

# Cluster dynamics in the Basque region of Spain

Etura Luque, N.

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# CLUSTER DYNAMICS IN THE BASQUE REGION OF SPAIN

N Etura Luque

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# *ABSTRACT*

Developing and retaining competitive advantage was a major concern for all companies; it fundamentally relied on being aware of the external environment and customer satisfaction. Modifications of the environment conditions and unexpected economic events could cause of a loss of the level of organisational adjustment and subsequent loss in competitiveness, only those organisations able to rapidly adjust to these dynamics would be able to remain. In some instances, companies decided to geographically co-locate seeking economies of scale and benefiting from complementarities. Literature review revealed the strong support that clusters had from Government and Local Authorities, but it also highlighted the limited practical research in the field.

The aim of this research was to measure the dynamism of the cluster formed by the geographical concentration of diverse manufacturers within the Mondragon Cooperativa Group in the Basque region of Spain, and compared it to the individual dynamism of these organisations in order to have a better understanding the actual complementarities and synergies of this industrial colocation.

Literature review identified dynamic capabilities as the core enablers of organisation when competing in dynamic environments; based on these capabilities, a model was formulated. This model combined with the primary data collected via questionnaire and interviews helped measure the dynamism of the individual cluster members and the cluster as whole as well as provided an insight on the complementarities and synergies of this type of alliance.

The findings of the research concluded that the cluster as a whole was more dynamic than the individual members; nevertheless, the model suggested that there were considerable differences in speed among the cluster members. These differences on speed were determined by the size of the company and their performance in dimensions such as marketing, culture and management. The research also suggested that despite of the clear differences in the level of dynamism among cluster members, all companies benefited in some way from being part of the cluster; these benefits were different in nature depending on each specific members

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# *Chapter 1: Introduction*

Retaining competitive advantage has always been a constant worry for all companies; it fundamentally relied on being aware of, and creatively responding to many elements within the business environment. Modifications of the environment conditions and unexpected economic events caused a loss of the level of organisational adjustment; strategies and structures became obsolete and consequently threaten the survival of the organisations.

Mintzberg (1979) pointed out that the economic and trading environments were not uniform and disparities existed; these disparities encouraged organisations to differentiate its structures looking for the best way to deal with the external environment. The evolution of the organisational forms represented a link between the environment and the structures adopted by these organisations. Volberda (1996) stated that dynamic environments demanded new organisational forms capable of exploring new opportunities effectively as well as taking advantage of them.

During the first industrial revolution, organisations used their capabilities to achieve economies of scale and scope so that they could compete in national and international markets and consequently grow. Such organisational capabilities needed to be created, established and maintained, nevertheless the rewards for doing so were considerable (Chandler, 1990).

The traumatic events of the WWI in 1914, followed by the financial crisis of the late 1920s which concluded in the Great Depression of 1930s and eventually the WWII, left industry in a weak situation. Those companies and nations which managed to maintain their capabilities were the ones to recover faster capturing markets they lost during the war (Chandler, 1990); these companies produced a single product for a local market and the functional or universal structure was the prevalent form. The universal form represented a hierarchical structure based on specialisation by functions, which permitted economies of scale and a division of labour for clarity and learning (Whittington & Mayer, 2000). Companies understood that a centralised approach with a division of labour offered a greater control over the workers as well as encouraged upgrading the production methods (Salaman, 2001).

After the WWII, some of the European national industries started recovering their previous strength; as competition increased, managers expected lower profits and fewer opportunities to reinvest earnings in their original industries, so they sought new ways of growth. New geographical and product markets became the main routes to enlarge modern organisations followed by the intensification of the competition in those markets (Chandler, 1990).

During the 1950s, Joan Woodward (1958) proved that organisational structures were associated with the type of technology employed (batch order, mass production or continuous production); during this period, diversification or product-related diversification to be more specific, became the standard structure in order to maximise the type of the technology used by companies (Rumelt, 1974).

Diversification could pursue two different objectives:

- Enhancing the utilization of resources: diversification was driven by the desire to avoid under-utilised resources. Those surplus resources determined the direction in which this diversification was exploited. This view was the main theory when analysing diversification. (Chandler, 1962 & Rumelt, 1974)
- Acquiring market power: diversified firms could use the profits drawn from one product market to subsidise a price war in another (Montgomery, 1985).

American large corporations were the model to follow during this period. They realised that the diversification of products and geographies made universal forms too complex to manage. Consequently, they adopted a multidivisional structure based on either area divisions or world-wide product divisions. The strength of multidivisional structure lay in its capacity to deal with economies of scale and complexity by separating strategy from operations. Diversification and the associated multidivisional structures were becoming the dominant form not only in America but around the world. Chandler (1990) declared that the multidivisional organisation was the end-point of the evolution of the modern firm; companies handled complexity through operational decentralization of the multidivisional structure. The adoption of multidivisional forms was not instantaneous or uniform; during the 1950s, companies were more reluctant to changes and new structures were only adopted when the old system began to collapse due to diversification of operations. The European organisations seemed to be very attached to their original

structures and were slower to move away from centralized and functionally determined forms into multidivisional structures. In addition, Europeans did not diversified into unrelated-products as the Americans did (Whittington & Mayer, 2000).

The late 1960s and 1970s represented the peak period of conglomerates (Firth, 1980); then, the introduction of new technologies in transportation and communication resulted in the beginning of the third industrial revolution characterized by global communication, internalisation of markets and high levels of demand. The ability to move fast and mobilise extended networks of subcontractors was key; multidivisional or M-forms were challenged by emerging new models as flexibility became the principal asset of the organisation. Chandler (1990) stated "related-diversification produced efficiency; unrelated-diversification is a step too far".

M-forms were control obsessive, too slow, too rigid in its boundaries for partnerships, too fragmented across the business to concentrate and learn. Castells (1989) introduced the idea of the Network Enterprise; a model which had the flexibility to respond quickly to dynamic markets and to cooperate with new partners. Prahalad & Hamel (1989) described the Japanese companies as portfolios of competencies while the American firms were just portfolios of businesses.

The rise of Japan and the fall of the US during the 1970s and 1980s helped change how people thought of large organisations; success no longer derived from a timeless and universal approach but time and territory based, there were different ways of doing things depending on the country and the period of time. The chandlerian model of multidivisional form was criticised for being 'timeless' and 'without geography' (Galbraith 1967, Heckscher 1994, Monge & Contractor 2003).

Culturalists such as Hofstede (1991), Hu (1992), Ruigrok and Tulder (1995), and Keillor and Hult (1999) declared that "firms are still the products of their nationally distinctive origin, their capital, top-management and critical activities remain disproportionally defined by their home base". Hofstede (1991) went one step further and stated that "culture is the collective programming of the mind" acquired through educational and family experience in youth; the programs project certain social behaviours into business life". In other words, acquired cultural orientations towards the long and short-term, influenced typical

approaches to strategy. And what worked in one country did not necessarily work in others, therefore "structure should follow culture" (Whittington & Mayer, 2000).

Several inter-organisational formations emerged when organisations search for new efficiencies and competitive advantage while avoiding both market uncertainties and hierarchical rigidities. During the 1980s and 1990s, different interfirm networks and strategic alliance forms represented distinct approaches that the organisations may had adopted as an attempt to stabilize the environment (Pellicelli, 2003). Strategic alliances became not only trading partnerships that enhance the effectiveness of the participating firm's competitive strategies by providing for mutual resource exchanges, but also new business forms that enabled the partners to enhance and to control their business relationship in various ways (Todeva & Knoke, 2005).

*The Californian School (Scott, 1998)* studied the development of new industrial spaces; according to them, these new spaces were the result of the vertical disintegration of production chains in a new era which required flexible accumulation. The attention soon shifted from universal causal mechanisms and circumstances into other forms which incorporated the role of culture, institutions and governments. This approach presented 'agglomeration' as a source of industrial dynamics, and particularly saw the region as a means to unite, transmit rules and habits that could coordinate economic players under conditions of uncertainty (Observatory of European SMEs, 2002).

