle between the big and the small sized competitors*" (Grandupla, Financial Director). The company did not have the necessary scale of operations to compete with the big companies, as it did not have the essential negotiating power to get good deals on raw materials, neither did it compete on a price basis like most of the small competitors were able and willing to do. They were therefore somewhat in a permanent state of tension, having to be careful on one side of the low price strategies practiced by small competitors and at the same time on the other side being aware of the big competitors that may at any time take away some of their most important clients. As one respondent put it "*We are not in a situation of 'small is beautiful', or are a big company with independent structures to invest in development and with well structured techniques in which there are always available resources. Not here! Here, since these advantages are not present, people have to work a lot, and this is a growing trend*" (Grandupla, Financial Director). There was a constant danger of losing capacity and hence falling back into being one of the smaller competitors. However, there were also opportunities and they aspired to become one of the major players.

IberoAlpla Portugal – Embalagens Plásticas Unipessoal Lda

. *Focus on the Surroundings, Stereotyping and the Surroundings as an Arena for Conflict*

The sole respondent thought intensively about a particular group of entities: the company's competitors. He had a strong sense of competition, not only in relation to the company's competitors but also to other entities. At one point he claimed that "*people in this sector know each other by their personal names or by the 'war names'. This is a very 'small world' where there are always the same people, always, always, always the same. And we all know everything. The plastics market is what I call a 'market of gypsies'*". Moreover, this came across quite clearly when he represented his surroundings and positioned IberoAlpla on one side of the provided A3 sheet of paper and all other entities on the other side. IberoAlpla was thus represented as a unit that stood alone against all the other actors. He therefore held what may be said to be a stereotypical view of the world and showed considerable difficulty in

integrating IberoAlpla within the surroundings. He did not feel that he and his company were part of the *whole* and instead saw them as external entities to the Portuguese business scenario, that is to say he felt very much like an outsider. After the respondent had represented all entities on one side of the A3 piece of paper and IberoAlpla as an isolated unit, this researcher asked him if he would be able to do a representation in the form of a connected diagram and the respondent then replied “*I find it difficult to represent the surroundings as a diagram... I can't do it because we don't have a strong link with the entities... and therefore, it is very difficult*”. This was not that surprising given that the respondent had only recently arrived in Portugal, being therefore away from his familiar working environment. As a consequence, having not been around for a reasonable period of time, he had not yet developed the key contacts that other companies apparently had and was finding it difficult to make them. Similar features were identified about the Alpla Group that bought the company. They had only recently begun producing in Portugal, through the acquisition of an already existing plant. As their market share in Portugal was not yet considerable, their members were under a lot of pressure and it could even be said they showed what could be said to be a slight obsession over the competition. This came across quite clearly throughout the interview with this respondent and member of Alpla Group; the respondent spoke extensively about the company's competitors. Curiously, at some point he said “*we usually do not speak about our competitors*”, then speaking broadly about competitors in general and also about specific ones: “*We do not have any relation with competitors. Both Amcor Pet and Logoplaste are very strong competitors, mostly in PET, while we are strong in many areas. That is the difference... But they are our competitors in different parts of the world. They are good... I don't know to whom you will be speaking to in Amcor PET... Depending on who you will be speaking to, you will surely hear different things. Logoplaste is not going to tell you anything good about us. I already know it but I am not worried about it. Alpla considers Logoplaste as a very powerful competitor; technologically and technically good. And then they have several clients. It is a big competitor for us*”. The Alpla Group wanted to increase its market share in the Portuguese market and because other companies controlled it, there was not much space for them to grow. There was a general sense of frustration and impotence, because the Group had a larger share of the market in European terms than some of its national competitors, e.g. the Logoplaste Group.

. *Focus on the Company*

Apart from thinking intensively about the competitors, this respondent showed a strong sense of belonging to the Alpla Group, who bought Ibero Plásticos and turned it into IberoAlpla Portugal – Embalagens Plásticas Unipessoal Lda. He showed a greater sense of belonging to

the Group as a whole than to the company in particular; he spoke in 'we' terms regarding the Alpla Group and not the company he was currently working for. Some examples are visible in some of the respondents statements such as when he said "...and that is where we can transfer knowledge form one country to the other, without an investment for the client" or "We, the Alpla Group, do everything: the designing, the moulds, the extrusion, injection, blowing and so on". There are two possible reasons why this was so. The first is that the respondent previously worked for the Alpla Group, being allocated to this particular company in Portugal after it was acquired and hence he saw his loyalty as being to the group as a whole. Secondly, because the Alpla Group's companies were not set up to compete amongst themselves there was a high level of trust in the group's companies relationships and hence the sense of belonging to a family of organisations. This apparent sharing would enhance the notion of a group identity.

SICPA In-Plant

. Focus on the Surroundings and Not Important Knowing What is Going on in the Surroundings

The sole respondent thought mostly about the company's only client and about the relationship with it: Amcor Flexibles. He considered it important to know a lot about Amcor Flexibles and its dealings and did not show any interest in finding out about what was going on beyond relations with that client. This was taking place in an *in-plant* [see chapter 4, Section 4.3.3] which involved a strong need for coordination between the parties as well as high levels of investment. As a consequence the parties were very close and there was total dedication by the supplier to the client.

It was interesting that respondents from Sicpa *In-Plant* and Amcor Flexibles had different views of their relationship. The former gave more importance to it than the latter; Amcor did view it to be strategically important but not as strongly as Sicpa did. This appears to be explained by the fact that there were a number of potential alternative suppliers offering the same product and others to Amcor. As one respondent from Amcor Flexibles put it, "Obviously, we have interest in maintaining Sicpa; we are not in an industry that is very compatible with drastic changes of paint suppliers. However and as with all other suppliers, Sicpa must have the ability to invest more, investing in the relations;... I am now thinking about a technology that we have and about which Sicpa hasn't showed much interest... I'm very disappointed with Sicpa and also with their supplier. We have been working with another supplier, Sunchemicals... This worked very well, in a very pro-active way and Sunchemicals saw this as a chance to start supplying us with paints... I don't know if in the future I'm going to decide to retain Sicpa as our paints supplier; eventually I may think about

an alternative way so that Sunchemicals can also be our paints supplier... we need all the help we can get for implementing this new technology and Sicpa has been static. In this business you have to make progress, and I think that Sicpa doesn't have enough motivation for this" (Amcor Flexibles, Production Director). Nevertheless, Amcor Flexibles's respondents also conferred on the relationship there existed with Sicpa *In-Plant* considerable importance: *"Individually, Sicpa is the biggest supplier that we have. We buy more than one million Euros of paint per year from Sicpa. So, the control over what is taking place between Selenis and that company is fundamental"* (Amcor Flexibles, Financial Director); *"For me SICPA is a business partner and as a partner it is here to evolve with us"* (Amcor Flexibles, Commercial Director); and also *"It has got to be a partnership relationship. That is the only way it works... We have the monthly meeting where we discussed every point and where we ask them for improvements, we define objectives... partnership, completely... So the responsible for the in-plant has to be in our operational meetings, he comes to our planning... He has to manage it like if it was one of our departments, so it is a relationship completely different and one that is not ours but it works exactly in the same way"* (Amcor Flexibles, CEO).

Interestingly, this respondent from Sicpa was only one of two of the twenty-seven people interviewed in this case-study, i.e. the 'Product Network', who viewed the clients as the most important entity in their surroundings. The other was also directly involved in *in-plant* processes at Logoplaste. This would reinforce the argument put forward in Chapter 7 that people involved in such arrangements are more likely to take a step-back and see that their company's business activity is not conceived by others as the centre of the world.

Amcor Flexibles Neocel – Embalagens Lda

. Focus on the Company:

All respondents showed a great sense of belonging to the company, perceiving the group that bought the company (Amcor Group) as an external entity. For example, one respondent said *"I will write down AM for Amcor Neocel, and then I write down an entity that influences us a lot more than the clients do: the Amcor Group... the immense influence that working in a multinational has upon us. Amcor Group is the world's biggest group for flexible packages. When it's not the 1st, it's the second with Alcan taking the lead... It is a multinational and we are not more than numbers to multinationals; sometimes the impact that certain decisions taken by these groups in our life can be complicated"* (Amcor Flexibles, Production Director). Another interviewee stated that *"I can't tell you in great detail what Amcor is doing because I do not really know. I do know that they are moving and that the commercial part is now being changed... because for years the commercial existed a bit 'outside the*

factories' and they just wanted to sell, no matter how or at what price. But this is now changing" (Amcor Flexibles, IT Director). This lack of sense of belonging to the Amcor Group appeared to be related to several aspects. First, the group implemented an internal competition policy amongst its companies, as discussed in the next section. Second, the group's headquarters were geographically quite distant from the company, in a different country. Third, the group set out in an almost unilateral way the strict rules and policies which guided its companies' business operations. Fourth and finally, all respondents were already working in the Portuguese company when it was bought by the Amcor Group and perhaps unsurprisingly they showed a sense of belonging to the company and not to the group. As mentioned above, this form of takeover also occurred when IberoAlpla Portugal – Embalagens Plásticas Unipessoal Lda was acquired by the Alpla Group. Interestingly however, whereas in the latter case the respondent demonstrated a sense of belonging to the group as a whole, in the former the interviewees' identity was seen to be largely within the company. This demonstrates that respondents from two different companies, notwithstanding the fact that they have been involved in similar business activities, e.g. being taken over, can have different mindsets as a result of their previous experiences with a company and with a group of companies.

.Relevance of Internal Processes:

Respondents appeared to be somewhat preoccupied with the group's internal structure and processes. For example, amongst other things related to the company's internal procedures, one of the respondents said *"As commercial director of this company, I try to create the conditions so that this company supplies products according to the requirements of those who need them, and many times those are the sales forces of the other countries which are part of the group; those sales force coordinate efforts with us"* (Amcor Flexibles, Commercial Director). As mentioned above, all respondents were already working at the company when it was acquired by the Amcor Group and therefore they had experienced the acquisition process and witnessed the changes that it implied for their company's own procedures. Respondents from other companies did not think as intensively about their own companies' internal procedures nor did they place such focus on their company. Not even the Logoplaste Group's respondents thought as much about their own company and processes and the Logoplaste Group was recognised as having a very particular organisational structure. This may be explained by the fact that the Logoplaste Group's internal organisation had remained substantially the same for the last thirty years, whereas Amcor Flexibles' current structure had only been put into practice 5 years before the interviews were conducted.

. Surroundings as an Arena for Conflict

Most respondents saw their surroundings in terms of power relations and conflict. Very frequently they talked about the pressure the Amcor Group put on its companies through the imposition of strict rules. As one respondent put it, *“the Amcor Group is one of the most important entities of the surroundings. There are a major group of fundamental policies for the company defined by the group, which is always present and making a difference”* (Amcor Flexibles, Financial Director). Also, the group presented a very unusual feature from an organisational marketing perspective, in that its companies or independent divisions had to compete, not only with external competitors, but also with the other companies in the group. The Amcor Group’s companies were thus direct competitors, having to deal with competition in two different forms: the external and the internal. Obviously, this internal competition hindered the development of trusting relationships between these companies and as a consequence led to less of a sense of belonging to the group. The group’s headquarters clearly transmitted the message to all its companies that if they lacked competitiveness, then their plant would be shut down, which they had a reputation for doing in other parts of Europe. Most respondents reported that this business practice of perceived threat was the main cause for the tension that existed within the group. As one respondent put it *“One of the latest big decisions Amcor Group made was to closed down a congener company in Holland, all justified;... These decisions carried out by Amcor Group are made in two or three months and they only consider numbers, results and not much more than this”* (Amcor Flexibles, Production Director). Or as one other respondent said, *“Everything is ‘very pretty’ and we are all part of the same group, but in reality each factory that belongs to the Group answers for its accounts”* (Amcor Flexibles, IT Director).

An interesting comparison arises with reference to the Logoplaste Group, where in the latter the respondents could, by and large, be clustered into two groups according to the similarity and dissimilarities of their Network Pictures features between groups. Moreover, in spite of the board’s wish to have a uniform identity for the company, there appeared to be a certain extent of freedom among its managers in how they formed their views of the world. In Amcor Flexibles, the views of the world corresponded much more closely in their similarities and differences and this could be due to the perceived threat from the group management, which led to a siege mentality; that is to say, a sense of *“us against the world”*.

. Normative View and a Sense of Should

All respondents thought in prescriptive terms and most held strong ethical beliefs about the world. The Amcor Group had established a set of very strict rules for each of its companies, amongst which was Amcor Flexibles. *“We must have a relationship with Amcor Group, It*

gives us orientation, gives us directress; it defines the overall strategies... it sets rules for management, demanding levels, with a certain type of rigorousness; this happens because we are inserted in a big group” (Amcor Flexibles, Financial Director). These rules were to be rigorously applied and followed by all its members and included regulations on how members and departments were to behave and interact with external entities. Interestingly, respondents directly and indirectly mentioned these rules throughout the interview. For example, as one interviewee put it “the influence that we have over costumers is a bit different compared with what it used to be before we were acquired by the group... I would say that the maintenance of these costumers and of the relations with them is totally our own work, the work developed by Amcor Neocel’s sales team... it is something that is in our hands and that I would say that exceeds the directress disseminated by the Amcor Group” (Amcor Flexibles, Financial Director). The same director at some point explicitly stated that some of the rules imposed by the group sometimes affected the company’s business activity in a negative way: “in terms of national market, the group takes away from us some capacity to be competitive with very strict rules, rules with very high standards and that some of our national competitors don't have; that strictness has its costs. For example, that policy of internal security you can see throughout the company is quite excellent but it costs a lot of money... In the national market, the small company that competes with us and doesn’t care about the rules will probably present lower costs” (Amcor Flexibles, Financial Director).

Also, the group had implemented several internal conventions, transmitting and disseminating information and advising upon practices to ensure that all business activities carried out by any of the group’s companies complied with certain ethical principles. Nevertheless, the managers in this company believed that these ethical practices had already been ingrained in its companies’ culture and orientations, before the acquisition process took place and thus had already become indwelt into the frameworks of its members. Quoting one of this company’s interviewees: *“There are also our own ethical demands because Amcor Group has very strong ethic demands. We agree totally with these principles and besides, Neocel always had them, even before belonging to this big group. Nevertheless, the group reinforced this idea. It eliminated any idea that might exist of carrying out suspect business; it is unthinkable both for buyers or sellers. It is unthinkable to give a gift to a buyer so that he buys from us. And we know that our competition is not like that and that this may put us in a relatively disadvantaged position” (Amcor Flexibles, Financial Director).*

. Focus on Actor Bonds

Most respondents perceived relationships in terms of actor bonds. Having been established for a considerable amount of time in the Portuguese business scenario, they had developed

strong and effective activity linkages. However, it was the actor bonds that they prioritised in their contributions during the interviews. One respondent spoke about the relation that existed with a client in the following terms: *“We have a very special relationship with Yoplait. Also because Yoplait in Portugal belongs to the Group Yoplait, which has a boss given that it is a concession, and the relation with this man is a very long term and close relationship; a permanent contact especially with our commercial department. We try to involve the Spanish assistant as much as possible in this relation since she is the one that talks to Yoplait about the orders and other details”* (Amcor Flexibles, CEO). When comparing the Portuguese with the international clients, one other interviewee stated that *“due to tradition and proximity, we have a closer relation with the national clients”* (Amcor Flexibles, Financial Director). They considered that old connections and long-term interpersonal relations between specific members from their company and others played a central role. Because they had a considerable reputation and market share, they could influence through their contacts the renewal of contracts. It was possibly for this reason that a strong part of the company’s inherent business practice was to instigate and invest in personal relations.

Refrige, Danone and Central de Cervejas

. Focus on the Company, Functional Focus, Narrow and Non-Comprehensive View of the world

All three respondents from these three companies appeared to perceive their company as the centre of everything and they all showed themselves to have a strong functional focus. For example, one respondent said *“I don’t know what these companies are doing in business terms, probably because my function is much more oriented towards the company than for the exterior. There are other people here that deal much more with the exterior, but that is not my function”* (Central de Cervejas, Production Director). It would be expected for these interviewees’ Network Pictures to present such features, because they were all developing an internally oriented function, namely that of Production Director, and this was the only role they had had during their career. They appeared to see the world in narrow terms, identifying in most cases solely a few actors and relationships that were somehow directly related to the Production Department. And some of the respondents were some focused on the technical aspects of production that they were not able to identify, for example, who their suppliers were. *“Our suppliers... I don’t know by heart who they are... I would have to go and check it. I think AliFresca is one of our suppliers but I’m not sure... right now, I can’t remember who supplies us with labels... I also can’t remember who supplies us with the lids...”* (Central de Cervejas, Production Director). What comes across from this is that these Production Directors’ common objective features, i.e. single, internally oriented and long-standing

function, had a significant impact on the Network Pictures that emerged, as they were found to be very similar.

8.4 Conclusion

This chapter has shown the important role that the features of the company and of the network, in which actors develop their business activity, appear to perform on how actors perceive the world. The commonalities that were identified among the features of Network Pictures at the company and network levels stressed the idea, partly explored in the previous chapter, that contextual features play an important role in the way that actors perceive the world.

In the following chapter a comparison is made between the features found for Network Pictures in the '*Product Network*' and in the '*Project Network*'. This is another potentially useful scenario for assessing the relevance of situational factors to gain an understanding of actors' views of their surroundings.

Chapter 9

9 Network Pictures from Two Networks

9.1 Introduction

The aim of this chapter is to analyse whether Network Pictures allows for the capture of the diversity between individuals in different network contexts. Thereby reinforcing the relevance of situational factors in the definition of actors' views of the world as illustrated in the previous chapter. This investigation is carried out by comparing the commonly observed features of Network Pictures for the 'Product Network' and for the 'Project Network'. In Section 9.2 the commonalities of the 'Project Network' are addressed. The contextual factors of the two networks are illustrated and discussed in Section 9.3 and Section 9.4 contains the conclusion.

9.2 Network Pictures in the 'Project Network': Commonly Traced Features at the Network Level

The following four sub-sections contain a discussion of the features where a higher level of concurrence was observed. In Section 9.2.5 some general comments and observation are made by drawing together some of the key features in the 'Project Network'. Moreover, preliminary observations are put forward with suggested explanations for the differences between the 'Project Network' and the 'Product Network'.

9.2.1 Focus of respondents' views

. **Focus on the Company and on their Surroundings:** in the 'Project Network' most respondents held a strong feeling of belonging to their company. However, when asked who they considered the most important actor or the one with the greatest capacity to influence theirs and others' actions, respondents commonly identified either the sole client Metro do Porto S.A., or the Normetro Consortium S.A. or even the Transmetro Consortium S.A. *"In the project Metro do Porto, it clearly occupies a central position. I think that Normetro is in the centre since it has direct relationships with metro do Porto; although the other companies also have it, at the end Metro do Porto recognises Normetro. And it is clearly in a central position within the universe of companies involved in the project: with Transmetro, BB Rail or Bombardier. Normetro is absolutely central in this process and everyone that is directly involved in the project recognises this fact"* (Normetro Consortium, Construction

Coordinator). Hence, there was a strong consensus between the project's involved parties as to who the most important or influential actors were.

Apart from thinking intensively about their own company, a significant number of respondents also talked a lot about the surrounding actors and relationships. However, most of these people reported their view of their surroundings as being about those actors and relationships that were directly related to the project [see Chapter 4, Section 4.3.3.1 for further details] and did not show much interest in knowing about any activities that were not directly associated with it. This came across very clearly when the conducted interviews were analysed. For example, one interviewee said *“no, honestly I do not know what is the business activity of those companies directly involved in the project are about when it comes to activities outside the project. As you must have realised by now, this area is very oriented towards the interior of the consortium and the contact that I have with people is much more on a daily basis, on the basis of what is happening today; it's also much more in the production area than in the strategic area: what the companies do or want. So if you ask me what the strategic orientation of each of these companies is, and whether they want to increase or establish activity here, develop more activities outside, etc, I do not know... well, there are some residual conversations at the end of the day and people do talk about several issues but in institutional terms, I don't know”* (Normetro Consortium, Construction Coordinator). Moreover, one other respondent stated *“undoubtedly, I know much more about what is going on with companies and their relationships if these are within the project's boundaries”* (Transdev, Operations Director). This reflects a relatively simplified and egocentric view and with such an attitude interviewees may have been overlooking potentially important entities. For example, Porto's City Halls were rarely mentioned by the interviewees. However, they played a crucial role in the project, as among other things they were the ones who could give authorisation for actions associated with the construction of lines that went through their territory. Given the short duration, time pressures and complexity of the project, respondents chose to focus solely on issues directly related to it. Each member of the supplying consortium had to take responsibility for managing their part of the project, including the sub-contractors accountable to them, and as a consequence had little time to concern themselves with similar activities of their counterparts. Every participant was aware that the legally contracted consortiums would be dissolved once the project was completed. As one respondent put it *“and it is predicted that as soon as the project finishes, every one leaves and Normetro disappears... we do not want to continue as Normetro, not even if there are extensions of the work concerning Metro do Porto... We will want to create a new ACE. Because these groups are created for a certain end and since the beginning they did not have more than that horizon and they were structured in a specific*

way, it is better to finish completely and to start with a new structure, with new companies. Tomorrow, Somague will not 'marry' Soares da Costa but some other company and so on" (Normetro Consortium, CEO). Therefore it did not make much sense to find out more about other business actors with whom they had no direct relations, e.g. sub-contractors of their counterparts in the project. "I know perfectly well that Somague and Soares da Costa have subcontracted teams but that, to me, is secondary. I also know that BB Rail gets a lot of support from Efacec... I know that the vehicle that Bombardier supplies to the project is the result of work of an amalgam of suppliers which are not Bombardier (e.g. the boxes are theirs but the air conditioning is Spanish)... We know all about this, as a result of the discussions we maintained throughout the process... but I don't want to know if it's a certain company which produces the doors and if it's some Spanish company which builds the air conditioning; that is not important for me; my interlocutor is Bombardier and that is it..." (Transdev, CEO). The interactions between the members of the consortium had the sole aim of delivering the project successfully.

. **Surroundings as Activity Links and Actor Bonds**: the majority of respondents perceived their surroundings predominantly as a set of activity linkages between actors. For example, they spoke frequently and in some detail about the regular coordinating meetings that took place between the consortiums and the grouped companies on each of the following levels of coordination for the project: planning, technical and construction. They also spoke about the coordination meetings that took place between Consortium Normetro and the client Metro do Porto, understanding the important role played by Consortium Normetro as the sole interlocutor between all grouped companies and Metro do Porto. As one respondent from Metro do Porto said "for us at Metro do Porto, Normetro Consortium is materialised by its CEO. When we speak with that director, we are talking to Normetro... There are only informal contacts with those companies that are grouped in Consortium Normetro; the formal contacts are all and solely with Normetro. Any formal letter from us to Transmetro, BB Rail or any other company that is part of Consortium Normetro is signed by a member of our executive and be addressed to the CEO of Transmetro and then once inside Consortium Normetro, he takes care of it. When we are talking with someone from Transmetro we are talking with someone from Normetro" (Metro do Porto, Infra-Structures and Production Director). Given these multiple entities involved in the project, coordination of activities was paramount. For example, as a result of the natural interfaces of a project of this nature, there was a number of situations where a company could not begin operations until someone else completed their part of the project. "For any work, we have the platform, the via, we have the sub-station that receives the energy and that then takes it to the catenaries, we have a station and so on. What I want to say is that the volume of frontiers that we have here is huge: here

we have a frontier that involves Transmetro (which constructs the shelter) but on a certain day, BB has to enter and on that day we do the hand-over; for that to happen, the minimum conditions agreed have to be fulfilled: the walls must have been painted (but only once), the sealing must be finished, the doors must be placed and so on. Therefore, there is a technical specification for each hand-over. And here, there is a frontier between Transmetro, BB Rail and also Bombardier because they also enter. Then, after 2 or 3 weeks, there is another frontier between BB Rail and Bombardier because in the meantime, these guys have to connect their systems to these guys' optic fibre. And then we have Transdev and finally Metro do Porto... It is obvious that if there is a delay here, it leads to a delay here, which leads to a delay here... So, in what concerns deadlines, we always have "hot discussion" points because we have been making a huge effort to fulfil deadlines. And what has been happening is that we have deadlines for completion of construction that have to be extended and that we then try to recover with all the others. Instead of having a situation of a certain period of time for civil, electro-mechanic, tests and opening (and there are several interfaces and sub-positions between these several areas which lead to problems and complications), it is usually like this: we extend construction deadlines" (Normetro Consortium, Planning and Controlling Director).

There were also a significant number of respondents who saw the world not only in terms of an intensive activity linkage between actors, but also as actor bonding. *"Happily, the relationship with everyone is very good and I honestly have to say that it would not be possible do this construction if this good relationship hadn't been reached. I can't avoid talking about Normetro Consortium's previous CEO who tried to implement that spirit and was able to; I got this heritage, and so did my interlocutors, that is to say the CEOs of each level that works with me and that are part of the Council... If it wasn't for this team spirit and mutual helping, the execution of this project wouldn't be possible. And problems have come up and many times I have had to moderate issues between the companies; because they exist and what be weird would be if they did not exist. The issues on a daily basis are huge and the frontiers are so subtle and straight that sometimes what is really necessary is good will"* (Normetro, CEO). It was all about knowing the right person in each company. These respondents believed that good relationships between certain people involved in the project were fundamental for ensuring the project's success. For example, they frequently spoke about the good personal relations that existed between Consortium Normetro's previous CEO and Metro do Porto's current CEO, i.e. the client – consortium relationship. They also often mentioned the warm communications between the two previous CEOs for the project in the civil construction companies Somague and Soares da Costa. They appeared to believe that the good sense of these sets of people facilitated the achievement of reasonable agreements, thus

creating a spirit of collaboration and getting this extremely complex project up and running. The relations between the two construction companies could have been quite difficult to manage, because outside the project these companies were direct competitors. Moreover, before Impregilo left the construction consortium Transmetro, they had to compete internally for contracts to build some of the Metro lines. At that stage and within Consortium Transmetro, they were simultaneously partners and competitors. Because a consortium is created as a form of cooperation between the involved parties, which may or may not be competitors outside the project and may or may not share the same goals, the aim of successful collaboration cannot be taken for granted. However, these three companies that were together in a consortium managed to achieve a positive working relationship. *“Outside the project they are competitors but they have commercial relations: like it happened here, they are individual competitors but they can occasionally run together for a project. For certain constructions companies are advised to run together, to complement each others’ resource needs (because sometimes a certain company has a stronger know-how in a specific area and the other possesses this in another area) and therefore, for certain situations, it can be perfectly reasonable that people and companies reach an agreement and take advantage from what the other knows how to do well. ... Companies do not have the necessary dimension to do it by themselves (for example, the lines were done by two companies since they did not have the capacity to do it alone)... Here, within the project, the relationship is completely transparent, open and good... both information flows and decisions take place based on the commercial relationship between the companies”* (Normetro Consortium, Construction Coordinator).

All respondents understood that the physical proximity that existed between the parties directly involved in the project was fundamental for the project’s success. It promoted daily contact and personal relations, resulting in a better communication flow. As one respondent put it *“I do not think that it would be possible to do things in a different way. Most of the times we have some kind of problem when the decision is not taken here at this location, e.g. for decisions that are very important, namely with the foreign partners, it is necessary to have a phone-conference or to find some other way to ask for instructions from the companies’ headquarters (e.g. Bombardier in Canada, Transdev in France), and very often this blocks some processes. Therefore, it is a good thing that the companies are here concentrated, all represented in the same location... It is also quite good that our client Metro do Porto is also relatively near to here. I am convinced that if we were not in the same physical space, it would be too difficult to carry out the project”* (Transmetro, CEO). One other interviewee also said *“I believe that the impact of having members from all companies that are part of Consortium Normetro, was very good. If each company had stayed in its*

headquarters, which would be far from this particular location in Porto, things would have been much more complicated. It was very important to have a joint structure; one that united all the companies” (BB Rail, CEO). Informal communications were also perceived as being a key resource as these enhanced personal bonds. As one respondent put it “I would thus say that the importance of informal communication for the success of the project is huge, both internally as well as with relations with Metro do Porto” (Transmetro, CEO). Nevertheless, they also treasured the value of formal communication. This came across quite clearly, for example, in the following statement: “in a project this big, it has to be formal in terms of communication. There are a lot of people involved in the project, a lot of entities... It would not be possible having informal communications... What I usually do, and I think that is our company’s policy, is before sending a formal communication I try to talk to the person to whom we are going to send the formal communication. As often as possible, I try to act this way. Thus, the formal communication is preceded by what can be considered a form of informal communication” (BB Rail, CEO).

. Focus on Actors’ Problems, Aspirations and Resources and Focus on their

Surroundings: most respondents held quite a complete view of the structural features of the surrounding actors, but they were only interested in knowing about what was directly related to the project, i.e. what actors were bringing to the project in terms of resources, the problems they faced throughout its execution and what they aspired to doing once it was over. Respondents’ interest in knowing about this last structural feature might be associated with the possibility of the desire to establish new relations with the same actors for future projects. For example, one respondent from Normetro Consortium said with regards to the Metro do Porto’s operator Transdev that “besides having the operation of Metro do Porto, Transdev has a series of operators in the bus systems throughout the country and according to the interviews that they have been giving and the people that they are employing, they are intending to improve their position in Portugal, and to be a major operator” (Normetro Consortium, CEO).

For most of the interviewees the two exceptions regarding the interest in actors’ features mentioned above and that were external to the project were: when they were talking about the two civil construction companies and about Transdev. In these two cases they often talked about these entities’ structural features which bore no relationship to the project. In the case of the construction companies, they were the only Portuguese companies directly associated with the project and thus their outside activities had substantial visibility for their counterparts in the consortia. Moreover, very frequently respondents from the grouped

companies were simultaneously employed in these building companies and therefore their roles in the two different enterprises overlapped to some extent. For example, Normetro Consortium's CEO was also the CEO for Somague, one of the construction companies that were part of the two consortiums that were created for the Project of Metro do Porto: *"I haven't left my function at Somague as CEO for Porto. In fact, that is the reason why I am here at Consortium Normetro in this function of CEO. Somague' CEOs are either in Lisbon and Porto developing their job as CEOs or they are placed at a major building site such as this one"* (Normetro Consortium, CEO). When asked to talk about the structural features of those companies directly involved in the project, one respondent from Transmetro who before joining the project was working in the Portuguese construction company Engil, claimed not to know much about those companies' activities outside the project, with the exception of Somague and Soares da Costa. Regarding these two companies, that respondent said *"Those two I know perfectly... their victories, their failures, their frustrations, their future projects, what they have done in the past and how much they are worth as firms, each one of them; they're different... they used to be my competitors and that is why I understand them and I know so much about them"* (Transmetro, Production Director). In the case of Transdev, they were the only foreign company in the consortium who concurrently had other business in Portugal. Hence, like with the construction companies, its business activity outside of the project also exhibited a fairly high profile and was of interest to the respondents.

The general disinterest in actors' structural features outside the project, discounting the above exceptions, was predictable given the circumstances of a *'Project Network'*. That is, in most cases respondents had not worked previously with the companies that were directly involved in the project, and they had not been working with those companies for a considerable period of time, unlike in the *'Product Network'* and they did not have the will to develop deep knowledge about their features. Moreover, as mentioned above most respondents did not hold high expectations of continuing the relationship with those companies once the project was over and so they did not see the point of trying to find out more about the other participants than that necessary for successful project completion.

9.2.2 Weight of respondents' views

. **Normative View:** most respondents saw the world in prescriptive terms. They accepted and used the contractual specifications that laid out how they should work and hence did pay significant attention to their previous experience on this matter. That is to say, the rules they lived by were explicit, largely ignoring the implicit. The terms of the contracts defined each

party's obligations and rights and ensured that actors' interests were safeguarded throughout the project's life and after its completion. One of the interviewees said "*when I think about the surroundings, I don't think about people or companies; instead I just think of the contract... We have relationships with the people and we may all go for lunch or dinner together, but on the working basis what we have is a contract. Therefore, in the first place the relationship is in the contract and with the protocols that exist referring to this contract... what worries me the most is the internal relationship, our attitude of fulfilment of the contract*" (Efacec, CEO). Another respondent from another company stated that "*there is a contract and that has to be followed*" (BB Rail, Operations Director), reinforcing the idea that there was a strong conviction shared by those interacting in this network that the contract was the basis for everything. Moreover, many of the interviewees frequently referred to the terms of the contracts. For example, with regards to the processes through which potential problems between the parties could be solved, how the communication flux should develop, what was each party's role in the overall project and which entities ought to take part in which specific meeting. The project was short term and very intensive and the respondents did not appear to have enough time to think about or to develop norms. Moreover, given that nearly all projects are unique the interviewees did not see the benefits in developing implicit rules, given that these would probably not be applicable in other environments.

. **Important Knowing what Goes on in the Surroundings:** the majority of respondents showed an interest in knowing what was going on in the world, but only if this was somehow directly related to the project. This is not particularly surprising given the relationships' feature of discontinuity as described above. Besides not showing interest in knowing about companies' business activities outside of the project, they hardly ever spoke about relationships between entities not directly involved. Respondents frequently spoke more broadly and comprehensively about the grouped companies, the consortia and the project's client, than about their own company's counterparts who were not directly related to either consortium.

. **Relevance of Actors' Internal Features:** predictably, most respondents showed a considerable internal focus, thinking about each company's internal structure and processes and how those involved in the project were linked through their internal organisations. As mentioned above, they placed great emphasis on the activity linkage and hence it would be quite natural for them to give such importance to interdepartmental linkage. This activity linkage and the coordination of actors' internal processes that respondents talked about were thoroughly stipulated in the terms of the contracts, and further demonstrate how much these guided their activities.

9.2.3 Specificity and Coherence of respondents' views

. ***Coherence with the Board's Explicit Identity:*** nearly every respondent fully agreed with the explicit identity of their companies' board. For example, Consortium Normetro's board clearly tried to transmit both internally and externally, that it had the ideal structure as well as the means to accomplish the aims for which it had been created: coordinating the activities of all those directly involved with the project, acting as sole mediator between the client and the grouped companies and providing the client with a tailored solution. All respondents concurred with the view that the consortium successfully managed to portray this image. For some of the interviewees there was one issue they had a problem with and that was the level of formality that the consortium's board tried to impose on proceedings. They expressed the opinion that sometimes informality was a preferable *modus operandi*.

As mentioned above, the respondents complied with the contractual agreements and furthermore the role played and the position occupied by each company was comprehensively stipulated in these jointly agreed contracts. This could explain the prevailing coherence between their views of the world and the identity of their company's boards.

. ***Specific Actors and Situations:*** most respondents talked about specific actors and situations, not making any generalisations. Hence, they did not develop or make use of archetypes of actors or processes they could have come across in previous projects. Instead of drawing on their past experiences, they preferred to work in the present, focusing and limiting their views of the world to the current project. Given a project's unique properties, actors assume quite distinct roles or attitudes for each and thus previous experience is rarely transferable *en bloc*. Moreover, given the limited time span for most projects' conception and execution, actors do not have the required time or the required experience to develop pre-conceptions about the surrounding actors or processes. Additionally, generally the number of actors directly involved in a project is greatly restricted to make it easy to manage and this obviously makes it easy for its participants to keep the names and processes of other actors in their heads. Thus they have no need to simplify things or create archetypes. For example, in this project there was a sole client (Metro do Porto), a sole provider (Normetro Consortium) and a reduced set of four grouped companies, keeping the number of direct actors directly involved in the project to a minimum. The one exception to this was in the case of Metro do Porto S.A. where respondents grouped the Metro system's final users, referring to them as the company's clients. This generalisation was not unexpected because this company's clients, namely the public, were numerous.

9.2.4 Respondents' Overall View

. ***Stereotyped View of the Surroundings:*** most respondents perceived their surrounding world in hierarchical terms or as a functional matrix. When describing the project, one respondent said *“This model functioned well, it was only the possible one: a matrix type organisation. This type of organisation is complicated to manage because people are dependent to a double hierarchy. And here it also exists a Consortium Protocol, that was made by me and where are included what I thought that were the duties of the people”* (Efacec, CEO). Regarding the latter, the rows included the functions that made the project feasible and the columns contained the companies. Those who saw it hierarchically generally illustrated it as an organigram, which included all companies directly involved in the project. A few respondents saw the world in terms that could be described as those of a network, perceiving interrelated relations and the interconnectedness of the surrounding relationships. For example, one respondent said *“there are several interfaces: one that is pronounced involved direct contact between BB Rail and the partners of the Consortium Normetro, and then simultaneously there are relationships with those same companies but that have to go through Normetro”* (BB Rail, CEO).

It is not surprising that given the tight structure of terms of the contracts, the interviewees frequently illustrated their surroundings in such a formalised fashion, i.e. organigrams and matrices. *“The way I represent this is as an organigram of the relations, starting with Metro do Porto which is the owner, followed by Consortium Normetro which is the only one who has authority to have formal relations with Metro do Porto, and then Normetro’s four partners: the construction group, BB, Bombardier and Transdev. This could be an extremely formal representation of the scope of a contract, with rules, and this is the only representation I believe it’s accurate”* (BB Rail, Operations Director). This high degree of formal positioning by the respondents was further reinforced by the fact that the contracts clearly stated the power relations and interrelation of functions between the participants. Such an arrangement, although potentially being restrictive, does permit simplicity and thus facilitates shared understanding of actors’ roles. There was a marked consensus in the ‘Project Network’ that this was the best way to perceive their surroundings, if the goals were to be achieved.