Porter, as the Culturalists did before, noted that in such a competitive environment, nations/regions had become more important and not less. Competitive advantage was created and sustained through a highly localized process. Porter (1990) stated that "differences in national values, culture, economic structures, institutions, and histories; all of them contribute to competitive success. There were striking differences in the patterns of competitiveness in every country; no nation could be competitive in most industries. Ultimately, nations succeed in particular industries because their home environment was the most forward-looking, dynamic, and challenging".

Tan (2005) agreed with Lomi (1995) about the existence of organisational concentration patterns across different industries and at a national level which supported the view that location was a general factor shaping the evolution of organisations. They defended that if a location provides an evolutionary

advantage, then organisations would not had been homogenous and consequently geographical proximity would had played a role in the competitive behaviour. According to this view, agglomeration economies caused industrial activity to cluster spatially; geographical proximity generated competitive advantage, especially for small and medium sized enterprises. The interactions as a result of the cooperation and competence among the SMEs resulted in a whole greater than the sum of its parts; within regional clusters, organisations had easy access to specialised inputs, employees, information, institutions, public good as well as benefiting from the presence of complementarities (Porter, 1990).

Despite the fact that many studies had been conducted, no agreement was reached when attempting to define the cluster concept. Porter (1990) was one of the leading authors in the field and he described clusters as "a network of companies, their customers and suppliers of all relevant factors, including materials and components, equipment, training, finance and so on. It extends to educational establishments and research institutes which provide a large part of their human and technological capital". This definition focused on 4 main areas:

- Firm strategy, structure and rivalry
- Demand conditions
- Related and supporting industries
- Factor conditions such as size, age, market…

Other authors such as Rosenfeld (1997), OECD (2001), Isaksen (2003) and, Rosenfeld and Karaev (2007) defined that "clusters refer to geographically bounded concentrations of interdependent firms, which should have active channels for business transactions, dialogue and communication". Rosenfeld stressed that "without active channels even a critical mass of related firms is not a local production or social system and therefore does not operate as a cluster" (Observatory of European SMEs, 2002).

According to Porter (1990) the objective of clusters was to generate optimal competitive conditions for the members, therefore thinking about national borders could be inaccurate; he believed that "a cluster's boundaries depend mainly on the linkages between cluster participants and complementarities across industries and institutions that are most important to competition and they do not have to comply with political ones".

Spatial agglomerations of firms were not new in Europe. There were 4 clusters in Europe which were established before 1940 nevertheless, the importance of this type of organisational model did not pick up until the 1980s inspired by the characteristics and results of the so-called 'Third-Italy'; the Third-Italy was composed by sector specific clusters of small companies and workshops located in the Central and Northeast regions of Italy. This concept explained the relationship between the structure of those firms operating in the North of Italy and their performance, and compared them to the poor results obtained by other firms located in the South. In connection with this case, the emphasis shifted towards analysing the role of small and medium sized enterprises and their potential to enhance regional competitiveness in global markets (Andersson et al, 2004).

In a report carried out during 2002 by the European Charter of Small Enterprises, Member States recognised that "Europe's competitiveness depends on its small enterprises; they are the main driver for innovation, employment as well as social integration, and therefore the best possible environment for their growth should be promoted". The Members States also stated their purpose "to foster the involvement of small enterprises in inter-firm cooperation at local, national, European and international level as well as the cooperation between small enterprises and higher education and research institutions" (TCT Network Report, 2003).

Mason et al (2008) believed that the critical significance of clusters was their contribution towards the creation of knowledge. A company involved in a cluster had to share what they already knew, enhancing the region's as well as the company's capabilities. Participating companies in some occasions competed against each other; while in other instances, they gained competitive advantage from their input into common interest activities. Mason et al believed that knowledge created value by stimulating innovation, yet the way knowledge-sharing generated value greatly depended on the character of the local context.

Reinforcing this idea, some authors (Cooke et al 1997, Tödtling & Kaufmann 1999, Doloreux 2002, Li 2006 and, Schiuma & Lerro 2008) maintained that innovation systems had a regional dimension and they spoke about "Regional Innovation Capacity" as the overall innovation capabilities of a region, actually and potentially. This regional innovation capability was enhanced as a result of the innovation taking place at regional level as well as the policy and management actions seeking increasing local knowledge

resources (Schiuma & Lerro, 2008). Feller et al (2009) explained that if those innovation capabilities were to be leveraged, organisations should have adopted business models that used both external and internal ideas as a means to generate value, while defining internal mechanisms could help retain part of that value.

Spain displays noticeable regional differences in the organisation of the industrial economy. These regional disparities were reflected in the associative system of regional businesses and industrial interest (firm size, territory and activity) (Santisteban, 2006). The Basque Country was one of the most industrialized regions in Spain; this territory was known for its dynamism which was achieved through a combination of initiatives; inter-company partnerships, regional commitment of large companies, co-operative experience as well as programmes for continuous improvement and personal development (Arbonies, 2002).

The geographic characteristics of the area were the initial driver for the generation of a dense and diverse network of small and medium sized businesses. Internalisation, innovation and renovation, technological specialisation, energy efficiency, quality and training were just some of the factors that contributed to achieve high levels of competitiveness in Europe and international markets.

The first steps of the Mondragon Corporation Cooperativa (MCC Group) were consequence of an entrepreneurial priest which showed in the industrial development of the Mondragon valley as the only way to enhance the welfare of his parishioners. Following the economic growth during mid-1940s and 1950s, Talleres Ulgor (now Fagor Electrodomesticos) was born in 1956. It was not long before a large number of cooperatives pursued the same path. In the late 1970s, the individual cooperatives started joining forces and forming Regional Groups; the importance of this process was linked to the recognition of the need to collaborate and coordinate activities so they could optimise results more effectively than as individual entities. During the 1980s, the prosperous years abruptly stopped and the group did not escape the effects of the economic downturn. Some of the group firms did not survive these years, but those in better financial condition managed to apply new techniques (capitalisation of profits, flexible calendars, relocation, training…) that helped them operate under unknown circumstances.

In the late 1980s, the core organisational element continued to be the use of regional groups based on geographic proximity. Nevertheless, the group gradually recognized that the future required a more business-like and less sociological approach. At this point the Mondragon Industrial Cooperatives made two important decisions (Manu Ahedo, 2004):

1. The organisational structure evolved from valley based into region based taking the whole Basque Country into account.
2. A federal structure was adopted for the whole MCC with a more practical decision-making process.

This new organisational model opened up new dynamics for cooperation and synergies among the members (Ahedo, 2004). The Group moved from a corporation structure following geographical location to a sector-based approach. With regards to the management model, the model combined vertical and horizontal administration and it was overseen by various management teams as well as a Corporate Centre which promoted the implementation of policies and attempted to make the most of existing complementarities and synergies.

In 2007, the MCC group was formed by 246 entreprises and entities divided into three main sectorial areas: financial, industrial and distribution, supported by other secondary areas such as research, education and training. The MCC became the number one business group in the Basque Country and the seventh in the raking of the top companies in Spain with production plants in four continents.



Figure 1: Evolution of Sales Figure for the Industrial Area of the MCC Group (MCC Website)

The MCC Group represented a success story from the business point of view and from the regional point of view; Figure 1 clearly corfirmed the fast growing pace of the Group in terms of sale both nationally and internationally. The contribution of the Group in the Basque Country was not limited to commercial contribution but also to the development of other areas such as innovation, Research and Deveopment (R&D), training and education as well as a considerable impact on the Basque society.

## Conclusion:

The aim of this research was to analyse the cluster dynamics in the Basque Region of Spain with the intention of testing if geographical clustering had a real possitive impact over the dynamics of their member organisations.