With regards to positioning, the contracts clearly determined who was responsible for what and when. Regarding the latter, the level of each company’s involvement varied over time. For example, on the first stage of the project the Italian company Impregilo that was

responsible for the tunnelling held 35% of participation in Consortium Normetro. However, at the time the interview was conducted, all the tunnelling had been carried out and thus Impregilo no longer had a relevant role in the consortium Transmetro (civil engineering), or in consortium Normetro. At that time, it had left Portugal and only held a participation level in the Consortium of 5%. . Also Semaly which was mainly responsible for the planning of the system, being therefore associated to the pre-project (conception of the project by defining where the lines would pass), had a very relevant and almost predominant role during the first stage, but after the planning stage finished, it's participation in the consortium became almost nonexistent (e.g. 1%). Furthermore, right after the construction stage began the civil construction companies had a substantially increased level of participation. Changes in levels of involvement as determined by the contract led to constant formally arranged changes of positioning. Thus, for the actors involved the issue of where they and others stood was taken out of their hands and they expressed themselves to be content with this situation. Moreover, if it did bother them, they had no leeway because of the terms of the binding contracts.

. **Structured and Consistent View of the Network**: the majority of respondents perceived the world in a structured and quite consistent way. Because they relied heavily on what was formally established by the contracts, it appeared to be relatively easy for them to see things in such terms. However, relying so strongly on what was established in the contract may have pre-determined the actors' perceptions and thus restricted their view of the world. Notwithstanding this, some respondents starting from the acceptance of these formally established frameworks, were able to modify these slightly to correspond and accommodate their own perceptions and intuition. For example, one interviewee accepting that the contractual terms established on communication and agreements should be formal said, *“it is also clear to all of us that if all of this was drawn in a formal communication, this project would not be done. This is because when people write something, after that it is not possible to go back; but while they are talking, they can always go back. The network of contacts formed in a project like this is of such a dimension that the informal communication was the base of all the success... If it was not like this, due to the client's lack of capacity to decide on the spot, the period that these partners and consortium would have to wait until there was a decision by the owner of the site, would make the project unviable. There are many, many things which are very based on the conversations between people and agreements between people that have respect for each other and that are able to make compromises”* (Transmetro, CEO).

. **Evolving View**: very commonly respondents held an evolving view of the network, describing how things had been changing throughout the duration of the project. For example, one interviewee from BB Rail described the company's relation with Transmetro in the following terms: *"It is a situation that has been changing. All projects have different phases. The relationship with Transmetro was always excellent, not always organised and coordinated as Metro do Porto would like it to be, but a good relation. As the project is approaching the end, there is not much money to left and the relations have been deteriorating a little. But, there was never a need to get to an extreme situation, one of direct and aggressive confrontation. Obviously, now that we are getting to the end the problems are exaggerated because the budget that existed in the beginning does not exist now, and each one tries to spend as little as possible"* (BB Rail, Technical Director). This evolving view reflected a justified perspective of the world, in that he was drawing on his past experiences. Because there was an 11 years time span between the initial contractual agreement and its forecasted conclusion, several adaptations were bound to be introduced during the course of the project's execution. As a result, ongoing amendments were added to the Consortium Agreement. Some of the most frequent changes were as follows: changing the initial route some of the lines were supposed to have, adding new lines that were not initially planned, eliminating lines that were initially planned but ended up being excluded from the project, proceeding to urban re-qualifications. One particular event that stood out from the interviews was the tunnelling accident that took place in the initial stage of the execution of the project in 2001. This appeared to be a sort of turning point for some of the respondents; the operations were suspended for a considerable period of time (i.e. nine months) and consequently Consortium Normetro modified a number of the arrangements, namely those regarding the project's health and safety standards.

Also, there were some changes in the set of companies that were involved in the project's planning, execution and operation and the interviewees frequently referred to this. For example, as one respondent put it *"at the beginning it was Semaly, Sociedade de Construção Soares da Costa S.A., Impregilo and Assiconstroi Sociedade de Construção S.A., ABB SAE Sadelmi, ABB Eléctrica LDA and ABB Tecnomasio SPA and ABB Sadelmi, and Transdev (operation and maintenance)... So, we had a pre agreement in 1996 and the contract was signed in 1998 after the adjudication. The companies were these but it evolved... So the companies that were involved changed successively... successively... At the moment, and after several amendments to the Consortium Agreement and to a relationship of approximately ten years, we have Semaly, Bombardier Transportation, Balfour Beatty Rail, Transmetro Consortium and Transdev"* (Consortium Normetro, Commercial Director).

Most respondents considered it very important knowing which actors were directly involved in each of the several phases of the project and knowing the role and level of participation each played during each phase of the project. For example, they frequently described how at the beginning of the project, Semaly which was the company responsible for the conception of the project and design, used to have the highest level of participation in the consortium and how their involvement had been the most reduced at the time of the interviews. By contrast, the civil construction companies were now the ones with the greatest level of participation.

As mentioned above, some of the respondents also expressed an interest in what is going to happen during the final stage of the project and after its completion. For example, they expressed an interest in what some of the companies involved, e.g. Transdev, were going to do once the project had finished. This demonstrated that their evolving view covered all three time periods: past, present and future.

Given that respondents relied heavily on the contractual terms, they showed great interest in being kept informed about the changes that were occurring throughout the duration of the project. Interestingly, the interviewees often thought about specific dates for events, again reflecting how much they relied on what was legally established by the contract. *“So we had a pre agreement which was signed in 1996... the contract was signed in 1998 after the adjudication... Then the fifth amendment to the contract was made in 2004, and it was about the duplication of the Metro Line T”*. That is, they tried to maintain an updated view of the contractual terms.

. ***Surroundings as an Arena for Collaboration and Conflict***: a small majority of the respondents perceived the world simultaneously as an arena for collaboration and for conflict. On the one hand, they believed the project would never be feasible without actors' joint efforts. They were mindful of the facts that: some of the grouped companies were direct competitors outside the project and there were time pressures on successful project completion. As one interviewee put it *“Normetro plays the role of maestro of this band so that everyone plays the same tune. But it is normal that at different moments, different people are playing different tunes. Everyone must nevertheless work with the same aim otherwise this project will never be feasible”* (Transmetro, CEO). Everyone was expected to work towards the same goals and not to destabilise progress.

This idea on how important it was having companies agreeing and collaborating appeared to be ingrained into the project's structure. Any potential conflict needed to be resolved swiftly. In order for this to happen, Consortium Normetro had coordinative functions through a

special committee, created with the aim of formally resolving such conflicts between the involved parties. It is expected that conflict is an inherent property of contracts with such a hierarchical structure, in that there is always potential jockeying for position and there need to be arenas for arbitration. In this project's case there was evidence of potential conflict, as a result of the contractually established relations of power but it failed to materialise in any significant form. As mentioned above, the respondents said that during the project's lifetime day-to-day conflicts were rare, but they did exist and were resolved through this committee. Moreover, there was a general acceptance of the legal aspects of the contract and those were not contested. As one interviewee put it, "*we have a contract covering many areas and that defines our intervention space. And the role of a director is always based on that contract, to fulfil the set objectives. And although we work with people, basically the objective of the contract is that I have to fulfil my activities (especially within a consortium) and the others have to fulfil theirs*" (BB Rail, Operations Director). The existence of these factors meant that small conflicts did not escalate into major disagreements.

. **Actors as Providers for Customised Solutions**: all respondents perceived their own companies as well as other direct actors involved in the project as providers of customised solutions. The idea of tailored solutions is closely associated to the nature of a project, whereby companies get together to provide the client with a specific requirement. This principle is clearly defined in the contractual terms.

The respondents concurred with contractually specified proposal that Consortium Normetro play the role of problem solver and provider of customised solutions for the project's sole client. They agreed that Normetro should be the coordinator, because they believed that this consortium would provide the effective collaboration necessary to provide the client with the required customised solution.

9.2.5 Preliminary observations of the differences between the two networks

In the previous chapter it was highlighted how some features of Network Pictures were commonly traced amongst most respondents from the '*Product Network*'. These features were reported and analysed and it was put forward that some contextual factors appeared to play an important role in the way respondents perceived the world. The comparison between all the Network Pictures from the '*Project Network*', as shown above, also resulted in striking commonalities amongst respondents. Moreover, it emerged that there was greater

commonality in the '*Project Network*' than in the '*Product Network*'. That is there was a stronger coherence in the way respondents from the former network perceived the world. Possible reasons for the apparent existence of greater commonalities in the '*Project Network*' are suggested here.

What comes across very strongly from the examination of the features of the '*Project Network*' is the compliance of the participants with the legal arrangements set up at the project's inception and occasionally modified to take into account changes over time. This apprehension of fulfilling the high level of demands, as determined by the contract, could well have had the effect of pulling people together and making them feeling that cooperation and minimising differences was the best way to achieve the desired results. This high level of commonality could be said to be the consequence of two factors. Firstly, the project determines the way people are expected to work and gives little opportunities for differences, thus leading to similar perceptions of the world. Secondly the sense of threat, in terms of meeting deadlines and not incurring sanctions through failure to deliver, draws people together to achieve the same goal and to be successful they have to more or less see things in a similar way and overcome any differences.

The '*Product Network*', by contrast, can be seen to have greater leeway for being able to make mistakes, because in long-term relationships like this, errors have time to be rectified.

9.3 Network Pictures from the 'Product Network' and 'Project Network'

In this section, the main conclusions that resulted from comparing Network Pictures captured in each network are put forward. To begin with, the main network contextual factors that allow for characterising and distinguishing the two considered networks in relational terms are identified, and the terms in which these factors affect the way actors appear to perceive the world are addressed. Then, the objective features of respondents and of companies [or company contextual features] which were found to correlate with the way respondents appeared to perceive their surroundings are also identified and addressed. Taking into account the findings presented in Chapters 6, 7, 8 and in this chapter, the question of how these three groups of factors may condition actors' Network Pictures is also addressed.

9.3.1 Network contextual factors: role in the definition of actors’ Network Pictures

Despite the significant diversity observed in the features of respondents’ Network Pictures from each network, there was also considerable commonality. The features commonly traced were substantially different between the two networks and in most cases they appeared to be closely associated with the characteristics of the broader context where respondents were developing their business activity: the network.

The findings presented for the ‘*Project Network*’ above and of the ‘*Product Network*’ in the previous chapter, point to the importance of particular contextual factors in the definition of what and how respondents see the world. These network contextual factors that have emerged are now presented, with a consideration of the features of each network and a discussion of the contrasts. A summary of these phenomena is presented in Table 24.

FACTORS NETWORKS →	Factor 1. Complexity	Factor 2. Continuity	Factor 3. Embeddedness	Factor 4. Formality
'Product Network'	<ul style="list-style-type: none"> . Complexity of "hole-through-wall": <ul style="list-style-type: none"> . Large number actors; . Intensive Linkage. . Respondents fascinated with 'hole-through-wall'. <p><i>How it conditions Network Pictures:</i></p> <ol style="list-style-type: none"> 1. Groups of actors (aggregation); 2. Relevance of internal procedures. 	<ul style="list-style-type: none"> . Expected continuity at two levels: <ul style="list-style-type: none"> . Relations between people; . Permanency of same people. . People relied strongly on past experiences (affects frameworks). <p><i>How it conditions Network Pictures:</i></p> <ol style="list-style-type: none"> 1. Surroundings as processes; 2. Evolving view; 3. Consistent and structured; 4. Groups of actors and situations. 	<ul style="list-style-type: none"> . Portuguese Plastic Sector (a sector with a long tradition). . Frequently mentioning characteristics of sectors, trends (M&A), people being involved for a long time, strong rotation of people between companies. <p><i>How it conditions Network Pictures:</i></p> <ol style="list-style-type: none"> 1. Network as actor bonds; 2. Normative view (implicit rules); 3. Supply chain vs a network; 4. Groups of actors (aggregation). 	<ul style="list-style-type: none"> . Not considered very important. <p><i>How it conditions Network Pictures:</i></p> <ol style="list-style-type: none"> 1. Normative view (implicit rules). 2. Supply Chain vs Network (framework institutionalised in the sector);
'Project Network'	<ul style="list-style-type: none"> . Complexity of the project: <ul style="list-style-type: none"> . Few actors but of a large dimension; . Intensive Linkage. . Respondents overwhelmed with project's dimensions and everything it involved. . Narrowed views to things directly related to project – way of dealing with complexity (too complex). <p><i>How it conditions Network Pictures:</i></p> <ol style="list-style-type: none"> 1. Structure solely within project; 2. Focus on company and surroundings (only project related); 3. Actors' resources, problems and aspiration (only project related). 	<ul style="list-style-type: none"> . Expected discontinuity between projects. . People not willing to capitalise on previous experiences acquired in other projects – particularity. . Level of analysis – immediate. <p><i>How it conditions Network Pictures:</i></p> <ol style="list-style-type: none"> 1. Specific actors and situations (not aggregating). 2. Normative View (Explicit rules) 3. Focus on Surroundings (only project related); 4. Actors' resources, problems and aspirations (only project related). 	<ul style="list-style-type: none"> . No relevant tradition. <p><i>How it conditions Network Pictures:</i></p> <ol style="list-style-type: none"> 1. Specific actors and situations; 2. Normative view (based on explicit rules) ; 3. Stereotyped view (relying completely on what is established by contract). 	<ul style="list-style-type: none"> . Frequently mentioning contract established to regulate relations (feature of 'Project Network'). . Obsessed with contract (restricts their perception of the world). <p><i>How it conditions Network Pictures:</i></p> <ol style="list-style-type: none"> 1. Normative view (explicit rules); 2. Coherence with board's explicit identity (specified by contract); 3. Stereotyped view (framework institutionalised by contract); 4. Evolving view (changes in contract); 5. Activity links and internal processes; 6. Structured and Overall Consistent View 7. Actors as providers for customised solutions (specified by contract).

Table 24 Summary table with associations that may be expected to be found, with regards to the identified network contextual factors and Network Pictures Dimensions in both the networks under consideration

. FACTOR 1 – Complexity

A considerable extent of complexity characterised both the '*Product Network*' and the '*Project Network*' and this contextual factor appears to have conditioned the way most of the respondents from these two networks perceived their world.

In the '*Product Network*', the large number of people involved in the processes, the high investment levels and the intensive linkage between actors were just some of the elements that conferred a strong complexity to the situation of a hole-through-the-wall system. Respondents from this network were frequently fascinated with this system's distinctive attributes and very frequently talked about the processes it involved. The complexity associated with the '*Product Network*' conditioned how respondents perceived their world in the following terms: 1) they aggregated actors and situations which may be understood as a technique that can be used to deal with complexity and 2) they considered actors' internal features as relevant, given that it helped them to understand the complex processes that could take place between companies.

In the '*Project Network*', respondents appeared to be overwhelmed with the Metro Project's considerable dimensions and with all the coordination of activities and efforts that were involved. Most respondents did not have any interest in knowing about situations or actors that were not directly associated to the project, not being willing to invest their resources for finding out more and thus narrowing their 'horizon' to the project's context. This may be understood as a technique actors use to deal with the project's inherent complexity: the situation was already complex enough to deal with in such a short period of time and thus there was no point in knowing what was beyond it. The complexity associated with the project and the described technique were reflected in the following features of respondents' Network Pictures: 1) they showed great interest in knowing as much as possible about what was going on around them, nevertheless restricting their interest to the project, and by so doing establishing boundaries to the implicit complexity; 2) they thoroughly described the surrounding actors' structural features, but included solely those actors directly involved in the project and their features within the project and 3) they placed great focus on their own company as well as on their surroundings, but restricted these surroundings to the boundaries of the project.

. FACTOR 2 – Continuity

Whilst there was a strong continuity associated with the '*Product Network*', the '*Project Network*' was characterised by an expected and natural discontinuity [see Chapter 4, Section

4.3.3.1]. In either case, continuity or the lack of it, appeared to be a factor that had conditioned the way respondents perceived the network.

In the '*Product Network*', continuity was observed at two levels: there was continuity in relations between companies and there was a high level of permanency of people in the business. Apparently, this conditioned the way respondents perceived the world in the sense that it led them to rely very strongly on past experiences and past events, to develop their current framework of their surroundings and they were willing to invest their resources in finding out what was going on in the world. The observed continuity conditioned the way they perceived the network in the following terms: 1) they saw the world as processes between actors, by describing the continuous relationships involved in a hole-through-the-wall system; 2) they held an evolving view of their surroundings, thinking about how relations and actors changed over time; 3) they presented an overall consistent and structured view, something usually associated with an introspection process over a period of time and 4) they aggregated actors and situations as a result of the archetypes they had developed through their experience.

On the other hand, particularness and discontinuity between projects were two underlying features of the '*Project Network*'. As a result of this discontinuity, respondents were not willing or able to capitalise on previous experiences that they had acquired through their participation in other projects. Each project was considered very particular and so was the role assumed by each company within it. Participants considered it fairly unimportant to bring previous experiences to the current project and their framework for analysis was the 'immediate' which corresponded to the project's time span. Additionally and also associated with the short (or medium) term and transitory character of the relationships, they did not see any point in trying to develop implicit rules, preferring instead to rely on the explicit ones. Moreover, they did not think it was worth investing their resources trying to get to know what was going on beyond the project. Thus, the project's discontinuity was reflected in the way respondents perceived their world in the following terms: 1) they were unable or unwilling to aggregate actors or situations, preferring to think about specific actors and situations; 2) they held a prescriptive view of the world, relying on explicit rules and 3) they restricted their 'horizon' to the project, only showing interest in those actors' structural features who were within the project and focusing on the project related issues.

. FACTOR 3 – Embeddedness

The level of embeddedness with regards to the sector in which companies developed their business activity, also appeared to have conditioned the way respondents perceived the world.

Companies included in the '*Product Network*' were developing business activity in the Portuguese plastics sector, a sector where companies had been interacting for a number of decades. This conditioned how respondents perceived the network in various ways. They clearly considered the sector's features as a relevant factor, because they frequently talked about them, highlighting the international trend towards concentration that was taking place and how people involved in this sector had been working in it for a long time. They also mentioned quite frequently the substantial rotation of people between companies and how, at the end of the day, it was mostly about the same core group of people that had been around for a long time. This substantial level of embeddedness for the sector where companies and people had been involved for a considerable period of time, had shaped the way the respondents perceived the world in a number of ways. To begin with, 1) the interviewees saw their surroundings predominately as actor bonds, highlighting the importance of old contacts and relations in the sector and relegating the coordination of activities and the investment in relationships to a secondary level of importance. In the Portuguese plastics sector personal contacts were believed to play a crucial role in the development of companies' business activities. Moreover, 2) the respondents held a normative view of their surroundings, one that was drawn mainly from the implicit norms traditionally underlying this particular sector. Furthermore, 3) respondents saw the world in terms that could be described as that of a network, but they frequently claimed that they saw a supply-chain and the latter appeared to correspond to the sector's institutionalised model to gain understanding of the world, that could often be found in the relevant literature.