It was widely discussed (Cooke et al 1997, Tödtling & Kaufmann 1999, Doloreux 2002, Li 2006 and, Schiuma & Lerro 2008) and eventually accepted that the environment, and especially alterations in that environment had had a considerable impact over the structure adopted by an organisation. Markets became extremely competitive and volatile and companies found it difficult to compete on their own any more, alliances and spatial agglomerations became a reference model. The MCC Group was a representative case of this trend; the group, which started with a single company, has now more than 200 members and it was considered to be one of the leading drivers of the Basque Country economic development.

In some instances, it was believed that the success of the MCC Group was due to the complementarities and synergies created by the geographical clustering and the consequent interaction among its members, therefore it felt necessary to check the following hypothesis;

> "*the cluster formed in the Basque Region of Spain by the geographical concentration of diverse manufacturers within the MCC Group shows a greater level of dynamism than those of the individual members*".

Taking into consideration the defined hypothesis, the overall aim of the research was to measure the dynamism of the cluster formed by the geographical concentration of diverse manufacturers within the

MCC Group and to compare it to the individual level of dynamism of these organisations. In order to achieve this, the following objectives were proposed;

1. Understanding of the different organisational structures with special interest in collaborative structures and clusters.
2. Understanding of what dynamism really meant within the field of organisational behaviour.
3. Developing a model capable of;
    a. Providing a complete view of the dynamism of the cluster as a whole.
    b. Providing a complete view of the dynamism of each of the members.
    c. Comparing the results and acknowledging the communalities and disparities among the obtained results.
4. Validation of results.
5. Critical evaluation of the obtained results.
6. Highlighting of the conclusions of the research and providing sugestions of actions when appropriate.

# *Chapter 2: Research Methodology*

## 2.1 Introduction

Glen (2010) defined research as "a human activity based on intelligent application of the investigation matter". Following this definition, scientific research represented the generic term used to describe the exploration or provision of information and theories for the rationalisation of the nature and the characteristics of the world around us. In other words, scientific method related to the different techniques available to human beings for studying a phenomenon, acquiring new knowledge, or correcting and integrating previous knowledge. To be characterised as scientific, a method of inquiry centred on gathering observable, empirical and measurable evidence subject to specific principles of reasoning. As a result, the collected data facilitated the formulation and testing of hypotheses. The purpose of scientific researchers was to suggest hypotheses as explanations for specific phenomena, and to design experimental studies that would have made possible to test these hypotheses. These steps had to be replicable in order to validly predict any future outcomes (Glen, 2010).

The scientific method aimed to provide findings that were in some way unquestionable, nevertheless, philosophical subjects were neither straightforward nor simple. In his 1958 book, *Personal Knowledge*, chemist and philosopher Michael Polanyi condemned the simplistic view of scientific research findings as purely objective and source of objective knowledge. From then on, other approaches defended that there were other forms of fundamental truth; post-modernist and realists in the scientific community believed that scientific knowledge also revealed real and fundamental truths about reality that may have not been necessarily objective.

The purpose of this chapter was to provide a general overview of the relevant philosophies and methods, present the research strategy and methodologies considered during this research study as well as discuss the adopted research design process and the decisions made to finally answer the hypothesis.

## 2.2 Qualitative Research

This study falls under the category of qualitative research as it aimed to understand the dynamic behaviour of a specific cluster and the organisations within it. Denzin and Lincoln (2005) described qualitative research as "a situated activity that locates the observer in the world. It represents an interpretive and naturalistic approach to the world where the researcher studies things in their natural settings, attempting to make sense, or interpret phenomena in terms of the meanings people bring to them". While quantitative methods sought to collect data answering what or when questions by using measurable and apply mathematical analysis, qualitative data aimed to achieve an in depth understanding of human behaviour and explanations to oversee such behaviour; qualitative approach answered to what, why and how questions.

Sarantakos (2005) gathered the main features of qualitative type research studies;

- Naturalistic: the research was undertaken in a natural setting, in other words, it was field focused.
- Dynamic: it focused on processes and structural characteristics of settings while capturing reality in interaction through intense contact in the field.
- Subject-centre: it described life-worlds from the view of the subject.
- Informative and detailed: it offered 'thick' descriptions and allowed entry to subjective social constructions of people. It presented the information gathered verbally in a detailed and complete form not in numbers or formulas.
- Normative: it employed a value-laden inquiry.
- Constructionist: it assumed that the social world was always a human creation, not a discovery
- Context-sensitive: it focused on context aiming at gaining an impression of the context, its logics, its arrangements...
- Reflexive: it valued the self-awareness of the researcher.
- Open: it stressed the principle of sincerity and it also entered the field with no preconceived ideas or pre-structured models and patterns.
- Flexible: design, methods and processes were open to change.
- Empathetic: it aimed to understand people not to measure them.

- Communicative: it focused on communication which was considered a selective process of meaning production in social context.
- Subjective: it valued the subjectivity and personal commitment of the researcher.
- Interpretive: it valued the reflective assessment of the reconstructed impressions of the world.
- Holistic: it focused on the study of the object in its entirety.
- Inductive: it proceeded from the specific data to general categories and theories.
- Small-scale: it studied a small number of people.

The characteristics provided by Sarantakos confirmed this study as a qualitative study; the research was field focused, thus naturalistic. It concentrated on the processes and structural characteristics of clusters and intended to summarise its reality by interacting with the field, therefore it was dynamic. By using survey and interview methods, the research described the reality of the cluster from the view of the participants; subject-centred. It could also be classified as informative and detailed as it offered an extensive literature review in the subject area and by using the other two research methods (survey and interviews), also allowed including subjective opinions and views of people. It was normative as human reasoning implied a value-ladden inquiry. The focal point of the research was the cluster, and the aim was to gain a better understanding of the context, its arrangement, etc, therefore it was context-sensitive. It was reflexive as it acknowledged and appreciated the self-awareness of the researcher. It could be considered as open as the researcher entered the field with no pre-conceived ideas. The research was flexible as the researcher was open to change the design, methods and processes if necessary. Despite the fact that the hypothesis implied measuring the level of dynamism of the cluster, it was also expected that the research helped understand why companies and the cluster behave in that way, so it could be considered as empathetic. The research valued communication and acknowledged the subjectivity of the participants and the researcher who interpreted the research findings in the discussion chapter. It was holistic because it focused on a specific cluster and this data was at later stage related to general categories and theories (inductive study). The study did not cover all companies within the group but focused on a reduced number of companies and people within the cluster.

## 2.3 Research Design

Kumar (1997) described research design as "the plan, structure and strategy of investigation conceived to find answers to research questions and control variable". Easterby-Smith et al (1999) listed some of the aspects to be considered; knowledge, being, researcher's approach philosophy, methodology and methods. Further down the research process, other areas also were considered; samples, time and validation of data and testing of the hypothesis.

In the previous section, the author classified this research as constructionist, subjective, qualitative and therefore naturalistic. These characteristics related to the epistemology, ontology, research and researcher approach respectively. Other areas also considered were the theoretical perspective, methodology, methods and validity (Crofty, 2007). "Unlike quantitative methodology, qualitative methodology was diverse, pluralistic and in some cases even ridden with internal contradictions" (Jacob 1987, 1988). In order to test the hypothesis, the author carried out a literature review that allowed her to develop a model or framework capable of measuring the dynamism of the cluster and the organisations collocated within it. One of the central issues in qualitative research was validity as the outcomes may be essentially based on individuals' views and therefore would not be reproducible, verifiable or consistent. In Denzin & Lincoln's book, *The SAGE Handbook of Qualitative Research*, the main question on validity was the conflict between method and interpretation. This view followed Richardson (1994) when he stated that "no method can deliver on ultimate truth". Thus, the objective of validity was to limit any form of bias and guarantee that all views were represented so all stories passed the test for consistency (Patton, 2002) and were taken into consideration fairly and with balance (Denzin & Lincoln, 2005). Organisations, as humans, were considered complex and therefore their lives were ever changing. The more methodologies and methods were employed to analyse them, the greater the likelihood to reach a sound understanding of how they were constructed and their behaviours (Easterby-Smith et al 1999, Denzin & Lincoln 2005).