On the other hand, in the situation of the '*Project Network*' [n.b. not a sector] companies were involved in a context characterised by a set of companies that got together solely to carry out a specific project. Because there was no set of typical practices or institutionalised ways of looking at actors or processes that would had been developed over time as relationships had evolved, they were left somewhat dependent on relying on what was established by contractual arrangements. That is, there was little if any embeddedness of previous experience and relationships. This conditioned how respondents perceived the world as follows: 1) they had strongly normative and stereotyped views of their world, which were determined by the established contractual arrangements and not by previous rules or frameworks that had been developed and 2) since there were no archetypes of situations / actors institutionalised in this setting, they thought mainly about specific actors / situations, thus choosing not to aggregate them.

. FACTOR 4 – Formality

The level of importance given by respondents to those rules formalised by contractual terms appeared to have strongly conditioned how they perceived their surroundings.

In the '*Product Network*', formality did not assume a central role and respondents did not think very often about the explicit rules established between parties for managing relationships. They hardly ever mentioned the contractual or legal aspects of such communications. Usually they were involved in long-term relations, involving private assets and there were only two entities directly involved in any buying or selling situation. Formal and explicit rules did exist, but respondents preferred to rely on implicit ones, ways of perceiving things and of acting that were developed over time between the parties or that were strongly associated with the way business was conducted in the sector. This substantial avoidance of formality resulted in the following features for these respondents' Network Pictures: 1) they held a normative view of the world which was drawn upon implicit rules and 2) their stereotyped view of the world was usually associated with frameworks institutionalised in the sector and not with those that had been established by legal bonds.

On the other hand, formalised rules for managing in relationships were strongly taken into account by respondents in the '*Project Network*'. These explicit rules were constantly on the respondents' minds and guided the way they perceived the world. The importance given to these rules may be understood as a technique used by them to deal with the existing complexity. This resulted from the large number of parties directly and indirectly involved, the intense activity linkage, and from the strong time restrictions placed upon the relationships. Respondents from the '*Project Network*' appeared to be very much preoccupied with the contractual aspect of the project and this substantially restricted their views of their surroundings. To begin with, 1) they held a normative view that relied mainly on explicit rules stated in the contracts. So instead of developing implicit rules, respondents preferred relying solely (or mostly) on the contracts. Moreover, 2) they saw the world in ways that were coherent with the board's explicit identity and were complicit with it. In addition, 3) they held a stereotyped view of their surroundings, describing them either as a hierarchy or as a matrix of functions. These were the frameworks that had been stipulated in the formal contract to describe those relations between the involved parties. Furthermore, 4) they held an evolving view, frequently talking about the changes that took place throughout the duration of the project that were formally written into the legal arrangements. Also, 5) they described their surroundings as activity links and highlighted companies' internal procedures and again these issues were clearly stated in the established contracts. One further common feature of their Network Pictures was that 6) they held a structured and overall consistent view of the

world, in that they exhibited marked acceptance of what had been formally agreed on this matter. Finally, 7) they saw the world simultaneously as a potential arena for conflict and collaboration, containing actors as providers for customised solutions, where the terms of these interactions were overseen by bodies that had been established in the formal contracts.

9.3.2 Individuals' objective features and company contextual factors: role in the definition of actors' Network Pictures

After analysing all collected data from both networks, the following individuals' objective features were found to be associated with the way respondents perceived the network: 1) the number of years individuals had been working in their current function and in previous ones (if that was the case), 2) if they had been involved in more than one function, 3) the predominant orientation of the functions they were or had been involved in (external or internal orientation) and 4) the number of years they had been working in the company and in the business [see Table 25].

Moreover, some company's features [such as those of market share, internal structure, cultural values and historical evolution, were also found to condition the way respondents appeared to perceive the world [see Table 26].

Although it is not possible or intended to generalise the identified correlations between these two groups of factors and the dimensions of actors' Network Pictures, because they were often observed this researcher believes that it may be expected for these correlations to take place.

<i>Individuals' Objective Features (Working Experience)</i>	<i>Possible reasons / causes that condition how actors perceive world</i>	<i>Impact on how actors perceive the world</i>
. Considerable Experience in Present Function (more than 5 years)	- Exposure during a vast and recent time to a certain framework	. Focus on own Function
. Considerable Experience in Previous Function (more than 5 years)	- The previous framework is probably still very present and active in the informant's mind set and is informing his current frame	. Focus on other People's Functions (corresponding to own function in the past)
. Experience in more than a single function	- Greater scope of view	. Broad . No functional Focus . Importance of knowing . Focus on Processes . Evolving
	- Capacity to integrate actors with different natures	. View of the world in terms that could be described as those of a network . Focus on Surroundings . Structured . Consistent
	- Considerable experience	. Normative view . Specific Actors or Groups of actors
. Predominantly Externally Oriented Function	- Greater exposure to activities taking place outside the company or between the company and others, as well as probably to more actors	. Comprehensive . Broad . Focus on surroundings . Importance of knowing what is going on
	- Possibility of integrating into frameworks what is going on in the surroundings	. Focus on Actor Bonds . View of the world in terms that could be described as those of a network . Not important knowing actors' internal procedures
	- Directly dealing with an active and dynamic environment	. Evolving view . Moral View – sense of should
. Considerable Experience in business / company (more than 5 years):	- More available information to make decisions	. Broad . Comprehensive
	- Well established frames	. Normative . Moral View . Consistent . Coherence with Board's Explicit Identity
	- A view of the surroundings that was mostly associated to those terms of a network	. View of the world in terms that could be described as those of a network . Importance of Knowing . Focus on Processes . Focus on Surroundings . Surroundings as

	Cooperation and Conflict
- Considerable range of experienced situations	. Focus on Past and Present . Evolving (static when not willing to change past frames) . No functional focus . Specific Actors
- Well thought through view	. Structured . Groups of Actors
- A considerable experience in the company and reduced experience in the business may lead to a restricted view	. Focus on Company . Narrow

Table 25 Summary table with associations that may be expected between individuals' objective features and Network Pictures Dimensions

<i>Company's Objective Features</i>	<i>Possible reasons / causes that condition how actors perceive world</i>	<i>Impact on how actors perceive the world</i>
. Market Share	- If the company is the main market share holder, individuals perceive the company as the centre of the network	. Focus on Company
	- If positioned somewhere between small sized competitors and large ones, individuals have a feeling of a constant power struggle	. Surroundings as an Arena for Conflict
	- If the company is not the leader but has potential to become, individuals are obsessed with competitors	. Focus on the Surroundings (one particular entity: competitors)
. Considerable Impact of its Activity on the Surrounding Community	- Individuals consider important those actors and processes that do not have a business nature but that may affect or be affected by the company's business activity	. Broad View
. Restructuring Process	- If it is something recent, individuals may not having had enough time to think about what they may disagree or agree with regarding the company's explicit identity	. Coherence with Board's explicit identity
	- If it is something recent, individuals may not having had enough time to incorporate into their frameworks the guidelines of the board's explicit identity	. Non Coherence with Board's Explicit Identity
	- A restructuring that has strongly affected the company's procedures may reflect individuals' obsession over the company	. Focus on the Company
. Major Event That Took place in the Past and that Significantly Affected the Company	- Individuals may consider that event as essential for understanding what is taking place in the network and with the company at the present	. Focus on Past and Present . Evolving View
. For How Long it has been in the Market	- If the company recently entered the market, individuals may not feel integrated, instead perceiving its company as an entity external to the network	. Stereotyping (all entities on one side and the company on the other side, against them) . Surroundings as an Arena for Conflict
	- If the company has been in the market for some time, individuals may perceive "old contacts" as essential for the quality of business relationships	. Focus on Actor Bonds
. Multi-client or Sole Client Production System	- If the company has a single client, individuals may consider that client the centre of everything, thereby getting all their attention	. Focus on the Surroundings (one particular entity: sole client) . Not Important Knowing what is going on in the Surroundings (besides anything related to client)
. Complex Internal Processes	- Individuals may be overwhelmed with the complexity of their company's internal procedures and consider it a key aspect of the network	. Relevance of Actors' Internal Processes

. Company or Group's Internal Policies	- If there is an internal competition policy among companies that belong to the same group, individuals may hold a feeling of a constant power struggle	. Surroundings as an Arena for Conflict
	- If the company or group imposes a strict networking policy on its members, it may be expected that individuals see the world in prescriptive terms	. Normative View
	- If the company or group imposes strict moral principles that are to be followed by its members, it may be expected that individuals see the world in ethical terms	. Moral view - Sense of Should

Table 26 Summary Table with associations that may be expected to be found between Network Pictures Dimensions and companies' objective features

9.4 Conclusions

This chapter has highlighted the relevance of particular contextual factors, in an attempt to obtain a definition of how actors perceive the world. Four particular network factors were identified: complexity, continuity, embeddedness and formality. Although there has been no attempt to generalise these findings for these or for other networks of a similar nature, it is nevertheless interesting how some features of Network Pictures were so frequently present in each particular situation. This suggests that there is something about the world in which actors develop their daily business activity that conditions what and how they perceived it. Other factors might be found to be influential if networks of a different nature were analysed.

Several correlations between specific individual and company contextual factors and the dimensions of Network Pictures were also identified. Likewise for the network contextual factors, the intention is not to generalise these correlations for every situation, but instead to highlight how individuals' and company's characteristics appears to affect the way actors perceive their surroundings.

This chapter completes the presentation and discussion of this research project's empirical findings. In the following chapter some guiding propositions for further research are put forward. The suggested propositions regard the interconnection between Network Pictures and Networking.

Chapter 10

10 Guiding Propositions for Further Research

10.1 Introduction

The research design did not allow for neither was it intended, to conduct an empirical analysis on the potential interconnection between Network Pictures and Networking. Empirically addressing the mentioned interconnection would make this PhD research project too ambitious. Nevertheless as highlighted in Chapter 2, this interconnection is quite relevant and thus should not be left completely out of the project. For this reason, in this chapter some guiding propositions for further research are put forward. These propositions are about the potential interconnection between Network Pictures and Networking and go beyond the empirical data which focused solely on Network Pictures.

Linked together below are 1) some of the findings resulting from this project on Network Pictures' structures, with 2) the existing literature on Sense-Making Theory (namely sense-making activities), Information-Processing Theory and Strategic Management and also with 3) the potential behavioural outcomes. Resulting from this a series of propositions on how the composition of Network Pictures (by structure) may condition managerial behaviour is put forward. It is proposed that future research is conducted on this issue with the collection of specific empirical data to test the suggested propositions and to develop further propositions on the topic.

Thus, this chapter does not aim at provide further understanding of the findings on Network Pictures that have been presented in the four previous chapters. Instead, it shows the feasibility of using some of the Dimensions of the developed structure of Network Pictures to address the interconnection between Network Pictures and Networking, thus opening avenues for further research.

All the suggested propositions relate a specific nature of Network Pictures (e.g. with a normative weight) with actors' willingness to implement change. What is a primary consideration here is Networking, however, according to Ford et al. (Ford et al., 2008) Networking is all about willingness or reluctance to change. Business "interaction can be interpreted as a confrontation process that occurs between companies and which changes and transforms aspects of the resources and activities of the involved companies and of the companies themselves" (p. 3). Moreover, because this thesis draws heavily on the IMP body

of literature, which associates Network Pictures with Networking, this researcher judges it as being appropriate to relate the two concepts. This issue is further addressed in Section 10.3.

This chapter is structured into three main sections. In Section 10.2, there is a literature review on organisational sense-making activities and information processing theories. Several propositions on the interconnection between Network Pictures and Networking are put forward in Section 10.3. Some conclusions are presented in Section 10.4.

10.2 Literature Review on Organisational Sense-Making Activities and Information-Processing Theories

In order to develop the set of propositions put forward in this chapter, some elements from Sense-Making Theory are used in the same way as some aspects of this theory were used to identify the theoretical cornerstones for the development of Network Pictures as a research tool (see Chapter 2). The concept of sense-making activities is introduced; these activities are linked with Information-Processing Theories and these are associated with Strategic Management. It is bodies of literature that are reviewed in this chapter to establish, in a sound manner, a bridge between actors' beliefs and their actions.

Cognition is closely connected to information processing and strategic management. People are not able to make use of all the information that is available to them and their mental maps help them not only in selecting what information they will process, but also in interpreting the information that is selected. The output of this interpretation process guides individuals' actions and reactions. This is what managerial cognition theorists have defined as sense-making activities: scanning, interpreting and acting (1991, Daft and Weick, 1984). The process of organisational adaptation to the (potentially important) available information involves these three key processes of organisational sense-making (Daft and Weick, 1984, Milliken, 1990) and sense-making implies that there is a reciprocal interface between information seeking, meaning attribution and action (Gioia and Chittipeddi, 1991, Weick, 1979b). Thus, although the three stages usually take place in the mentioned sequence, there is feedback and interaction between them.

Scanning is the first sense-making activity and it involves observing and acquiring information from the surroundings. It is followed by interpretation and action (Daft and Weick, 1984) and it is a necessary and natural selective process associated with data

collection. Because managers have access to more information than what they actually can or want to make use of, they are expected to be able to select that which is relevant to interpret strategic issues (Huber and Daft, 1987). It is about the “process of monitoring the environment and providing environmental data to managers” (Daft and Weick, 1984, p. 286). The scanning activities involve not only looking at the external environment (Daft and Weick, 1984) but also looking within the company, in order to identify important elements for that company’s performance. According to Dutton and Duncan (1987), scanning activities are the activators for interpretation of and action on strategic issues.

Interpreting is the second sense-making activity and it is about decoding events and developing theories which are coherent with previous beliefs regarding the surroundings. It reflects the development of procedures to understand the meaning of the selected information, implying fitting that information into a structure of understanding and action (Gioia, 1986). Interpreting is thus the process through which information is given sense. This sense-making activity has been seen by some authors as a process that takes place at the individual-level (Taylor and Fiske, 1978), whilst others have considered it as being at the group-level, claiming that organisations can be seen as interpretation systems and that interpretation is connected to an individual learning a new skill (Daft and Weick, 1984). Regarding strategically related issues, scanning and interpreting can then be analysed at different levels. However, it is at the top management level that decisions are made concerning which strategic issues should be addressed and labelled as “opportunities” or “threats” (Dutton and Duncan, 1987). According to Gioia and Chittipeddi (1991), the interpreting process is fundamental for developing the adaptive cognitive framework which is necessary for strategic action.

Acting is the third and last sense-making activity and it is the process through which cognitive theories are put into action. This activity is directly dependent on the two former sense making activities (Pfeffer and Salancik, 1978). The studies conducted by Whetten (1988) and Ranson et al. (1980) emphasised the relevance of the connection between managers’ understanding of their surroundings and a company’s action. Thomas et al. (1993) associated acting with any relevant change that could take place in organisational practices. It can also be interpreted as a strategic change, involving “an attempt to change current modes of cognition and action to enable the organisation to take advantage of important opportunities, or to cope with consequential environmental threats” (Gioia and Chittipeddi, 1991, p.433). An assumption of close linkage between rational thought and chosen action underlies the strategic cognition-action models (Thomas et al., 1993). Daft and Weick (1984) argued that learning consists of the knowledge about the interrelationship between those

actions carried out by the organisation and its surroundings and those actions that draw on that knowledge.

According to that presented above, given that managers spend most of their time absorbing, processing and disseminating information (McCall and Kaplan, 1985), they can be considered as information processors or “information workers” (Brachos et al., 2005). Managers’ cognitions and frameworks allow them making sense of the complex and rich information around them. The concept of knowledge structures is one of the notions that have been applied over the years to refer to managers’ cognitions as information processors. Drawing on Kim’s (1993) work, Brachos et al. (2005) argued that a knowledge structure represents a “mental template that corresponds to a person’s view of the world, including the beliefs, values, motives, and explicit and implicit understandings” (p. 221). It provides “the context in which individuals can view and interpret new material and determine how stored information is made available to a given situation” (p. 221). Managers’ knowledge structures are therefore their frames of reference or sense-making tools.

10.3 Propositions on the Relation between Network Pictures and Networking

10.3.1 Principles underlying the suggested propositions

This section begins with an explanation of the several stages involved in the development of each proposition. This is succeeded by a consideration of the fundamentals that underlie the suggested propositions.

The proposition development comprised the establishment of several relationships between concepts. The suggested propositions portray indirect relations between Network Pictures and Networking [see Figure 16].

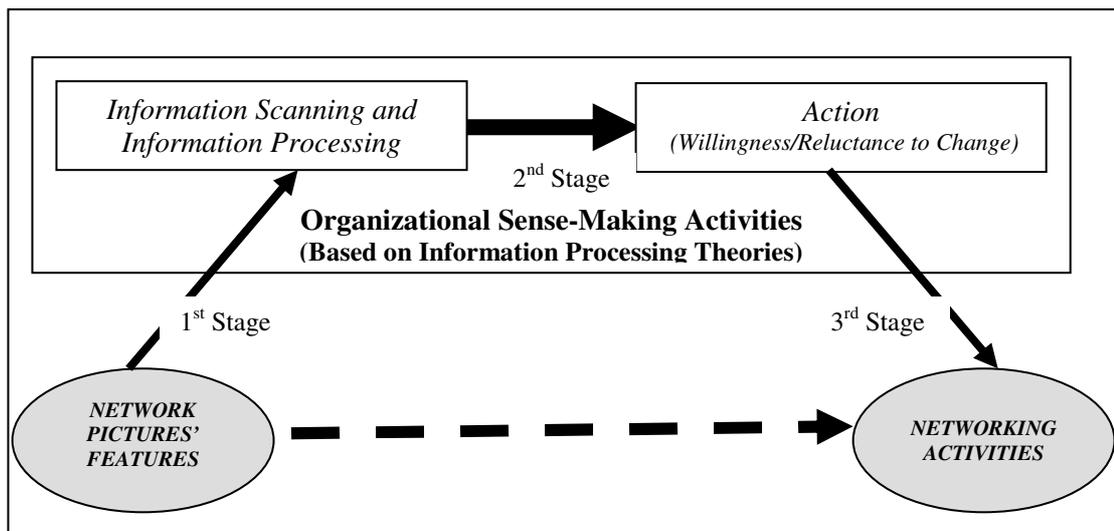


Figure 16 Framework for proposition development

Drawing on previous research on the relation between individual cognition, strategic management and decision making (Sproull, 1981, Gioia and Chittipeddi, 1991, Thompson, 1967, Thompson and Fine, 1999, Daft and Weick, 1984, Walsh et al., 1988, Smith et al., 1991), the first stage began by establishing a relation between Network Pictures' features and the sense-making activities of information scanning and processing. It was put forward that certain features of Network Pictures would be associated with certain practices of information scanning and processing.

At the second stage, the relation between the two first sense-making activities, i.e. information scanning and processing and the last sense-making activity, i.e. acting, was investigated. Acting reflects individuals' willingness or reluctance to change current practices and these can be related to actors' Networking activities. For this reason, the propositions that are put forward in this chapter are about change.

Finally at the third stage, the relation between actors' willingness or reluctance to change current practices and actors' Networking activities was explored. As described in Chapter 2 (see 2.2.5.1.), actors' Networking activities may concern decisions regarding 1) the existing relations, 2) positioning and 3) decisions on how to network. In order to illustrate how one individual's willingness or reluctance to change relates to networking activities, two examples are presented, both being associated with networking in existing relationships. For example, if an existing client asks one of its suppliers to implement a specific change that

will somehow affect the relationship he has with that supplier, the latter may either choose to do it or not. By implementing a change, the supplier shows willingness to change the current practices, choosing to conform to the client's request. With this example, it is illustrated how a specific actor's willingness to change would lead to the networking activity of conforming. The other example is that of the supplier who in the same situation described before chooses not to implement the solicited change, preferring instead to maintain the current practices. In this situation, the supplier shows reluctance to change and thus confronts the client. This example illustrates how an actor's reluctance to change would lead to the networking activity of confronting. This researcher thus considered it to be appropriate to address actors' willingness or reluctance to change, to assess how actors' views of the world might affect their networking activities.

Three basic principles, which are based on previous research and from other fields of management research, underlie the propositions that are put forward in the following section. The first principle is that by scanning more and richer information, which may include information that is not coherent with existing beliefs, individuals have more resources to build their interpretation upon. The second principle is that by having more information available, individuals tend to interpret situations in positive-gains and controllable terms. Finally, the third principle is that a positive interpretation of information is usually associated with a willingness to accept new scenarios and to accept or implement change. These are the cornerstones for the propositions that follow.

10.3.2 Suggested propositions

The first proposition put forward associates the extent of egocentricity of individuals' perception of the world with their willingness to change:

. ***Proposition 1:*** Network Pictures characterised by greater focus on the surroundings, rather than on the individual or their company, reflect a strong willingness to implement change

Previously it was observed that when thinking about the network, individuals may consider themselves or their company as the centre of the network and in either case they hold egocentric views of the world. A third possibility is for individuals to perceive their company being merely one element of the *whole* network, considering the surrounding entities and processes vital for an understanding of the world. Additionally and as a result of a strategy

defined by board members, companies where individuals develop their activity may have a predominantly internal or external focus or orientation policy. In the latter case, companies usually have internal policies and practices that motivate their members to be more externally oriented.

When looking into some issues on the relation between scanning and interpreting sense-making activities, Smith et al. (1991) argued that top managers in externally oriented companies were more likely to sense competitors' actions. These managers were also more likely to see themselves as more capable of implementing competitive responses, than those managers from internally oriented companies. Aldrich (1979) also proposed that externally oriented managers tend to collect more and richer information, interpreting strategic issues in positive-gains terms, seeing themselves as being able to create a bridge between their environment or surroundings and the organisation. Usually these types of managers also tend to interpret strategic issues as controllable, given that they are able to predict threats before they emerge and their familiarity with external issues is greater than those that do not think in this way. Thomas et al. (1993) suggested that an external scanning orientation among top managers could be positively related to their effective interpretation.

It is therefore suggested that an external orientation, reflected by individuals' predominant focus on their surroundings, would lead them to adopt a more positive attitude towards change. That is to say, these individuals would show a greater willingness to implement change which is then reflected in actors' networking activities.

. Proposition 2: Network Pictures characterised by a functional focus reflect a less strong willingness to implement change

In the previous chapters it was observed that individuals' views of the network may or not be conditioned by a specific function. Individuals may therefore either look at the network from the perspective of a specific function (theirs or others') or view it without any specific functional focus.

In the managerial cognition body of literature, several authors have analysed the potential relation between managers' "belief structures" and the function those managers play in the company. Dearborn and Simon (1958) claimed that managers' information-processing activity is directly dependent on the function they play in the company. According to the

authors, when facing the resolution of a specific problem concerning a specific department or function, managers only consider information which is congruent with the goals of that particular department. This reflects their selective perception. Managers therefore develop a viewpoint that is coherent with their function's activities and goals in the company. Hence there is a link between the function that individuals play in a company and their information-processing, in the sense that the latter affects the capacity to identify problems and their subsequent resolution.

Walsh (1988) extended this work and analysed the degree to which managers were really selective. The author identified 5 functional belief structures: human-relations, marketing, accounting-finance, leadership and manufacturing belief-structure. He empirically observed that divergently to what Dearborn and Simon's (1958) had suggested, there were not a considerable number of managers that viewed their organisational world according to narrow functional criteria. He found: marginal support for the relation between problem identification and specific functional domain, no support for the relation between the use of information and specific functional domain and limited support for a connection between scanning for additional information and specific functional domain. The author thus claimed that managers' selectivity is not as functionally constrained as the previous authors had believed it to be. He was not able to identify a simple link between individuals' functional work experience and the content of their belief-structures.

Building on these two mentioned studies (Walsh et al., 1988, Dearborn and Simon, 1958), one may expect a functional constraint to lead to a more selective and restricted scanning of new information. Moreover, with fewer resources available to build interpretations, when it comes to decision making individuals are expected to be less pro-active. This researcher proposes that individuals who perceive the network from the perspective of a specific function show a less strong willingness to implementing change, than those who do not have a specific functional focus. Furthermore, this less antipathy to change would then be reflected in their networking activities.

. *Proposition 3.* Network Pictures characterised by a normative weight reflect a less strong willingness to implement change

When developed structure of Network Pictures was developed, it was observed that one of its dimensions was the Normative Weight. Individuals may have a more or less prescriptive

view of the network, believing or not knowing what should or should not be done in the network so that companies' could be assured of success in their business activities.

If a belief is strongly held by an individual or if behaviour routines have been extensively institutionalised into the procedures of the organisation where an individual works (Morgan, 1986), it can lead the individual to repeat an action which is no longer appropriate for a particular situation (Sproull, 1981). In this case, beliefs act as an obstacle towards innovation and adaptation (Sproull, 1981). "Strategic change involves an attempt to change current modes of cognition and action to enable the organisation to take advantage of important opportunities, or to cope with consequential environmental threats" (Gioia and Chittipeddi, 1991, p.433).

A change probably implies a revision of an existent interpretative schema (Bartunek, 1984) and given some individuals' attachment to already institutionalised frames of reference, they will find it very difficult coping with change. Some are expected to show some resistance, as it is more comfortable to continue selecting and interpreting information which is coherent with the current strongly established frames of reference (Weick, 1979a). Therefore, it may be expected individuals' actions would be constrained by strongly held frames of reference.

It is put forward that Network Pictures characterised by a strong normative weight reflected in individuals' strong convictions on what should or should not be done in the network in order to achieve success, lead to less willingness to change. Moreover, it would be expected that this lesser interest in changing would then be reflected in their networking activities.

. Proposition 4: Network Pictures characterised by a dynamic emphasis reflects a strong willingness to implement change

Previously it was observed that individuals may predominantly perceive the network in a dynamic, evolving way or in more static terms. Respectively, they therefore either think about how actors and relationships have evolved over time or they think about them solely at a specific point in time. These two approaches reflect individuals' extent of awareness and importance given to the network's dynamic nature.

According to information processing theories, an increasing level of uncertainty resulting from environmental dynamism leads to a higher scanning activity (Hough and White, 2004).

A more dynamic environment is therefore associated with a higher level of information scanning. According to Boyd and Fulk (1996), scanning activity increases or decreases depending on the variability, complexity and importance associated with strategic uncertainty. These authors claimed that it increases with variability and importance and decreases with complexity. Boyd and Fulk (1996) were writing about the dynamism of the environment and for this study the interest is in the extent to which individuals' perceive and consider important the network's dynamism.

According to the literature in this field, the overall scanning activities appeared to positively vary with the perception of strategic uncertainty and environment dynamism. Higher uncertainty leads to an increase in scanning activities to search for additional information, which results in the identification of strategic issues and of possible actions to cope with unpredictability (Dutton and Jackson, 1987). It therefore leads to a stronger willingness to introduce change.

Therefore this researcher would argue that it may be expected that having a constantly evolving view of the network would be associated with more intense scanning activities. This results in there being more resources available for decision making and thus a higher expected willingness to implement change. It is therefore put forward that Network Pictures characterised by a dynamic nature result in a strong willingness to change which would be then reflected in actors' networking activities.

. ***Proposition 5:*** Network Pictures characterised by comprehensiveness reflect a strong willingness to implement change

When developing the structure of Network Pictures it was observed that individuals might see the network in more or less comprehensive terms. Consequently they could know what was going on in the network, regarding either actors or processes, in a more or less rich and detailed way.

The importance or emphasis given by managers to the amount and type of information available has an impact on their interpretation and responses (Dutton and Duncan, 1987). Hence, a greater willingness to scan information positively influences the way they interpret that information. With a greater use of information, managers have more resources available to construct their understanding of the surroundings. Moreover, the more information they

have on cause-effect relations, the more they will perceive themselves as being able to control causes (Thompson, 1967). In this case, individuals are probably more able to cope with ambiguity and uncertainty, as well as to place greater focus on the positive aspects of particular issues (Thomas and McDaniel, 1990). Furthermore, Thomas et al. (1993) suggested and empirically observed that there was a positive connection between top managers' high usage of information and their interpretation of strategic issues in positive-gain and controllable terms. These authors suggested this observation showed that when companies put into practice mechanisms to increase the use of information²¹, managers tended to interpret issues as controllable and as sources for potential gains. According to these authors, when it comes to decision making, as a result of managers' high usage of information they become more pro-active and enterprising.

It is therefore proposed that it is expected that Network Pictures characterised by comprehensive views of the network, would result in individuals' pro-activeness and therefore willingness to change. Moreover, this greater willingness to change would then be positively reflected in their decisions regarding their networking and consequent networking activities.

. ***Proposition 6:*** Network Pictures characterised by an emphasis on collaboration reflect a strong willingness to implement change

Previously it was observed that individuals may perceive their surroundings predominantly in collaboration or in conflict terms. They could therefore either think about the surrounding relationships as platforms for joint work and alliances or as sources for dependence and power. On the other hand there is the possibility that people would put equal weight on both aspects of collaboration or conflict.

Thomas et al. (1993) suggested the potential existence of a positive relation between top managers' labelling of strategic issues and carrying out strategic change. The authors associate this change with modifications in the product and service. This reflects a linkage between interpretation and action, two sense-making activities. Labelling of strategic issues corresponds to classifying them as threats (i.e. negative situations associated with probable losses) or opportunities (i.e. positive situations associated with potential gains) and as

²¹ The mentioned mechanisms include the increase of interaction among top management team members (Gioia et al., 1991) as well as the reduction of internal communication barriers (Roberts et al., 1974) and the increase of "boundary spanners" (Daft et al., 1984).

controllable or not controllable. These authors found that there was a linkage between labelling of strategic matters and consequent actions only when the former was controllable and in such cases there would be a positive effect on product or service change. They also suggested that the type of information collected during the scanning activities does not affect the way managers interpret strategic issues. That is to say, it had no effect on impact on managers perceiving strategic issues as potential gains or losses.

Dutton and Jackson (1987) suggested that once a situation is categorised by an actor, new information congruent with the category is more likely to be recalled and attended to, whereas old information incongruent with the category is less likely to be remembered. Additionally, they argued that managers in such situations tend to use fewer sources of information (Smart and Vertinsky, 1977) and therefore, tend to use limited appraisals of situations and simplified action-response patterns. The same authors claimed that this can also cause rigidity in decision processing, which will in turn limit organisational response.

According to Staw et al. (1981), once an issue is perceived as being a threat, the number of alternatives for action considered by the decision makers decreases, as they will tend to focus on information that is consistent with conservative interpretative frames. These are more easily assimilated than those that correspond to new information. On the other hand, Jackson and Dutton (1988) argued that strategic issues labelled as opportunities are coupled with prospects of gain, making them attractive and conferring the manager a feeling of external control (Walsh et al., 1988). This leads top managers to taking strategic action and being more pro-active, as they have a high level of confidence concerning the possibility of achieving their aims.

This researcher would propose therefore that it would be expected that individuals with views of the network have an overall positive nature reflected in their seeing their surroundings in terms of collaboration and be would be more willing to introduce change. Moreover, this greater willingness would then be positively reflected in actors' networking activities.

10.4 Conclusions

This chapter has presented a number of propositions that address the relation between Network Pictures and Networking. Researchers such as Welch and Wilkinson (2002) have been highlighting the need to address this relation, claiming that besides being necessary to

identify what are the dimensions of individuals' mental maps, there is also a need to analyse "and how they affect firm behaviour" (p. 44).

The six suggested propositions are based on the principle that Network Pictures characteristics have an impact on individuals' predisposition to select and interpret information, therefore affecting the array of possibilities they may have to consider to deal with a specific issue. Moreover, individuals' scanning and interpreting sense-making activities consequently makes them more or less willing to change existing practices, thus shaping their actions. This is then reflected in their networking choices or intended actions, reactions and interactions. This researcher believes that the suggested propositions are relevant for understanding potential relations between individuals' perceptions and their behaviour and therefore constitute relevant ground for future research projects.

In the following chapter, the main findings of this thesis are considered and some overall conclusions on the utility and usability of Network Pictures as a research tool are presented. Furthermore, there is a discussion on this research's theoretical and practical contributions and some proposed suggestions for future research related to this topic.

Chapter 11

11 Conclusions

11.1 Introduction

This chapter presents a summary of the conducted research and the main conclusions on what was set out to be achieved and on the results of the data analysis. In addition some implications and limitations of the conducted research are considered and some suggestions for future investigation proposed.

Section 11.2 some interesting findings that resulted from using the developed research tool of Network Pictures to analyse the collected data are explored. Section 11.3 contains the main conclusions from this research project and in Section 11.4 its contributions, implications and limitations are put forward. Some suggestions on the direction for future research are presented in Section 11.5.

11.2 Interesting Findings

Some of the most interesting findings that emerged from this research project were related to the considerable differences and similarities observed between well established ‘academic theories’ and the identified ‘practitioner theories’, that is to say in simplified terms the differences between theory and practice. Further findings considered to be of substantial relevance were related to practices that were commonly traced amongst many of the respondents.

11.2.1 Differences and Similarities between ‘Academic Theories’ and ‘Practitioner Theories’

Several interesting findings came up throughout the data analysis. There were several differences (and also some similarities) between what the IMP Group body of literature has suggested regarding organisational networks and how individuals from the two networks actually appeared to think about it. The former corresponds to (formal) ‘academic theories’ whilst the latter are about individuals’ actual theories, also known as (informal) ‘practitioner theories’.

The use of the research tool of Network Pictures allowed for the identification of what respondents’ theories were about or what were the ‘practitioner theories’, something that

could not be done before in an analytical and structured way. Mattsson (2005b) highlighted how important it would be for IMP researchers to consider what ‘practitioner theories’ are about when addressing ‘market theories’ (namely Network Theories)’ performative effect and when developing such theories. Thus, this author argued that IMP researchers ought to consider what the theories that actually guide practitioners’ ‘market practices’ while ‘managing in markets’ are, as they affect the ‘(real) market’. The same author also believed that researchers ought to consider how practitioners describe the ‘real market’, given that there is a distinct possibility of that description being diverse from that of academics.

The following paragraphs highlight some of the most interesting differences and similarities between ‘practitioner theories’ and ‘academic theories’ that came up with from the data analysis (Mattsson, 2005b).

Egocentricity – Perceiving own company as the objective centre of the network

One of the IMP Group Theory’s underlying principles is that no company owns a network of its own, thus *not being possible to define a centre or ‘hub’ for the network* (Ford et al., 2002b). The network cannot have an objective centre, because the concept of positioning is a perceptual one and as such the network is seen differently by different actors. A network may therefore have many perceived ‘hubs’; as many as the number of actors that perceive themselves as being the centre of everything (Ford et al., 2003). Moreover, according to Ford et al. (2002b) “any view of a network centred on a single company, or defined by the company itself is inevitably restricted and biased and gives an incomplete view of the world surrounding that company” (p. 3). Furthermore, “a company that only sees the network from its own perspective will fail to understand its dynamics and the interface between the well-being of others and itself” (Hakansson and Ford, 2002, p. 138). Because actors are expected to act upon their conviction on being the objective centre of the network, their decisions do not consider that other actors may think differently and also perceive themselves as being the objective centre (Ford et al., 2002b). Thus, according to the literature companies are not advised to have self-centred perspectives of the network.

For both networks included in this research it was empirically observed that, as would be expected, most respondents did see themselves and/or their company as the centre of the network, that is, they held an egocentric view of the industrial system. According to Ford et al (2002b), any actor’s belief of being the centre of the network could easily be challenged by simply asking any other actor from the focal actor’s perceived network to define what his position is: there would be a high probability that the other actor would not view himself as a mere element from that other actor’s network, but instead as having his own network to

which the other actors belonged (including the one that also considered himself/herself/itself being at the ‘hub’ of the network). Clients and suppliers of a certain actor would therefore be expected to hold diverse views of the network to that held by the focal actor (Ford et al., 2003). This was empirically observed for this project: frequently respondents from both networks, working at different companies and in the same network, positioned their own company at the centre; other companies were positioned somewhere around the ‘hub’ of the network, as they saw it their company. Therefore each network had several perceived centres, almost the same number of centres as the number of companies included in each network. It is not the intention to generalise this observation for every single network but simply to highlight that actors do seem to have the notion that they and their company possess their own network. There were also some respondents who believed themselves as being the ‘objective’ centre of everything, reflecting an even greater egocentric perspective of the world. However other respondents understood their company as being integrated into a *whole*, a network which was not controllable by the company. These respondents were thus the ones whose ‘practitioner theories’ were in this respect more similar to the IMP Approach.

The substance of relationships

One of the underlying ideas of the AAR Model (Hakansson and Johanson, 1992) is that Actor Bonds, Activity Links and Resource Ties are *a useful set of descriptors of relationships when taken together*. According to Hakansson and Snehota (1995a), these three dimensions “add up to a relationship” (p. 28), defining its profile and thus, “if we are to assess, predict or explain the importance and role of a relationship, they need to be examined” (p. 29). Relationships are believed to be “not single dimensional and the business marketer needs to analyse them multi-dimensionally” (Ford et al., 2002a, p. 44). Moreover, whilst some relationships consist mostly of actor bonds, others will be mostly about activity links and / or resource ties. Nonetheless, all relationships integrate to a greater or lesser extent into the three mentioned dimensions, and there is a strong interdependence between them (Hakansson and Snehota, 1995a, Ford et al., 2003).

Interestingly, it was empirically observed that respondents from both networks commonly thought about relationships solely in terms of one or two of the three AAR Model dimensions. In most cases, they described their surroundings either as a Global Actor Network or as a Global Activity Network, hardly ever being able or willing to see a Global Resource Network or the whole pattern that combined the three networks. This practice was considered to be a more or less deliberate technique, so as to simplify the reality of relationships.