In this case, the literature review was used to develop the model, but this model needed to be tested so the hypothesis was confirmed or discarded; testing the model implied approaching the organisations within the cluster and gathering information about their behaviour in relation to the capabilities pulled

together in the framework. Taking into consideration the large number of capabilities to be tested and the fact that it needed to be used at individual and aggregated level, a survey was considered as the most adequate method (it will fit within positivism as it seeks objective data). Interviews were used as a complementary method to surveys as they help clarify, confirm and expand previous responses; this was why they were chosen as the third research method (it fits within phenomenologism as it provided subjective interpretative data). The first method fitted within the literature review methodology while the other two were part of the survey research methodology.

Triangulation and theoretical sampling were conceptual attempts and techniques to get internal validity (Denzin & Lincoln, 2005). Some qualitative researchers also used other criteria; credibility, transferability, dependability and conformability (Lincoln and Guba, 1985) as well as relevance (Hammersley, 1992). The criteria of validity for qualitative research studies have no consensus and can be applied in two context; research design and measurement. Validity of design was achieved through internal validation and external validation. LeCompte & Goetz (1982) clarify these two concepts through two questions; internal validity should be able to answer questions such as; does the scientific researcher observe or measure what they think they are observing or measuring? While external validity focuses on answering queries such as: to what extent are the abstract constructs and postulates generated, refined or tested by the researcher applicable across groups?.

This approach has also been considered during the design process of the research; the questionnaire has been designed in such a way that it seeks internal validation. This will be followed by the interviews that seek clarifying and expanding the answers of the questionnaire and the external validation of the model. Find in the Figure 1 a summary of the research process followed during this study;

Figure 2: Illustration of the timeline and research approaches adopted during this study (adapted from Crofty, 2007)

## 2.4 Steps and the decisions made during the Research Design

The research process was explained following the steps proposed by Sarantakos (2005) who divided the research design process into five stages; topic and methodology selection, methodological construction of the topic, sampling procedure, data collection and validation of the collected data and finally writing of the thesis. This section provided a more detailed explanation for each of the stages within this study.

### 2.4.1. Topic and Methodology

Selection of the Research Topic:

An initial literature review was carried out in order to identify a gap in the literature and select the topic and scope of the research study. The next step was to define a hypothesis and a general aim which was later break down into more specific objectives (please, refer to the introduction chapter for a more detailed analysis of this step).

Selection of Research Methodology;

As the most appropriate approach within organisational research studies (Silverman, 1997), a qualitative methodology was followed. Nevertheless, within the qualitative research authors could benefit from using a multi-method approach (Easterby-Smith et al, 1999); in this case, the research inquiry was more adequately tested by using a multi-method approach mixing positivist and phenomenological theories. The positivist approach helped test the model while the phenomenological theory focused on understanding the answer provided in the questionnaire and further exploring the obtained responses.

The observer stayed independent, without obstructing what was being observed and focusing on both facts and meanings.

### 2.4.2. Methodological construction of the topic

Framing the question;

Literature Review or Secondary Data;

In order to test the hypothesis and meet previously defined objectives, the first thing to do was to perform a literature review focused on identifying the different capabilities present within dynamic organisations.

The research was divided into various topics and consequently chapters centred on twelve specific organisational dimensions which were later used as the basis for the development of a model capable of measuring the dynamism of the considered companies and the cluster as a whole.

Strategy and Rationale

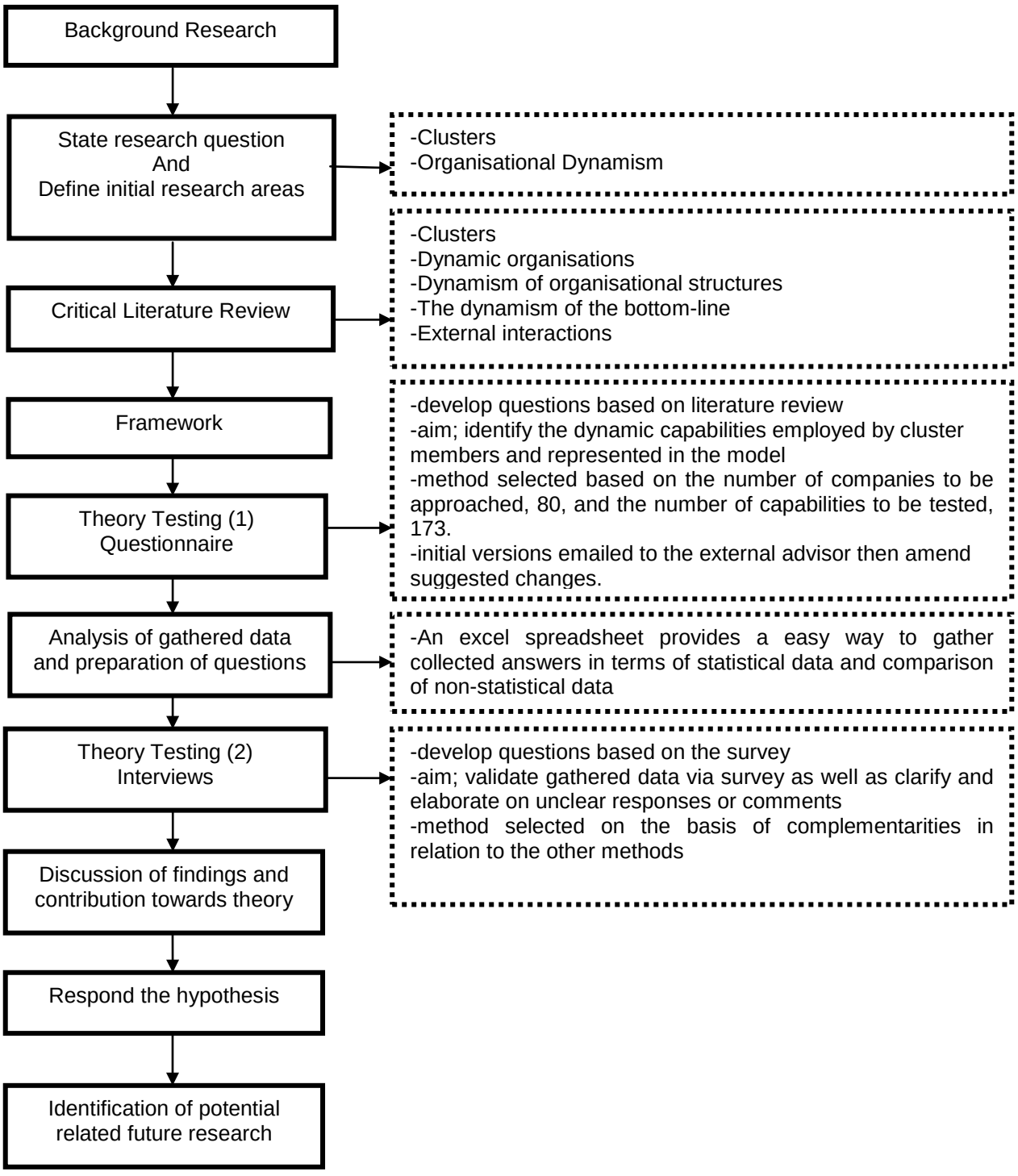



Figure 3: Research strategy and rationale

### 2.4.3. Sampling Procedure

Framing the question;

Choice of Setting;

The selected topic and its scope were the result of a series of reasons and motivations; personal interest of the author who became interested in networks and mega-structures during her previous studies. In addition, the Basque Country was one of the most dynamic regions of Spain and the Mondragon Corporation Cooperativa was clearly the leading group in the region. Mondragon was the base for most of the companies within the group; the town is only 24 Km away from the birth town of the author so She had grown up knowing many people who worked for one of these companies as well as the impact that the group had in their life and the general economy of the region. So, it was an easy decision when the group showed willingness to get involved in this research study.