The surroundings as a set of relevant atomistic actors

The Network Model was put forward for an understanding actors' roles in the stability and development of the surrounding industry (Hakansson and Johanson, 1992). According to the model, actors should not be seen as atomistic elements, given that they are embedded in *a network of interconnected relationships* (Hakansson and Johanson, 1992, Axelsson and Easton, 1992), connected to other actors by direct or indirect relationships (Anderson et al., 1994, Axelsson, 1992). Thus, the outcome of any actor's actions is always affected and affects other actors' networking activities, reflecting the existing interdependence between actors' activities (Ford et al., 2002b). Companies develop relationships with other organisations in order to have access to other relationships and associated resources (Pfeffer and Salancik, 1978). It is actors' portfolios of relationships, actor bonds, activity links and resource ties, which define their position in the overall network (Mattsson, 1985).

Curiously, in both networks it was empirically observed that not every respondent saw their surroundings in terms of processes between actors, instead perceiving the world as a collection of significant actors with interesting internal resources. Thus, some respondents did not think in the interconnection terms defined by the Network Model, but in a much more simplified manner. This possibility was put forward by other IMP members (Hakansson and Ford, 2002), who suggested that those actors who see the network mainly in terms of atomistic actors hold a restricted view of the network. They do not have a strong perception of the positions that actors occupy in those surroundings or consequent opportunities and threats of that positioning. According to these same authors, actors that see processes instead of atomistic actors can be said seeing the their surroundings in what could be described as a network and those who place focus on both actors and processes present a more comprehensive view (Hakansson and Ford, 2002).

Ignoring continuity and disregarding past events

Relationships are made up by a series of episodes, involving exchange and adaptation processes between the engaged parties along the *several stages of development of a relationship* (Johanson and Mattsson, 1987, Ford, 1980, Hakansson, 1982). Each interaction that takes place within a relationship is thus merely one episode of the global relationship (Ford, 1980, Ravald and Gronroos, 1990). Relationships' continuity is frequently considered a fundamental pre-condition for relationship exchange and development (Hakansson and Snehota, 1995a) and it reflects their dynamic nature²². The network where relationships take

²² Nevertheless, as pointed out in Chapter 2, there are some situations characterized by discontinuity which still present the features of a relational exchange (e.g. interimistic relations, Lambe et al., 2000).

place is also dynamic and the IMP body of literature has emphasised how important it is for that dynamism to be appreciated in network related studies, given that it reflects the interconnected character of relationships, which in its turn affects companies' strategizing (Hakansson and Johanson, 1992).

Interestingly, in both network it was empirically observed that not all respondents thought about the network in dynamic terms. Instead, some saw it as something considerably static, a 'snapshot'. They frequently portrayed relationships by talking about one particular episode or about a specific situation observed at a given point in time. These respondents did not appear willing or able to perceive interactions between actors as part of a relationship development process, seeing those instead as isolated events. These respondents appeared to believe those 'snapshots' corresponded to a permanent status of any given relationship and ignored their dynamic nature.

Simplified version of inter-disciplinary

Interactions and networks have a *complex and inter-disciplinary nature*: a relation between two parties simultaneously involves economic, technological, social, political or other issues of a different nature (Easton, 1995b). Researchers are expected to predefine what dimensions or issues they are more interested in addressing when conducting a study on an industrial system, in order to avoid possible conflicts between different theories or disciplines. Despite this definition, which reflects a choice carried out by researchers when conducting a study, networks always maintain their inter-disciplinary nature and complexity (Easton, 1995b).

Despite networks' natural interdisciplinary nature, in both networks it was observed that some respondents thought about the world merely from the perspective of a particular departmental function. Thus, commonly respondents disregarded other perspectives or rich ways of looking at inter-organisational relations. That is to say, it would appear that the practice of seeing networks from a specific angle is not restricted to researchers; practitioners also seem to do it in a more or less conscious way. Some apparently chose to do so to be able to focus on what they were really interested in. In some situations it was a way of avoiding having to deal potentially contrary versions of the same fact (e.g. production department's perspective and goals were frequently diverse from those of the purchasing department).

Holding 'network theories'

'Network theories' are an "actor's set of systematic beliefs about market structure, processes and performance and the effects of its own and others' strategic actions..." (Mattsson, 2003p.

417). They reflect actors' beliefs on what actors should do or avoid doing in the network to assure successful business practices, reflecting their perception of the network in terms of causal relations between specific actions and the corresponding consequences. As mentioned in Chapter 2, the concept of positioning strategy is closely related to the concept of 'network theories' (Mattsson, 2002b): an actor who aims at changing its positioning, may either try to actually change it or simply try to influence the surrounding actors' perception of their positioning, by changing their network theories (Johanson and Mattsson, 1992).

The data analysis showed that most respondents did perceive the network in prescriptive terms. These were either based on implicit rules (norms that were developed throughout relationships) or explicit ones (rules formally established by contract) and in either case these appear to condition strongly how respondents 'saw' the network. Despite the considerable number of respondents who appeared to think in normative terms, there were also several interviewees who did not seem to hold strong 'theories' about the network. The latter respondents appear to rely on mere impressions of what might be done and also on colleagues' expertise, for further clarification. That is to say, not all of the respondents held 'network theories'.

Going back to basics – the relevance of companies' internal processes

Both the Interaction (Hakansson, 1982) and the Industrial Network Approach (Hakansson and Johanson, 1992) have highlighted the *relevance of processes between actors for understanding organisational markets and industrial systems' development and stability*. In either approach (on a dyadic or network level), companies' ability to enhance their performance is dependent, not only on themselves, but also on their relationships with others and on how their direct counterparts manage relationships with other parties (Hakansson and Snehota, 1989). Thus, companies' performance is understood to be a direct function of their relationships.

Curiously, in both networks the data analysis indicated that some respondents were more concerned about the processes that took place within each company (including their own company) than those that took place between companies. Some also thought about companies' internal procedures to explain activity linkage between them and other organisations.

Conflict with own company's explicit identity

Organisational identity, a basic notion in the IMP literature, has been associated with the concept of strategic positioning (Hakansson and Snehota, 1995a, Hakansson and Johanson,

1992). An organisation's identity is about how the surrounding companies perceive that specific *organisation's attractiveness as a potential partner* (Mattsson, 1985). This attractiveness is a direct function of the company's relations with other actors and it is common practice among organisations to promote a particular identity to become appealing to others. This research project considered organisational identity as the one clearly expressed at the board's level, which is usually more explicit and visible than the overall company's identity. This simplification made it possible to carry out the analysis.

It was interesting how in both networks a significant number of the respondents appeared to disagree with some of the elements of their board's explicit identity. These people were very often not willing to disseminate the whole identity their companies wanted to see transmitted to the outside, making it more difficult for the organisations to put into practice their developed strategies.

Looking at specificities and ignoring the more general picture

The Interaction Approach was about the isolated analysis of relations and its unit of analysis was thus the dyadic relation established between buyer and seller (Hakansson, 1982). This perspective was dropped from the Industrial Network Approach, with researchers realising that companies were *embedded in a network of interconnected relationships and the network should hence be analysed as a whole* (Hakansson and Snehota, 1989, Hakansson and Johanson, 1992, Axelsson and Easton, 1992). Moreover, although according to this approach the understanding of organisational systems requires looking both at specific direct and indirect relations as well as at the companies that are involved in those relations, the *whole* can not be neglected (Hakansson and Johanson, 1992). The Interaction Approach remains important in the sense that it is about the specific, about the dyads and how actors interact. The IMP body of literature therefore has promoted research being conducted at the network level of analysis, which in most cases includes a large number of actors or groups of actors.

It was interesting how in both networks some respondents hardly ever thought about the *whole*, but chose to talk mainly about specific situations or specific actors. Instead of looking at and thinking about the network, they preferred or were only able to look at dyadic relations. That is to say, a considerable number of the interviewees appeared to think about the network mostly in terms of the Interaction Approach and not that of the Industrial Network.

Stereotyped frameworks

To portray industrial systems' reality, IMP Group researchers suggested that *relationships should be analysed as part of other relationships in an overall network system* (Hakansson, 1982). The network metaphor has been used ever since to represent and better understand the dynamics of business exchange. Previous research suggested that although managers may not always articulate their views of their surroundings as a network structure, most do think in network terms (Mattsson, 1987)²³; networks are part of their 'theories-in-use' (Zaltman et al., 1982). This is one of the key assumptions underlying the Industrial Network Approach and as such is seen as inherent in the Network Model. Also, perceiving the world in terms of a network is a requirement for strategizing from an industrial network perspective (Gadde et al., 2003). These authors claimed that strategizing "implies that the heterogeneity of resources and interdependencies between activities across company boundaries, as well as the organised collaboration among the companies involved, must be considered simultaneously" (p. 357).

Curiously, in both networks not every respondent saw their surroundings in network terms. Instead, some apparently saw it as: a supply chain, a value chain, a competition business model, a distribution channel, a technological chain or other framework. However, some of the respondents who claimed to see the surroundings in these terms actually spoke most of the time in network terms. Thus, these people held what could be said being a network view of the world but were not aware of it.

Because some of the respondents did not see their surroundings in terms that could be described as those of an organisational network, this does not invalidate the research tool of Network Pictures that was used by this researcher to understand how respondents made sense. The tool was developed drawing on the IMP theory, and although it can bring out perceptions that are not associated with what the IMP body of literature would predict, it is still a construct that is closely associated to that particular body of literature.

Holding a more or less broad and comprehensive views of the world

Some authors have claimed that when strategizing, *companies ought to have a broad view of the surrounding network*, and think about their direct relationships and connections as well as about other actors and respective relationships (Gadde et al., 2003). This principle draws on the idea that actors needs to "identify, read, and interpret moves or changes in the network, in

²³ This observation was inferred by the authors after analysing several interviews carried over the years by researchers from the inter-organizational area of interest (Mattsson, 1985).

order to direct the conduct of a company” (Holmen and Pedersen, 2003, p. 412) and to be able to understand different perspectives of the network. Companies ought to have a “broader horizon when it comes to monitoring the behaviour of other actors” (Hakansson and Snehota, 1989, p. 282). This reflects the idea that a broad and comprehensive perspective of things is a necessary condition for strategizing. Expanding the boundaries or horizon and deepening the extent of analysis are expected to increase actors’ awareness of the network. However, no matter how broad or comprehensive actors’ views of the network are, it is not possible to assure that they will have the ‘right’ insights into the network or achieve the desired Network Outcomes (Ford et al., 2003).

Sometimes it is not easy for actors who have the intention of having a broad and comprehensive view of the world to accomplish their aims. Anderson et al. (1994) argued that often actors have a restricted view of the world “due not only to the network extending further from the actor but also to the basic invisibility of network relationships and connections”. According to Holmen et al. (2002, 2003), companies are myopic mostly because they have a limited amount of resources available (including the managers’ cognitive capacity) which have to be well managed, forcing the company to select the relevant relationships that have to be dealt in more detail, with more intensity. Another reason why they are myopic is because the amount of knowledge available in a network increases with specialisation, and this means that companies have to limit their relationships to companies which are like-minded and with whom they establish a coordinative relationship²⁴.

Moreover, some authors have pointed out that companies are *not always advised to hold a broad and comprehensive view*, because different levels of broadness and comprehensiveness may be more appropriate for distinct situations (Wilkinson and Young, 2002). Given that only a restricted set of opportunities and constraints can be identified and acted upon and since an actor may incur risks when trying to consider every effect its actions may have on others (Wilkinson and Young, 2002)²⁵, companies are sometimes advised to have a relatively narrow or myopic view of the network. Some actors do choose to have a narrow view and are

²⁴ The authors stressed the importance of the role of the company’s counterparts as (effective and efficient) intermediaries who block the information which is not relevant and conduct the selected and relevant set of information to the company. The focal company is dependent on its direct counterparts to obtain knowledge about the latter’s direct counterparts. This fact underlines the counterparts’ importance and justifies a possible myopic view of the company: if its counterparts are effective and efficient means of getting access to information, being able and willing to specialize in relating to the company, it may restrict its view to those counterparts. This may reflect a company’s myopic and simultaneous broad-minded view of the network.

²⁵ Wilkinson et al. (2002) claimed that in that situation, the network would become too richly interconnected and the company could incur in additional costs to maintain its high extent of awareness.

successful, whilst others need to have a broad perspective to guarantee their viability (Wilkinson and Young, 2002). Managers and practitioners commonly think merely about those companies they are aware of and the ones they consider as relevant for their activity (Ford et al., 2002b, Holmen and Pedersen, 2001, Anderson et al., 1994). This reflects companies' common practice of placing too much importance in their own business, neglecting the existence of other actors and processes. A non-comprehensive view can-not be understood as something negative. In some situations, it is the result of an individual strategy to rely on other actors' knowledge (more specialised entities) or 'pictures' of the world to know more about their surroundings. This way, actors may focus their attention on specific matters, knowing that there are others that can at any time provide detailed information on other fields. The extent of broadness or narrowness of any actor's views of the network can therefore never be perfect.

The data from both networks captured this variety amongst the respondents' views: some held a broad view of the network, whereas others clearly held a narrowed view. The same variety was observed for comprehensiveness and whilst some respondents considered it important to know what was going on in their surroundings, even if it was something not directly related to their specific activity within the company or with their company's business activity, other did not.

Thinking solely in 'win' / 'lose' terms

When the most relevant body of strategic management literature was reviewed in Chapter 2, three main streams of thought were identified: traditional strategic management (Ansoff, 1965, Porter, 1980), competence-based strategic management (Prahalad and Hamel, 1990, Hamel and Prahalad, 1994) and the Network Approach to strategic management (Hakansson and Snehota, 1989, Johanson and Mattsson, 1992). The lattermost was considered to be the one which best relates nowadays to practitioners and researchers' views on business reality (Tikkanen and Halinen, 2003). Whilst in the first two approaches companies could enhance their business performance solely by competing, according to the Network Approach *competition and cooperation are simultaneously important and companies are always involved in both practices*. With the Network Approach to strategic management, the importance that was given to competition decreased and gave credence to the notions of interdependence and co-evolution (Ford et al., 2003). Relations between companies are thus understood as involving simultaneously "elements of cooperation, conflict, integration and separation in the companies' relationships" (Ford et al., 2002b, p.2).

Curiously, the empirical analysis from both networks showed that not many respondents attributed the same extent of importance to competition and collaboration between actors. The interviewees commonly saw their surroundings, predominantly or even solely, as an arena for competition or as an arena for collaborative development. Therefore, it would appear that for some the power based principles that have been associated with traditional strategic management theories and with competence-based strategic management, are still quite present and very valid.

11.2.2 Commonly Identified Practices

Taking the analysis to a higher level of aggregation, what can be said about the nature of Network Pictures and variations between people? After analysing all the Network Pictures from both case-studies, it was posited that when looking at the surrounding network there are some practices people more or less consciously frequently adopt. They often appear to: adopt stereotypes of different orders, simplify reality, possess a self-centred view of the world and appear unconsciously to make efforts to have some framework to help them to understand the world and to guide their actions.

Stereotyping

Stereotyping emerged as playing an important part in individuals' frames of reference, playing the role of a "safety net". The conducted analysis allowed for the identification of stereotyping of a diverse nature, e.g. adopting an egocentric view by positioning own company at the centre of everything, seeing the surroundings as a supply chain or a hierarchy and considering the clients as the company's reason for being. People appear to naturally undertake these stereotyped and institutionalised views of the 'world', not making any effort to understand what is going on in the network. When adopting these stereotypes, individuals are taking on ways of looking at things that have already been used and tested before by other people, ways that are widely accepted amongst practitioners and that apparently work. What individuals may fail to realise is that a stereotype that works and can be applied to some situations, may not work for others. By stereotyping, individuals may be attempting to go for the safe option, when in fact it may not be the most appropriated alternative. Although there is not one correct or 'complete' representation of one's surroundings, stereotyping may mislead individuals' understanding of the world.

Simplifying Reality

One thing that frequently observed was respondents' predisposition to simplify reality. The network is by definition and nature multi-dimensional, but in numerous situations the interviewees appeared to think about it without considering part of its complexity. For example, most individuals saw their surroundings solely in terms of actor bonds, not mentioning any activity links or resource ties between actors and described their surroundings solely as a scenario for collaboration, not mentioning any manifestation of conflict between parties. By simplifying reality, it is to be expected that individuals have a greater feeling of control over their surroundings and this control may make them more daring when carrying on their activities. Hence, this researcher believes that the simplification of reality does not have to be understood as something to avoid, given that it does not reflect in a 'complete' way what is going on in the network. Instead, it can be understood as a way of looking at reality which confers on individuals' greater practicality. This observed 'myopia' may result from individuals' conscious choice, or it may simply be the result of the incapacity to see the complexity of the world where companies are embedded. In the latter case, some aspects of the network may appear to be so obvious and so ingrained into an individual's daily life and frames of reference that they may not be able to realise they are there. Using an analogy with a picture or a painting, it would seem that individuals are not able to see the "frame" of the picture when it is the former that determines the size of the latter. Anyway, actors' mental representations are never perfect and can be considered as a mere simplified description of a complex reality²⁶.

Self-centric view of own company

Most individuals did not appear to be able or interested in 'stepping-back' and looking at the network, taking into account their own as well as other actors' perspective. They were so embedded into their own reality and perceptions that they were not able to consider that other actors may see things (including their company) in terms that were different from theirs. By so doing, they may be missing out on opportunities or incurring of unnecessary risks. For example, although networks do not have an objective centre, whilst carrying out the data analysis it was possible to observe that individuals usually perceived themselves as being the centre of everything. By not considering that other actors probably think differently, they perceived an objective centre that actually may not have existed or may have taken a different shape for the surrounding actors. Moreover, many respondents were not interested in knowing what was going on in the network. Given that individuals are believed to undertake

²⁶ For further reading, see Porac et al (1989). The authors refer to how consciously or not, actors possibly exclude the complexity out of the episodes in a relationship.

their own view as being objective and not perceptual, one may expect them to behave with the conviction that only their perspective of the network matters.

Unconsciously Making Efforts to Develop a Framework

Most respondents appeared to have a consistent and structured view of their surroundings. This leads to the belief that individuals are usually concerned about this and put some effort in developing an informal framework of their surroundings; something that can help them to understand what is going on in the network. This framework can be more or less complete and more or less 'realistic'. The same logic underlies the theoretical construct of Network Pictures that has been developed and that aims at capturing what individuals see in their surroundings. The main difference between individuals' informal framework of their surroundings (that they consciously or unconsciously try having) and the theoretical construct of Network Pictures, is the level of formality and consciousness associated to each of them. Whereas the latter is a tool that has resulted from a formal exercise and can be consciously used by researchers (and practitioners) to have a perception as complete and structured as possible of the way actors see the network, the former is totally informal and most probably unconsciously developed. What is suggested from the outcomes of this research project is that it would be useful for individuals to make an effort, in a conscious and structured way, to understand their own as well others' views of the world. The theoretical construct of Network Pictures could be used as the tool for accomplishing that aim.