Key Informants

During this research the author had the advice and support of a senior employee within the group. His help was invaluable when getting in touch with other research centres such as Polo Garaia, to test the survey and to access some of the companies.

Methods of Data Collection

As it was previously explained, all secondary data was gathered through a literature survey, while the primary data was collected through a questionnaire and a series of interviews.

The questionnaire was sent to all companies within the group that carried out some kind of manufacturing activity and were located in the Basque Country. These manufacturing companies were selected based on the fact that production was the division with most companies in the group (80), and only one division was considered in this research to maintain consistent and comparable results. Derived from the literature review, a long and detailed questionnaire with 66 questions was developed; after the advice of the advisor, the questionnaire was rewritten and reduced to 37 questions. The final version was posted to the 80 companies in the Basque Region and in a period of three months 24 responses were received. These 24 replies represent a 30% return which could be considered above average for this type of method.

The respondents to the survey were contacted at later stage to thank them for their response and invite them to engage in an interview. Four individuals were selected because of their position (manager or company directors) and the type of company they represented which allowed achieving a more comprehensive and diverse picture of the cluster. The series of semi-structured interviews were prepared based on the responses gathered from their answers to the questionnaire; these questions aimed at clarifying and expanding some of the responses and comments. In most of the cases, interviews were one hour long and they took place in the company facilities.

### 2.4.4. Data Analysis and Validation

Entering the field;

Data Analysis

The collected data included both quantitative and qualitative types of data. The quantitative data was analysed using an Excel spreadsheet while the qualitative data followed an interpretative phenomenological analysis; the information collected from the literature review was used to identify dynamic capabilities and developed a framework able to measure the dynamism of the company and the cluster when used at aggregate level. The survey made possible to identify what capabilities each company exploited and those areas which could be further developed. The interviews aimed at confirming the collected data in the questionnaire and expanding on the analysis of that data.

Checking for Soundness of Data

Denzin (1978) stated that “no single method ever adequately solves the problem of rival causal factors. Because each method reveals different aspects of empirical reality, multiple methods of observations must be employed. This is termed triangulation. Dezin offered it as a final methodological rule the principle that multiple methods should be used in every investigation”.

As result, Dezin (1978) identified four basic types of triangulation; data triangulation, investigator triangulation, theory triangulation and methodological triangulation. The reason to do so was explained by Brewer and Hunter (1989; 17) when they declared that “an arsenal of methods that have non-overlapping weakness in addition to their complementary strengths”.

As the research study followed a qualitative approach, a multi-method approach combining positivist and phenomenological theories was considered. In addition, a mix of quantitative and qualitative data was used; this complemented the data gathered through individual methods and provided greater depth and breadth to the analysis. And finally triangulation, the inclusion of the three different methods (literature review, questionnaires and interviews) aimed at providing reliability of results and reducing bias.

### 2.4.5. Report Writing and Submission

| | |
|---|---|
| **Chapter 1**<br>Introduction | The chapter aimed to introduce the topic and defined the scope of the research study. It also introduced the research inquiry by establishing the hypothesis and objectives. |
| **Chapter 2**<br>Research Methodology | The purpose of this chapter was to provide a general overview of the relevant philosophies and methods, to present the research strategy and methodologies considered during this research study and, to discuss the adopted research design process as well as the decisions made to finally answer the hypothesis. |
| **Chapter 3**<br>Regional Industrial Concentrations - Clusters | The research enquiry was directly related to clusters so that was why it was selected as the start point for the literature review. As result of this critical analysis, it was acknowledged that in order to understand clusters in its entirety, it was necessary to get an insight into the individual organisation members and their interactions with cluster members and outsiders. |
| **Chapter 4**<br>Dynamic Organisations | The chapter provided a chronological overview of the different approaches to explain the sources of competitive advantage within organisations. The chapter highlighted the evolution of the academic thinking in the field of research as well as the agreements and discrepancies on the various authors' views.<br><br>The literature review indicated that organisations made decisions at higher and lower level and both type of decision should be taken into consideration within the design the organisation. The chapter also indicated that dynamic capabilities were the most inclusive view to analyse the organisation. An agile approach was described as the most inclusive approach within dynamic theories. |

| | |
|---|---|
| **Chapter 5**<br>Dynamics of Organisational Structures | This chapter covered those higher level dimensions (strategy, culture, management, people, knowledge and information systems) which influenced the design of organisations. Within each dimension, a list of dynamic capabilities was acknowledged and later considered as elements of the framework to be developed. |
| **Chapter 6**<br>The Dynamism of the bottom-line | This chapter covered those lower level dimensions which influenced the design of organisations. Agile literature identified manufacturing, marketing, benchmarking and logistics as the internal dimensions to be considered; within each dimension, a list of dynamic capabilities was acknowledged and later considered as elements of the framework to be developed. |
| **Chapter 7**<br>External Interaction; Dynamics of Relationships | The purpose of this chapter was to analyse some of different types of external relationships and to identify those capabilities that enhanced the overall dynamism of the organisation. The chapter related supply chain to those relationships with companies outside the cluster, while alliances represented those relationships among cluster members. As part of each dimension, a list of dynamic capabilities was acknowledged and later transferred to the framework. |
| **Chapter 8**<br>Framework | This chapter introduced an original framework designed to evaluate the dynamism of each organisational dimension as well as to provide an insight into the overall flexibility of the organisation. The chapter explained how the framework was developed and used to answer the hypothesis. It also acknowledged the limitations of the framework; the large number of capabilities to be tested and how this large number of elements could create problems when analysing the data and interpreting the results. A supportive visual model was also created to help the researcher provide a clear illustration of the company's dynamism. |
| **Chapter 9**<br>Questionnaire<br>Gathered Data | This chapter aimed to explore the dynamism of the company members and the cluster by acknowledging the flexibility level of their operations at individual and group level. The chapter covered the entire survey process from the selection and design of the questions to the collection and interpretation of results, both at individual and aggregated level. It represented an internal validation of the model. |
| **Chapter 10**<br>Questionnaire<br>Interpretation of Results | The aim of this chapter was to internally validate the model by interpreting the results gathered in the questionnaire and by using the developed framework. All results were transferred into an excel spreadsheet and then |

analysed. The analysis process included three stages;

- Analysis of the spreadsheet.
- Analysis of the framework.
- Analysis of results by using a visual model.

**Chapter 11**

Interviews

This chapter meant to further explore the dynamism of the company by confirming the interpretation of the gathered results and getting more detailed information on these areas that needed further clarification. It represented an external validation of the model.

The chapter sought a profound insight of the views and opinions of some of the representatives of these different realities within the group; four interviews were conducted; a member of the General Council and three representatives of a large organisation, a medium-sized company and a small-sized business respectively. The main topics discussed were:

- Their opinions about the group and the way its functioning.
- The dynamism of the group and their particular organisation.
- The relationship with other members of the group and external suppliers.
- And the importance of geographical proximity in business.

**Chapter 12**

Discussion

This chapter discussed the research findings in relation to previously published work, discussed any limitations and weaknesses of the research followed by an explaination on how these research findings could influence the knowledge in this field. The chapter also answered the hypothesis, addressed the significance of the research as well as acknowledged its weaknesses and limitations.

**Chapter 13**

Conclusion &

Further Work

This chapter presented the overall conclusions of the work and some considerations that the group could contemplate for the future development of the company members. The chapter also discussed how this research could be continued and further developed in the future.

# *Chapter 3:*
# *Regional Industrial Concentrations - Clusters*

## 3.1 Introduction

Location behaviour was traditionally analysed following the theory of trade; the decision of locality depended on the cost of the land, labour, capital and energy. Improvements on the technologies of communication and transportation had a significant impact reducing the connection between location and input cost; during the 1980s, it became obvious that companies needed to be competitive at global level if they were to grow or even survive in a highly interconnected market. In the 1990s, the debate focused on the influence that nations and regions had as source of organisational competitive advantage; regional and national economies started to be considered sources of wealth creation and world trade consequently, promoting regional economic distinctiveness could enhance national as well as organisational competitive advantage.

Porter (1998) took this approach one step further when he stated that international advantage of nations applied to their industries and segments rather than organisations per se. In his opinion, most successful national industries were formed by groups of companies and not isolated members. Clusters provided a new perspective for economic and organisational development theories; the concept of cluster was associated with, but went beyond the concentration and co-location of related industrial activities. Clusters were thought to (C. Boari, 2001):

- encourage innovation and information flows
- incentive public and private investment and
- enhance customer-suppliers relationships by reducing feedback loops.

Due to the positive impact over the competitiveness of nations, cluster policies were widely promoted by Governments; some of these initiatives failed, but in general there was strong evidence that joining forces into clusters offered additional advantages for those small and medium sized businesses that strategically decided to do so. Best practices indicated that the economic, institutional and cultural environment were

the adequate consideration for the development clusters as top-down driven initiatives were not to progress successfully (Karaev et al, 2007).

## 3.2 Theories based on Industrial Geographical Concentration

### 3.2.1 Land-Rent Analysis

Ricardo (1821) introduced the concept of Economic Rent. The economic rent on land was defined as "the value of the difference in productivity between a given piece of land and, the poorest, distant and costly piece of land producing the same goods under the same distances". In this case productivity was measured on the basis of the natural fertility of the soil, the productivity of the existing technology, the availability of labour and capital as well as the relative distance from the same market. Ricardo linked the economic rent theory with the net revenue approach as productivity reflected the cost differences in supplying the products to that one market from that specific piece of land and then considered the aggregate of the whole system or pieces of land.

### 3.2.2 Industrial Districts

Marshall (1890) introduced the concept of Industrial Districts. These were characterised by;

1. The geographical collocation of numerous specialised small firms.
2. A focus on a dominant industry where participants were specialised in different stages of the same production process.
3. The values and norms of a society that encouraged and facilitated economic growth bringing closer together industrial relations and institutional activities.

Isaksen (2001) explained that the creation and growth of industrial districts depended on a number of social and cultural factors which were specific to the territory they were based on. The existence of mutual trust and industrial spirit were essential elements in the definition of industrial districts; Beccattini (1990) defined industrial districts as "agglomerations in which community and firms tend to merge, and where district success relies heavily on the social-cultural context in which it is rooted".

Industrial district theory represented the first attempt to explain why businesses within the same industry would come together. Collocated businesses were able to gain competitive advantage as the transaction

and transportation costs were reduced and benefited from economies of scale as well as proximity to market (McDonald & Vertova, 2001). Industrial districts and clusters were different as industrial districts were more input orientated and sought to secure geographically available inputs for production, while clusters looked for optimal competitive conditions (Karaev et al 2007).

### 3.2.3 Agglomerations looking for economies of Scale

In this type of organisational concentration, businesses and workers were linked only through arms-length transaction. Being close together made it easier to be found by the customers and consequently reduced their searching cost; customers made decisions by comparing their price, quality and innovation. Isaksen (2001) believed that to change from a cluster set up into an innovation system, it was essential to create a strong institutional infrastructure at regional level capable of supporting and promoting innovation and cooperation.

## 3.3 Schools of thought: Evolution of the Concept of Cluster

Clusters became popular in the late 1990s; nevertheless, the concept of business concentration was far from new; different schools described diverse motives for enterprise concentration. The variation of purpose was a direct reflection of the economic environment of the period. Find below an explanation of the different approaches and their evolution:

### 3.3.1 The Neoclassical Economic Tradition

The Neoclassical School concentrated on the analysis of the behaviour of individual consumers and companies. They focused on how consumers and companies interacted in the market and how the price of goods and services was set up as result of it; for them, decisions were based on prices. Based on the existing prices and the income level they could generate, individuals and companies made decisions that maximise their profits. The most representative views under this approach were presented by;

i. **Alfred Marshall**

Marshall (1920:221) introduced the concept of external economies in his book *Industry and Trade* as a means to explain why and how the location of the industry mattered and why and how small companies became efficient and competitive. He talked about localities as concentrations of many small businesses

with similar characteristics in specific locations, and justified their positive impact based on three considerations;

1. Labour market pooling: the concentration of similar companies helped attract, develop and benefit from the pool of labour with a common set of skills.
2. Supplier Specialisation: agglomeration of companies brought suppliers close together by offering the scale required to refine and specialise their expertise.
3. Knowledge spill-overs: ideas tended to move easily from one company to another as result of the geographical proximity.



Figure 4: Marshall's triad external economies of industrial localisation (Marshall, 1890)

ii. **Regional Science**

This approach refined Marshall's view by discriminating between localisation and urbanisation economies. Localisation economies were those concentrations where similar companies within the same industry benefit from being closer to each other, while urbanisation economies considered the grouping of dissimilar companies working in the same or different industries. Krugman (1995) in his book *Development, Geography and Economic Theory* noted that regional science was not a unified subject and it was most adequately illustrated as a set of tools which helped answer some of the practical

questions and challenges concerning spatial challenges. Griffith (1999) described the role of regional science as the means to supply an organised account with geographical reference in such a way that these specific characteristics could be generalised and applied to the companies based in that location.

iii. **Jane Jacobs**

She highlighted the critical role played by cities in the economic development. Cities were source of knowledge generation and knowledge sharing as result of their diversity of inhabitants and opportunities for formal or informal interactions. She also aimed to explain why some cities grow while others stagnated or decayed; following her theory, cities grew when the authorities and businesses focused on treating, renewing and exporting imported goods and services which translated into income generation that could be also used to import new products. According to her, the city activities provided the most favorable scenery for innovation and they were the motor behind the local and national economic development (Jacobs, 1969).

iv. **New Economy Geography**

This model represented the transaction point into a new approach which examined the location of companies based on factors such as product differentiation or transportation cost rather than on price. Nevertheless, there were still unanswered questions such as why economic activity was unevenly distributed across the geographical space, how economic interaction between the different locations determined income levels in these areas or how geographical concentration of economic activity affected and responded to external changes. This theory addressed these questions following rigorous micro-economic foundations and showed how geographical concentrations could define the interaction between transaction costs across space and different methods to improve returns to scale (Venables, 2005).

### 3.3.2 The Social and Institutional Tradition

Instead of dealing with how individuals and companies reacted to economic incentives, this School focused on the impact that social forces and relations had over them. This theory did not presume that markets were the major organising force of the economic life but the market itself was part of a non-market social relationship. Under this perspective there were two main research areas:

- Business Organisations: explored clusters by studying the relationship within and between companies (technologies used, how structures work, employer-employee relationship, etc) as they determined the characteristics and location of the cluster.
- Geography; looked at the interaction between the global and the local environments. This interaction dictated the necessity to reshape the industrial structures of cities and/or regions.

### 3.3.3 Michael Porter

Two of the questions that were crucial on Porter's work: why did some nations succeed while others fail in international competition? And, why did companies based on particular nations achieve international success in distinct segments and industries?. Porter (1998) denied any of the traditional sources of competitive advantage (cheap and abundant labour, natural resources, protectionist measures or management practices) and instead he stated that competitiveness was achieved by creating a business environment able to integrate the market place, industry and public institutions.