11.3 Main Conclusions

11.3.1 Underlying features of actors' views of the world

In Chapter 2 the theoretical cornerstones underlying the concept of actors' views of the world were explored and associated with some of the some principles from Sense-Making Theory. Actors' views of the world were identified as the frameworks that resulted from individuals' sense-making processes in organisational networks. This led to the putting forward of some features that were believed to be inherent in actors' pictures, namely that they are: retrospective and prospective, enacted, idiosyncratic, inter-subjectively generated and serve a specific purpose. Now that the data has been analysed the suggested features can be discussed. It is not the intention to generalise these features, but instead to talk about the conclusions that resulted from analysing Network Pictures from the two specific networks.

Although their features were put forward for the abstract concept of actors' views of the world, given that the theoretical construct that has been developed and used to analyse the data aimed at grasping those abstract views, this discussion is carried out drawing on the findings that resulted from analysing individuals' Network Pictures.

Actors' views of the world are retrospective and prospective

The analysis of the constructed Network Pictures showed that respondents' views of the world were conditioned, among other factors, by their objective features. Thus, individuals' previous experiences and relationships, and their access to information and network positioning did appear to condition the way they perceive the network. Moreover, it was observed that very frequently respondents placed a considerable focus on past events, thinking about what happened in the past in order to understand what was taking place in the present and to predict what they believed would take place in the future. These observations corroborated with what other authors had already suggested (Mattsson, 1985, Mattsson, 1987, Ford et al., 2002b, Shotter, 1993, Weick, 1979b). Actor's pictures of the world can thus be said being retrospective and prospective, an idea that was suggested in Chapter 2.

Actors' views of the world are enacted

In the previous paragraph it was highlighted that individuals' views of the world result from their previous experiences and relationships. Moreover, when comparing Network Pictures from different individuals, a considerable degree of diversity was observed. If actors' pictures were objectively given, there would be a high possibility of their being considerable or even total commonality being found. However, that was not the case. In addition, some of the respondents clearly stated that some of the things they knew and thought about regarding the network were transmitted by other actors, thus corresponding to subjective perceptions and not objective facts. It seems quite apparent that individuals' views of the world are not objectively created, but instead are inferred from cues that are extracted from the information available in actors' 'surroundings (Henneberg et al., 2004a). Thus is proposed that actors' views of their surroundings are enacted.

Actors' views of the world are idiosyncratic

It was observed that it was almost (if not totally) impossible to find two respondents who perceived the world in the same terms. For this reason it is put forward such as other actors have previously suggested (Ford et al., 2002b, Henneberg et al., 2004a, Hedaa and Tornross, 1997, Mattsson, 2002a, Gadde et al., 2003), that actors' views of the world are in fact subjective and held by individuals and not by companies. It emerged that even within the

same company, it was not possible to identify one unique Network Picture that was shared by all of its members. This was associated with the fact that each respondent held different experiences and relationships (Mattsson, 1985, Mattsson, 1987, Ford et al., 2002b, Shotter, 1993, Weick, 1979b), as well as diverse goals, interests and philosophies (Henneberg et al., 2004a), and these conditioned the way they perceived the world. This idiosyncrasy of actors' views of their surroundings came across quite clearly from the beginning, even before the data analysis had been carried out.

Actors' views of the world are inter-subjectively generated

When Network Pictures from a specific context were compared, whether it was a particular company or a particular network, it was observed that although there were some substantial differences there were also some strong commonalities. There appeared to be a strong association between situational factors and actors' Network Pictures. The characteristics of the context thus seemed to condition the way actors perceived the world. The explanation for this phenomenon is that actors construct their views of the world in an inter-subjective way. It is by socially interacting with other members from the same context that individuals get acquainted with those context's features and are influenced by those features which leads to the emergence of shared meanings and commonalities, in the way actors from the same network perceive the world (Walsh and Ungson, 1991, Hakansson and Snehota, 1995b, Henneberg et al., 2006). This corroborates with the idea that was previously suggested, according to which actors' views of the world are inter-subjectively generated.

Actors' views of the world serve a specific purpose

It was found that Network Pictures had different levels of broadness and comprehensiveness, revealing respondents' willingness and capacity to see more or less actors and relationships and to see them in more or less rich and detailed ways. This reflects actors' (more or less conscious) efforts to 'frame' (1997) or 'bracket' their world (Weick, 1995). Thus, individuals do appear to 'choose' a set of situations and actors they are to act upon (Hakansson and Snehota, 1989, Anderson et al., 1994, Hakansson and Johanson, 1993, Henders, 1992, Salmi et al., 2001, Holmen and Pedersen, 2003, Holmen and Pedersen, 2001) and their choice depends upon what they want to do and achieve in the network. It emerged that very often respondents' views of the network were conditioned by the function they played in the company, which corroborates with the idea that we have put forward in the previous sentence, in that they bracket their world. Very frequently respondents had been involved in different functions and depending on the amount of time they had spent in their previous and current functions, their views of the world could be more strongly conditioned

by one or the other. This reflects how individuals' views of the world appear to be extended or diminished according to their needs and aims. It can thus be concluded that actors' views of their surroundings do serve a specific purpose.

11.3.2 Commonality and diversity at the company and network levels

One of the aims underlying the data analysis was to see if the research tool of Network Pictures allowed for the capturing of diversity between individuals in the same and in different contexts. In Chapter 3, namely Section 3.4., it was explained that although this project focused on the output of sense-making or resulting frameworks and not on the processes through which those frameworks were generated, the latter could be useful in the sense that it could help in understanding potential differences or similarities between individuals' Network Pictures.

Some speculations were made regarding the extent of within-company commonality or diversity within the same company and within the same network. These speculations were based on previous research from the managerial and organisational cognitive field, as well on the scant IMP literature on the topic and on the five features that this researcher believed actors' pictures to hold, as discussed above. Some detailed conclusions regarding those speculations that have been suggested are now put forward.

Network Pictures in the same company

Regarding Network Pictures on a company level, it has been claimed that a multiplicity of views coexisting within the same company might be expected (Hakansson and Snehota, 1995a, Mattsson, 1985, Langfield-Smith, 1992, Morgan, 1986, Sproull, 1981, Ford and Thomas, 1995). When the data was analysed, it was observed that there were several differences between individuals regarding the dimensions along which Network Pictures were believed to be defined.

Moreover, it was claimed that one might expect to come across significant within-company similarities, as a result of the belief that actors' views of the world resulted from an inter-subjective process (Ford et al., 2003, Henneberg et al., 2006, Welch and Wilkinson, 2002). Drawing on the existing literature, this researcher along with other academics suggested that this commonality or the existence of a predominant picture (Ford, 2005) could result from one of the three following phenomena: the power and dependence relations between

individuals or functions (Walsh et al., 1988, Walsh and Fahey, 1986, Cook and Emerson, 1978); a relatively consensual 'view' of the network outcome of mechanisms internally implemented to coordinate potential differences (Langfield-Smith, 1992); or finally it could be associated with the company's culture and values shared by organisational members (Schein, 1985, Morgan, 1986, Weick, 1995, Weick, 1979a, Smircich, 1983, Simon, 1953, Sproull, 1981). From the data analysis it emerged that although there were substantial differences between Network Pictures in the same company, in every company there was also a considerable extent of commonality. It was found that this commonality could result, not only from one of these three factors, but also it could be the result of, for example, the company's positioning, historical progress in the sector, institutionalised internal structure and processes or practices. In addition, it was observed that in some companies there was a greater extent of commonality than in others.

Network Pictures within companies and from companies belonging to the same organisational network

Regarding Network Pictures on a network level, it was claimed that a considerable extent of diversity in the same network might be expected (Ford and Thomas, 1995). When comparing Network Pictures from the same network, a multiplicity of views emerged in this research. The dimensions along which it is believed that Network Pictures can be defined presented diverse features throughout the same network. Moreover, this was observed not only when individuals' Network Pictures were compared, but also in each company's predominant Network Pictures.

It was also suggested that given that this researcher believes that individuals' pictures are developed while socially interacting with individuals from other companies, they would be expected to integrate cultural values from those other organisations. Furthermore, because they interact in the same network, there would appear to be a need for shared beliefs to a certain extent; what Welch et al. have defined as *schema coupling* (2002). Thus, it was claimed that despite the diversity, a considerable level commonality of commonality would be found (Hakansson and Snehota, 1995a). When the data was analysed and all of the Network Pictures from each network were compared, a substantial degree of commonality was found. This commonality was in most cases associated with the features of the network where they were developed and this result was reinforced when the commonalities from two very distinct networks were compared: it was observed that different similarities were associated with each network. This reflected how the specific features of these two networks appeared to condition the way respondents perceived the world. Four relevant situational

factors were identified: continuity, complexity, embeddedness and formalisation. It emerged, as was expected, that one of the networks did present a greater extent of commonality than the other. That is to say, in the '*Project Network*' there was greater overall commonality than in the '*Product Network*', as a result of the contextual factors associated with each network as described in Chapter 9.

11.3.3 Network Pictures as a Usable and Useful Research Tool to Carry out Research on Organisational Networks

This piece of research has identified what researchers need to look at to make sense of how actors perceive the network. The idea of actors' views of the world was structured, something that had not been done before in such depth. Now there is some idea of the dimensions that appear to be relevant to grasp what is going on in actors' minds. After operationalising and using the concept of Network Pictures, this researcher posited that it appears to be a robust research tool. Working within this concept has produced a richness of data and appears to provide an insight into the different views of the world held by network actors. The analysis framework evolved through a number of iterations and appears to have captured enough dimensions of actor views to encompass, in a fairly rich and complete way, the views of the respondents. Network Pictures have thus been shown as having descriptive power and it is therefore a usable research tool.

Moreover, the results of using the research tool have demonstrated the diversity of how respondents perceive the world. This diversity has proved interesting and this research has revealed a greater awareness of how Network Pictures are likely to vary. Furthermore, there are not some Network Pictures which are better than others; they are simply different. As a concept that allows for the characterisation of people and one that can identify the differences between them, the idea of Network Pictures works.

The findings that resulted from using the concept and analysing the data may be seen to be rather obvious and expected. It has shown that people are complex and their views are often idiosyncratic. Nevertheless, using the theoretical construct of Network Pictures has facilitated a structured and analytical way for looking into the potential reasons for why people see the world as they do. A cause for concern would be the identification of phenomena that somehow would not fit the context where it was observed. For example, if in the '*Product Network*' it was found that the development of relationships was largely seen as unimportant, this would appear anomalous given the previous literature. On the other hand, if in the

'Project Network' the participants did not respect the contractual terms, this also would have been contra-intuitive.

Thus a method for grasping how actors think about the surrounding network has been devised. The way actors perceive the world is supposed to be the basis for their thinking and their actions and with this tool the possibility exists for structuring and describing it. Although Network Pictures do not have ontological status, as a tool it offers researchers a valuable opportunity to advance understanding in this management / business arena.

11.3.4 A Revised Model of Network Pictures

When developing the Model of Network Pictures, three elements were loosely used to collect empirical data: scale and structure, processes and positioning. By content analysing the data, twenty-one Network Pictures Dimensions were derived, which were clustered into four groups. These dimensions were found to be a more appropriate and in-depth way of picturing individuals' views of the world than the three elements, as previously suggested in the literature. At this stage, an Ongoing Model of Network Pictures which integrated the elements and dimensions of Network Pictures was put forward, as well as the associations between them that were expected to be found.

The empirical findings presented in Chapter 6, 7, 8 and 9 of this thesis provided evidence of an association between some of the derived dimensions, as well as identifying some of the factors which condition how respondents perceived the network. Respondents' Network Pictures were found to be conditioned by individuals' personal features, as well as by some contextual factors: the features of the company and of the network where respondents were developing their activity [see Chapter 9]. The diversity traced between respondents was closely associated with these three factors. Considering these findings, a Revised Model of Network Pictures is proposed [see Figure 17].

The associations between the features of Network Pictures and the identified objective features were not positively linearly observed for every individual, but as demonstrated in Chapter 9, overall there was a certain positive correlation between the mentioned factors and the way respondents perceived the network.

It is usually relatively easy to obtain access to information regarding individuals' objective features, not only because this information is not confidential but also because it is factual.

Thus, to understand how individuals perceive the network researchers may begin by looking at individuals' working experience, e.g. number of years that have been working in the company, in the business and in the current function. It is also relatively easy to get access to some of companies' features such as, their market share, complexity of their internal structures and the nature of the production system. Finally, networks' relational and general features also relatively easy to get access to and may also be used by researchers to obtain an idea of how actors' perceive that network. It was found that factors such as: the continuity and the complexity of underlying relations, the role played by formalisation and the level of embeddedness with regards to the sector in which companies developed their business activity, were some of the network's features that may condition actors' views of the world.

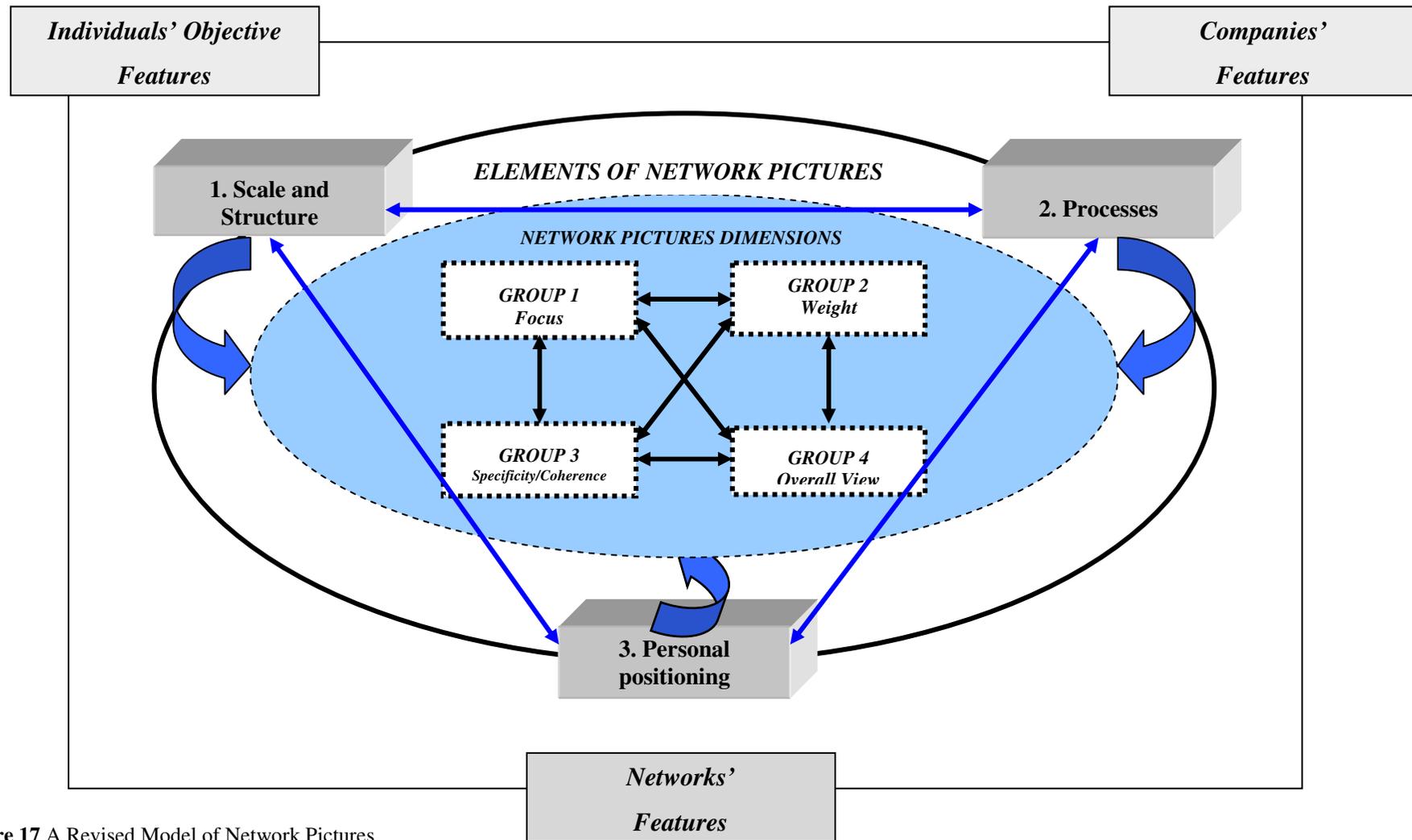


Figure 17 A Revised Model of Network Pictures

All these objective features can be used by researchers at the initial stage of analysis to get a sense of what individuals' Network Pictures are going to turn out to be. For example, as showed in Chapter 6, for the individual whose Network Picture was analysed, on initial reading of his work history it became apparent that he had a wide range of experience in the sector and therefore it was expected that he would have a comprehensive view of the network. This proved to be a very reasonable initial assumption.

11.4 Contributions and Limitations

In this section, some of the contributions to the theorists and the practitioners, namely the managers, that have resulted from conducting this research project are discussed and so too some of this study's limitations.

11.4.1 Key contributions

The project reflects a theoretical contribution for this field of research in the sense that the construct of Network Pictures has been developed in a way that can be tested by other researchers. Furthermore, it is now possible to identify what researchers ought to look for so as to get an understanding of actors' views of the world, that is to say 'practitioner theories'. Welsh et al. (2002) stated that research was required "to identify and measure the key dimensions of the mental maps used by firms to understand their relations and networks" (p. 44) and this research has addressed this gap in the knowledge. Moreover, because the Network Pictures tool has been operationalised in this research, the significant success in the interpretation of the data and the grasping of different individuals' views of the world has demonstrated its potential. Some of the results that emerged were very interesting in the sense that sometimes they were counter-intuitive: unexpected or not coherent with the existing literature. It has been shown how the tool allows researchers to become acquainted with what 'practitioner theories' are about, thus providing them with the means to carry out a more explicit performative approach (Mattsson, 2005b). Furthermore, because there is a theoretical assumption that actors' views of the network are bound to influence actors' networking activities, the results of the project have provided researchers with a device which allows for predicting and thus better understanding network dynamics. Therefore this project has contributed to the development of theory in this field, by introducing a tool that may change researchers' investigation practices.

The theoretical contribution that this project represents is nevertheless not confined to the IMP stream of thought nor to the Business-to-Business Marketing area; it also adds knowledge to the Cognitive Science field of research, especially on an inter-organisational level of analysis. In addition, it also constitutes a relevant contribution to the Organisational Behaviour field, given that research was also conducted at the inter-organisational level. Finally, this research project also makes a significant contribution to the area of Strategic Management. Actors' cognition is believed to be closely interconnected with their behaviour, and from a strategic perspective researchers may now address, amongst other issues, what are the consequences of actors having similar/dissimilar ways of perceiving things and what measures or mechanisms can actors activate to achieve one situation or another.