The National Diamond aimed to explain why one nation accomplished international success in a specific industry or segment while others did not. The framework included 4 attributes that could shape the environment where local companies competed and encouraged or inhibited the creation of competitive advantage:

- Factor conditions: gave an indication of the nation or region's position with regards to production factors such as natural resources, labour skills or infrastructures.
- Demand conditions: the nature of the home demand for the industry's products or services.
- Related and supporting industries: the presence or absence of internationally competitive supply industries.
- Firm strategy, structure and rivalry: the external economy and the domestic rivalry which influenced the way companies were created, organised and managed.

The 'diamond' was an interlinked system where changes in any of the elements influenced the others; all elements combined determined, individually and as a system, how organisations were born and competed in the market place. According to Porter, organisations were able to gain competitive

advantage depending on their home base capabilities by facilitating the accumulation of specialised assets and skills faster than in other nations or regions.

The diamond acknowledged that there was not universal competitive strategy and emphasised the fact that strategies had to be customised to the organisation taking into consideration, its skills and resources as well as the particular industry it was related to. Both industry structure and competitive positions needed to be dynamic; nations accomplished economic growth when local companies were able to adapt and innovate early and aggressively both domestically as well as internationally. Governments could influence some parts of the diamond by providing the correct skills, resources and supporting institutions.

The systematic approach of the framework encouraged concentration of industries as a means to gain competitive advantage. Successful industries tended to be connected through vertical and horizontal relationships trying to encourage flow in all directions. Porter (1998) explained that “clusters not only reduce transaction costs and boost efficiency but improve incentives and create collective assets in the form of information specialised institutions and reputation, among others. More important, clusters enable innovation and speed up productivity growth”. The cluster became a vehicle for promoting, diverting and overcoming inwards focus, inactivity, rigidity and accommodation among competitors that slow down or obstruct new initiatives. The presence of the cluster facilitated information flow, as well as the engagement on new initiatives and ways of doing things, that could encourage new entries from spin-offs; downstream, upstream or as extended to related industries. Clusters encourage and accelerated the competitive abilities of the industry as a whole; interconnected companies all investing in specific but related technologies, information, infrastructure, and human resources tended to be aided by public institutions and trade association. As result, the cluster became more than the sum of its parts.

The limits of the cluster were established by the linkages and the complementarities across the industries and institutions required. Cluster could extend over regions and national borders and they rarely applied to standard industrial classification systems; in most cases, these classifications failed to include the competition and partnership relationships. According to Porter, clusters represented a new spatial organisational model between the arms-length market and the complementary of products. To fully acknowledge the interdependencies among clusters, competition and the company strategy, the analysis

started by recognising how a cluster may influence competition and the competitive advantage of its members. There were three ways that happened (Porter, 2000): by enhancing the static productivity of companies or sectors within the cluster, by increasing their ability for innovation and by encouraging new business formation that supports innovation and expands the cluster.

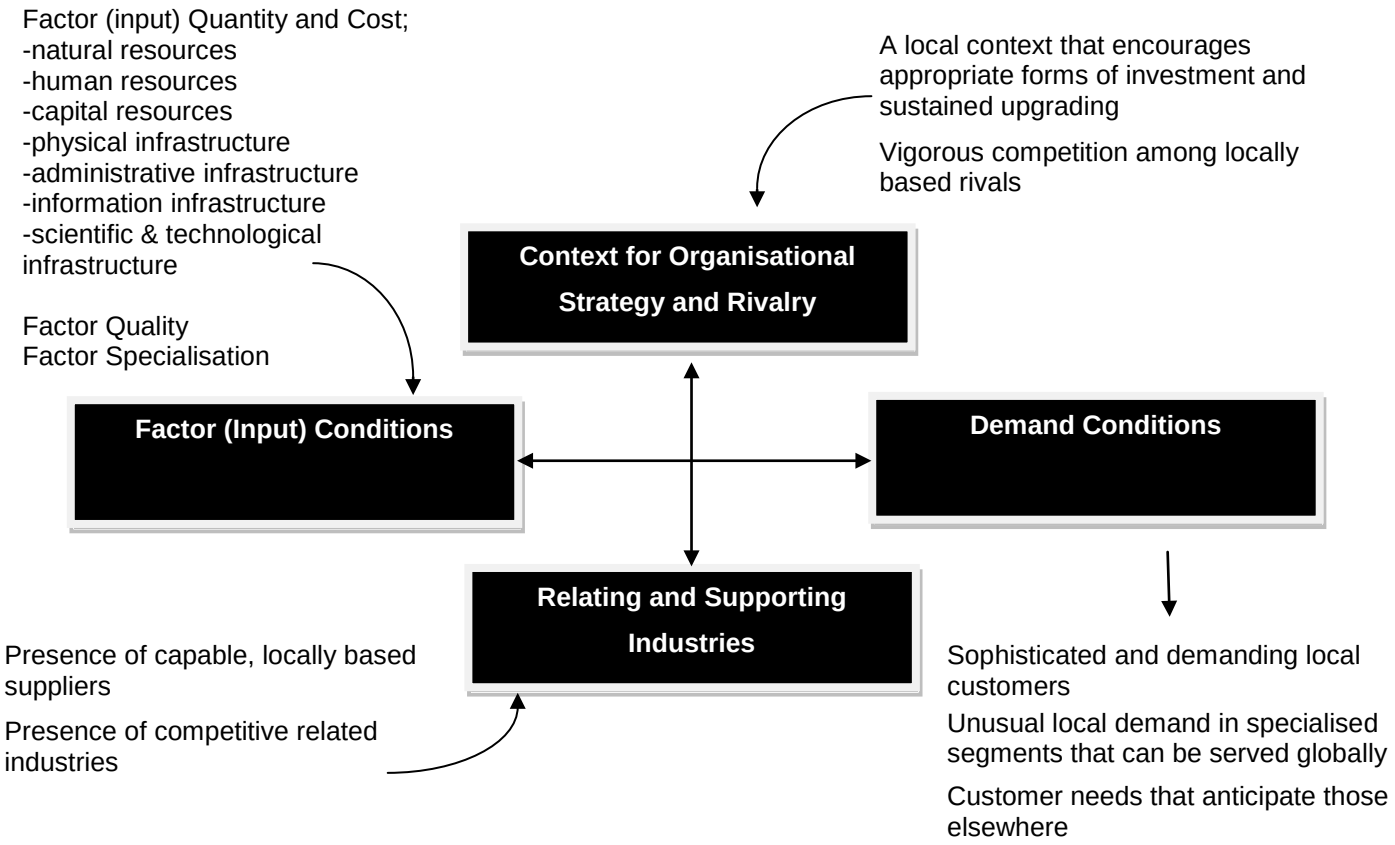



Figure 5: Sources of competitive advantage for clustered locations

Porter (2000) warned that the mere collocation of companies, suppliers and institutions did not imply the realisation of the full potential for economic value generation. Social bond attached the cluster together and initiated the value creation process; competitive advantage of the firms within the cluster greatly depended on the free flow of information, value-adding exchanges or transactions, the motivation to coordinate agendas and work across various organisations. Consequently, it could be said that in some cases the company's potential to attain competitive advantage resided outside the company's borders or even outside its industry.

Porter was criticised for his lack of geographical precision, vague typologies and proposed evolutionary paths. Martin & Sundely (2003) summarised these critics;

- The collocation of businesses, which operated in the same industrial sector, was not enough to create external economies. According to them, there were other factors such as trust building, information sharing, common strategies, etc. which were more powerful when developing effective alliances.
- The traditional clusters tended to be formed by small and medium sized enterprises, but there were clusters that contained both small and large companies. Traditional industries were the ordinary sectors but high-tech clusters were not uncommon. In addition, there could be new, mature or declining clusters.
- Competitiveness became problematic when applied to a nation; nations and regions did not compete in the same way as companies did and consequently the correlation among them was false.
- Porter measured region's performance according to their productivity but it did not consider other types of competition that organisations could adopt.
- While Porter recognised the importance of social and knowledge networks for the production and flow of information and knowledge, it was not greatly emphasised in his theory.
- The cluster theory analysed clusters as isolated entities without taking into account the rest of the economic landscape. Nevertheless, not all companies needed to be members of a cluster as there were other means for economic growth.
- Internal focus could become problematic for long term geographical concentrations; the network relationship, which could be so beneficial in the early stages of the cluster, could be source of inactivity and inflexibility in the long-term.
- There was not enough empirical evidence to establish a direct relationship between clustering and innovation.