On the other hand it is argued that at the managerial level it is important for managers and other practitioners to be able and willing to understand what their own picture as well as how other people's views of the network are about. Managers networking decisions are conditioned by theirs' and others' perception of world and thus by understanding what they and other managers in other companies consider important, what is it that they see, they can implement the necessary measures or strategies to more easily achieve their aims. In practical terms regarding their decision-making processes, now that the research tool of Network Pictures has been developed, managers may, for example, try to understand whether there is an optimal way for them to perceive their surroundings, so as to achieve the desired outcomes. Moreover, they may be able to assess how much overlapping or diversity in the way practitioners perceive the world may result in benefits for their specific business and thus try to introduce mechanisms that allow them to mobilise other actors to become willing to perceive the world in those terms. In addition, they may be able to identify conditions under which one specific way of perceiving the world is better than other (e.g. when is it better to have a broader or narrower perspective of the surroundings).

This researcher believes that in general the research tool of Network Pictures will be more often used by researchers than by practitioners. The tool was primarily developed to provide researchers with a usable and useful research tool that would allow for them to understand in a structured and analytical way how actors perceive the world.

11.4.2 Limitations of the conducted research

Several limitations of the conducted research project can be identified. To begin with, the decision was made to look in-depth into two situations or networks. Such particularity did not allow for the generalisation of the findings and thus the transfer of the results to other

situations or companies. Also, it could well be the case that if there was another network being investigated, some new dimensions could emerge and some of the proposed dimensions could turn out to be insignificant. However, this does not detract from the fact that a tool has been devised where previously one did not exist. That is to say, a method has been offered to this field of knowledge, which can be taken up and modified / improved upon by future researchers.

One other limitation also associated with the exploratory nature of the project is that there was no attempt to develop intensity scales to analyse the collected data. If this were done, for instance by asking respondents to fill in Likert-scales, it would allow for a more precise use of the tool and more precise characterisation of individuals in terms of their Network Pictures. However, given that the primary aim was to explore some possibilities and open new avenues for future research into sense-making, which is a highly subjective field, it was considered that such an approach would move into the arena of a quantitative research and this would defeat the objectives of this thesis. That is to say, it has been accepted right from the very start that individuals are complex and idiosyncratic in their behaviour and statistical analysis may well not provide the appropriate insights into people's perceptions. If such an explanatory analysis was undertaken, there would be a great danger to oversimplify the features of their views of the world.

Finally, the third main limitation of the conducted research is concerned with not having looked deeply into the relation between Network Pictures and Networking. Although it is a given fact that this was not the aim of the investigation, it is also a fact that one of the main reasons why Network Pictures is considered as an essential research tool is because it is believed that such a relation with actors' action does exist. In Chapter 10 some propositions on this topic were made, so as to partially address this limitation.

11.5 Suggestions for Further Research

Having acknowledged the limitations of the research in the previous section, this section puts forward some suggestions for future research. Moreover, these suggestions take into account the obstacles encountered when carrying out the research as identified in Chapter 4 and the opportunities that have emerged throughout the data analysis, e.g. the need to address contradictions in respondents' Network Pictures.

To begin with, it is suggested that the propositions that have been put forward on the relation between Network Pictures and Networking to be tested and for further propositions to be made. In order to carry out this research, data on networking should be collected applying observation or simulation techniques (e.g. use of scenarios). The former technique is believed to be the most appropriated, because it would allow the researcher to observe companies' actions and identify their networking practices; eliminating some of the problems associated with the eliciting of data of this nature. It would also be interesting to look at this relation but in the opposite direction and address if and how actors' Networking activities condition their Network Pictures.

Another interesting future research project would be to use the research tool of Network Pictures in some studies that have already been conducted on specific network related phenomena. This would allow for an understanding of the potential of the developed tool as a complementary research device to other already existing research techniques.

For this research project data was collected from several directors located in several companies from two networks. Network Pictures were then used to analyse the collected data and to identify variations within the same company; between members that were operating in different departmental functions. It would be interesting for future research to address the issue of diversity within the same department in a company. Moreover, in this project differences between companies were identified, however it did not compare in any detail Networking Pictures of respondents who were in different companies, but had homologous departmental functions. This is one other possibility for future investigation: compare Network Pictures held by individuals in the same departmental function, but in different companies to see if there are or not any common features. These two investigations would allow for an analysis of the importance played by the nature of individuals' departmental functions in defining how they perceive the world.

Two networks with very particular features in relational terms were investigated. From an analysis of the Network Pictures from these two networks, four contextual factors which appeared to condition individuals' views of the network were identified. If the Network Pictures from networks with other relational features and particularities were constructed, it may be possible to identify other interesting contextual factors which also restrict their pictures. Moreover, by looking at more networks it could be feasible to develop a more generalisable structure for Network Pictures and to achieve more generalisable findings.

One final piece of research that is suggested, is to revisit the companies in the '*Product Network*' and '*Project Network*' and seeing if the same respondents' Network Pictures have changed over time.

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Appendix 1

Individuals Selected from the Companies Included in the ‘*Product Network*’ and ‘*Project Network*’

. Individuals selected from the companies included in the ‘*Product Network*’

In the following table, the people that were interviewed from each company included in the ‘*Product Network*’ are listed. There is a description of their names, company they worked for, function played in the company and the length of the conducted interviews. In each company, between one and seven people were interviewed [see Table 27].

<i>‘Hole-Through-Wall’:</i>	Company’s Name	Function in the Company	Interview Length
<i>PROVIDERS FOR ‘HOLE-THROUGH-THE WALL’</i>	Logoplaste Group	1. Commercial Director (PT)	114 min
		2. Commercial Director and KAM (IT)	38.5 min
		3. Operations Director	24 min
		4. RM Purchasing Director	97 min
		5. LPTD Director (R&D)	66.5 min
		6. International Technical Director	107 min
		7. Technology Director	91 min
	IberoAlpla Portugal	1. CEO (and all other)	43.5 min
	Grandupla - Fábrica De Plásticos	1. Financial Director	41.5 min
		2. International Director	29.5 min
3. Production Director		32 min	
Sicpa In-Plant	1. <i>In-Plant</i> Director	40 min	
<i>SUPPLIERS OF PROVIDERS FOR ‘HOLE-THROUGH-THE WALL’</i>	Selenis S.A.	1. CEO	70 min
		2. Logistics Director	62.5 min
		3. Production Director	57.5 min
	Ferro Corporation Portugal S.A.	1. CEO	46 min
		2. Commercial Director	60 min
		3. Production Director	38 min
<i>CLIENTS OF ‘HOLE-THROUGH-THE WALL’</i>	Danone	1. Production Director	15.5 min
	Refrige	1. Production Director	30.5 min
	Central Cervejas	1. Production Director	15.5 min
	Amcor Flexibles Neocel	1. CEO	113.5 min
		2. Commercial Director	87.5 min
		3. Financial Director	104 min
		4. Production Director	92.5 min
		5. IT Director	28 min
Alcan	1. Commercial Director	64 min	
TOTAL			26,8 Hrs

Table 27 List of respondents from the ‘*Product Network*’

In total, twenty-seven people were interviewed for this network and some were interviewed more than once. There was an average time of 1 hour interview length *per* respondent.

. Individuals selected from the companies included in the ‘Project Network’

Depending on the availability of the potential respondents, combined with the importance the company they belonged to was considered as having in the network, between two and five people were interviewed in each company. In the following table, there is a list of the selected individuals and the same nature of information is presented as above for the other network [see Table 28].

PROJECT:	Company’s Name	Function in the Company	Interview Length
PROVIDERS	Consortium Normetro, A.C.E.	1. CEO	46 min
		2. Construction Coordinator	53.5 min
		3. Planning and Controlling Director	34 min
		4. Commercial/Contractual Director	91.5 min
		5. Technical Director	47 min
	Consortium Transmetro, A.C.E.	1. CEO	91 min
		2. Planning Director	40.5 min
		3. Commercial Director	48.5 min
		4. Production Director	73 min
	Transdev	1. CEO	37.5 min
		2. Project Director	67 min
		3. Operations Director	47.5 min
	Soares da Costa	1. CEO	28.5 min
		2. Production Director	45 min
	Efacec	1. CEO	41 min
2. General Coordinator		47 min	
BB Rail	1. CEO	36.5 min	
	2. Operations Director	39.5 min	
	3. Technical Director	37.5 min	
CLIENT	Metro do Porto S.A.	1. Operations Director	33 min
		2. Communication & Image Director	28 min
		3. Infra-Structures & Production Director	25 min
TOTAL			17,3 Hrs

Table 28 List of respondents from the ‘Project Network’

Twenty-two people were interviewed for this network, with a total of 17,3 hours of conversation. On average, each interview lasted 48 minutes. All respondents were interviewed only once.

Appendix 2

Template for the Interview Guide

. Introductory Questions

1. For how long have you been working in this company and in this industry? And for how long have you been in this function? What is your previous working experience?
2. How would you describe and classify the overall surroundings in which your company develops its business activity?
3. Would you say that there have been any major modifications in this industry during the past 5 years?

. Scale and Structure of the network (Element 1 of Network Pictures)

1. Can you please name who is significant or has some effect on your activity?
2. Who else? What other entities can affect you who don't not have direct contact with your company?
3. Tell me about the entities that you identified: What are they doing? What do think that they are trying to do? What problems do they seem to have? What makes them interesting?

. Processes of the network (Element 2 of Network Pictures)

Actor Bonds

1. Tell me about the relation that exists between the identified entities. For how long have they had relations? Do you think that there will be any changes in a near future?
2. Can you tell me about the relation you have with the entities that you directly deal with?
3. How did you get to the current situation (Really? And what happened next? Who was responsible for that? Is there something important you want to tell me about?)
4. What seems to be happening nowadays? Is there something in particular you want to talk about?
5. What do you talk about with these people? How frequently do you talk?

6. Are you trying to do something with these people? Are you trying to change something in the relations that you have with them?

7. Who is it that usually takes the initiative: is it you or the other entities? Who seems to have the know-how or the knowledge? Who lead the relationship? Whenever there is any change (e.g. new technologies), which party begins the modification process?

8. Does your company give the same treatment to every entity? Why? And what about the treatment that your company gets from the others, is it all the same? Why?

9. Can you compare these different relations? What are the main differences between them? Do you think that any of these relations makes a difference?

. Resource Ties

1. Was there any particular investment in these relations? If so, what is the nature of that investment?

. Activity Links

1. What is it that these entities apparently do together?

2. Tell me about the other entities that your company deals with. How are the relations between those entities and all the others? Are any of those relations important? Do you think that your company's activity somehow affects the activity of third parties?

. Self-Positioning in the network (Element 3 of Network Pictures)

1. If you were asked to place your company within the group of identified entities, where would you place yourself?

2. From your perspective, what is the most important entity? And why is that?

3. Would you say that there is any entity with a capacity to influence the others? Why?

. Within-Company Commonality

1. What do the other directors of this company think about these issues that we have just talked about? Do you think that their idea of the surroundings is similar to yours?

Appendix 3

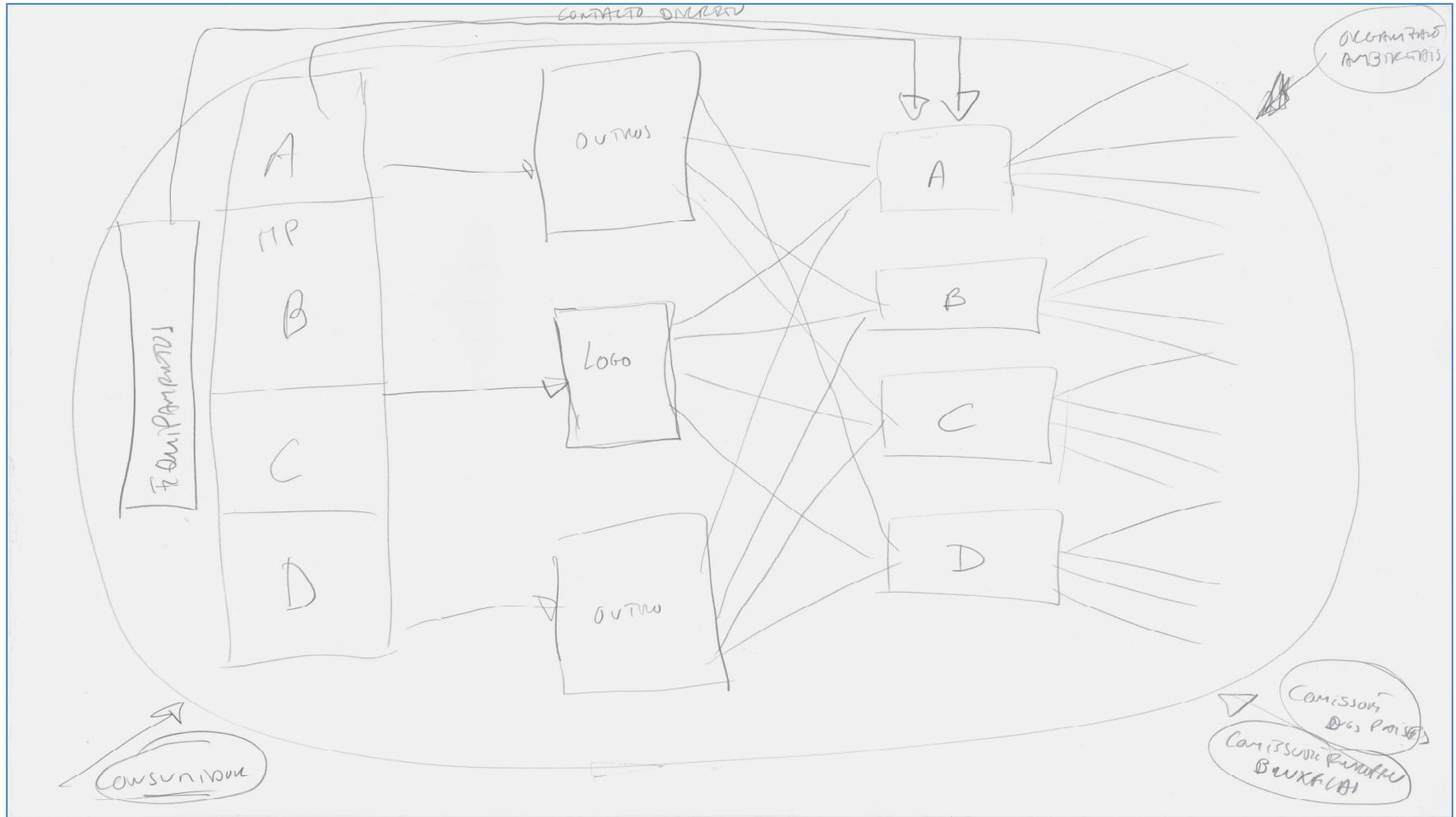


Figure 18 Visual representation of the world provided by Logoplaste Group's International Technical Director

Appendix 4

	NETWORK PICTURES DIMENSIONS		<i>Commercial Director</i>	<i>Technology Director</i>	<i>RM Purchasing Director</i>	<i>International Techn Director</i>	<i>LPTD Director (R&D)</i>	<i>Operations Director</i>	<i>Commercial Director /KAM</i>
Focus	. Actors Focus	On Him/Herself	On Him/Herself				On Him/Herself	On Him/Herself	On Him/Herself
		On the Company		On the Company	On the Company	On the Company			On the Company
		On the Surrounding	On the Surround	The Surrounding	On the Surround	On the Surround			
	. Processes Focus	Actor Bonds	Actor bonds	Actor Bonds	Actor bonds	Actor bonds	Actor bonds	Actor bonds	Actor Bonds
		Activity Links		Activity Links					Activity Links
		Resource Ties			Resource Ties				
	.Actors / Processes Focus	Focus on Actors	Actors	Actors		Actors			
		Focus on Processes	Processes	Processes	Processes	Processes	Processes	Processes	Processes
	. Focus on Actors Features	Resources			Resources	Resources	Resources	Resources	Resources
		Problems	Problems	Problems			Problems		Problems
		Aspirations	Aspirations			Aspirations		Aspirations	
	. Focus on Time Span	Past Events	Past	Past	Past	Past			
		Present Event	Present	Present	Present	Present	Present	Present	Present
		Future Events							Future
	. Functional Focus	Own Function		Own Function			Own Function	Own Function	Own Function
Other's Function(s)									
No Functional Focus		No Functional		No Functional	No functional				
Weight	. Normative Weight	Normative	Normative	Normative	Normative	Normative	Normative	Normative	Normative
		Reference							Reference
	. Moral Weight	Sense of Should	Sense of Should	Sense of Should					Sense of Should
		Just a View			Just a View	Just a View	Just a View	Just a View	
	. Importance Given to Knowledge	Important	Important	Important	Important	Important	Important		
		Not Important		Not Important				Not Important	Not Important
	. Importance Given to Internal Procedures	Relevant	Relevant	Relevant	Relevant		Relevant		Relevant
		Not Relevant				Not Relevant		Not Relevant	

Specificity and Coherence	. Coherent with Board's Explicit Identity	Coherent		Coherent	Coherent	Coherent	Coherent		
		Non Coherent	Non coherent					Non coherent	Non coherent
	. Situation Specificity	General Situations		General Situations	General Situations	General Situations		General Situations	General Situations
		Specific Situations	Specific Situations		Specific Situations	Specific Situations	Specific Situations		
	. Actors Specificity	Groups of Actors		Groups of Actors	Groups of Actors	Groups of Actors		Groups of Actors	Groups Actors
		Specific Actors	Specific Actors		Specific Actors	Specific Actors	Specific Actors		
Overall View of the Network	. Stereotype	A Network	Network	Network	A Network	A Network	A Network		
		A Supply Chain/Other			Supply Network	Supply Chain	Internal Network	Business Model	Supply Chain +Value Chain
	. Consistency	Consistent	Consistent	Consistent	Consistent	Consistent	Consistent	Consistent	Consistent
		In Conflict							
	. Structuredness	Structured		Structured	Structured	Structured	Structured		Structured
		Unstructured	Unstructured					Unstructured	
	. Stasis	Evolving	Evolving	Evolving	Evolving	Evolving		Evolving	Evolving
		Static					Static		
	. Broadness	Broad	Broad	Broad	Broad	Broad			
		Narrow					Narrow	Narrow	Narrow
	. Comprehensiveness	Comprehensive	Comprehensive	Comprehensive	Comprehensive	Comprehensive			
		Non Comprehensive					Non Comprehensive	Non Comprehensive	Non Comprehensive
	. Surrounding	Conflict	Conflict		Conflict	Conflict		Conflict	Conflict
	. Predominantly as...	Collaboration		Collaboration			Collaboration	Collaboration	
. Actors as Providers for...	. Tailored Solutions	Tailored	Tailored	Tailored	Tailored	Tailored	Tailored	Tailored	
	. Standard Solutions								

Table 29 Summary table of Network Pictures from the Logoplaste Group