### 3.3.4 Economic Development Practitioners

It was discussed that to remain competitive advantage, a region and its local authorities needed to consider regional integration as a means to upgrade its industrial structure (Ahedo, 2006). This was based on the idea that Local Governments acted as facilitators of new clustering initiatives by bringing people, agencies and organisations closer together: initiatives such as network events, training sessions, technology infrastructure development, etc. could help share information regarding market conditions, technology and input source at relatively low cost. Nevertheless, Governments' efforts to create and develop clustering policies would not be effective unless several geographical, historical and institutional preconditions were previously met (McDonald & Vertova, 2001).

Authors such as Martin & Sunley (2003) and Wolfe & Gertler (2004) believed that the value of "the cluster brand" was overestimated as flows of information were not necessarily limited to regional level, and dynamic clusters could also lead their efforts towards developing strong connections with other clusters at international level.

## 3.4 Defining the Cluster Concept

Despite the benefits of industrial clustering being widely accepted, no a common notion of the concept was determined:

"Clusters refer to geographically bounded concentrations of interdependent firms, which should have active channels for business transactions, dialogue and communications" but "without active channels, even a critical mass of related firms is not generally perceived as a local production or social system, and therefore does not operate as a cluster per se" (Rosenfeld 1997).

"Concentrations of firms that are able to produce synergies because of the geographical proximity and interdependency", "Clusters are more open than networks and obtain economies of scale because the market delivers it to them as a result of a scale of demand" (Rosenfeld, 1997).

"Clusters are geographically proximate groups of interconnected companies and associated institutions in a particular field linked by commonalities and complementarities. Clusters encompass an array of linked industries and other entities important to competition. Clusters are often extended downstream to

channels and customers and laterally to manufacturers of complementary products and other industries related by skills, technologies or technical support" (Porter, 1998).

"Group of firms within one industry based on a particular location" (Swann & Prevezer, 1998).

"A large number of interconnected industrial and/or service companies having a degree of collaboration typically through a supply chain and operating under the same market conditions" (Simmie &Sennet, 1999).

"Networks of producers of strongly independent firms linked to each other in a value-adding production chain" (Roelandt & Hertag, 1999).

"A network of companies, their customers and suppliers of all relevant factors including materials and component, equipment, etc. It extends to educational establishment and research institutes which provide a large part of the human and technological capital. They are all stakeholders in the market, influenced by globalisation, commercialisation, skills development, inward investment, start-ups and trade development" (Carrie, 1999).

"Sector and geographical concentrations of enterprise that produces and sell a range of complementary products and which also face common challenges and opportunities. These concentrations give rise to external economies such as the emergence of specialized suppliers of raw materials and components and the growth of a pool of sector-specific skills which can foster development of specialised services in technical, managerial and financial matters" (The United Nations International Development Organisation – UNIDO 2000).

"Localised networks of specialised organisations, whose production process are closely linked through the exchange of goods, services and knowledge" (Van den Berg et al 2001).

"A concentration of interdependent firms within the same or adjacent industrial sectors in a small geographical area" (European Union Commission Report, 2002).

"A group of firms and related economic actors and institutions located near one another and that draw productive advantage from their mutual proximity and connections" (Cortright, 2006).

## 3.5 Benefits and Drawbacks of Clusters

As in any other organisational association, clusters had positive and negative aspects to them. A summary of the advantages within these geographical concentrations were gathered (Porter, 1998, Cortright, 2006, Patti, 2006 and Teräs, 2008) as well as their drawbacks (Martin and Sunley, 2003):

Table 1: Benefits and drawbacks of clusters (Martin and Sunley, 2003)



Karaev et al (2007) presented a conceptual model explaining the relationship among cluster variable:



Figure 6: Conceptual model of relationship among cluster variables

## 3.6 Seven Elements of the Concept of Cluster

Andersson et al (2004) believed that clusters characterised by different applications depending on the specific situations. Consequently, they described seven elements as a summary of these distinct notions;

1. Geographical Concentration

Accumulations of similar companies competing against each other tended to be surrounded by suppliers and located close to concentrations of actual or potential customers. The region became the ideal environment for the industry as the required economic atmosphere was in some way 'in the air'. This environment promoted efficiencies and specialisation, but especially encouraged innovation and the likelihood of being noticed by the Government and international markets. This helped energise the behaviour of existing cluster members and attracting new ones. Clusters needed to be aware of the existing products and services outside their boundaries as they were required to be internationally competitive. Rosenfeld (2005) defended that the geographic borders of a cluster were defined by the distance that employees and entrepreneurs were willing to travel to attend meetings or turn up to work.

2. Specialisation

Traditional clusters were viewed as a group of specialised actors connected together through a core activity which would direct them on how to compete on the same markets and processes. Being close together facilitated the exchange of information and experiences, helping members to identify opportunities and to capture synergies in different stages of the process to later coordinate their activities with other businesses. Phlippen & van der Knaap (2007) related the idea of technological proximity with the notion of flexible specialisation and related variety. Specialisation and variety were regarded as two opposite views within the economic geography literature when trying to explain what generated regional knowledge spillovers; flexible specialisation focused on synergies within the sector while related variety relied on inter-sectored synergies.

3. Multiple Actors

The concept of cluster represented pluralism and consequently included different types of actors under the same umbrella; collocation of businesses by itself was not enough, it was crucial to develop a relationship among the businesses, and with other organisations such as public authorities, academia, the financial sector, etc. In order to develop tight links among the different types of organisations,

communication and trust were a must; clusters needed to develop active channels for business transactions, dialogue and communication. Rossenfeld (1997) stated; "*without active channels even a critical mass of related firm is not a local production or social system and therefore does not operate as a cluster*".

According to the relational embeddedness perspective, the possibility of organisational cooperation increased when there was a previous collaborative experience. Relational embeddedness developed trust and transparency between the different organisations involved in the process while promoting learning and minimise opportunistic behaviours (Phlippen & van der Knaap, 2007). Individual actors were attracted into clusters following their particular market goals; nevertheless, their capabilities and roles evolved depending on the national economic context and the stage of the cluster life cycle.

4. Competition and Cooperation

Being close together increased the pressure for cluster members to be competitive; organisations sought improvements on efficiency and cost control as well as enhancing their differentiation capabilities. Without the motivation for continuous improvement, a cluster would fail. By operating in groups, businesses could attract resources and services otherwise inaccessible in isolation. By sharing resources and risks while developing complementary functions, organisations exploited economies of scale and scope as well as took advantage of new business opportunities. In summary, competition and collaboration defined the relationship between the interconnected members.

Four different stages were identified as part of the networking process between local business and suppliers (C. Boari, 2001):

- Stage 1: Vertical relationships - unplanned relationships (ad-hoc subcontracting or short-term relationships normally aiming at filling temporal over-capacity).
- Stage 2: Vertical relationships – planned relationships; more specialised and permanent relationships which required the cultivation of trust and cooperation.
- Stage 3: Emerge of horizontal relationships - seeking cost reduction, quality and service improvement, accessing new market opportunities and following market trends (new product development was the main objective).

- Stage 4: Hierarchical Networks as consequence of a series of acquisitions (in this case the principal aim was to achieve customer satisfaction)

5. Critical Mass

In order to benefit from the synergies that a cluster could generate and to create internal dynamics, the cluster needed to reach a critical mass. Critical mass helped increase the resistance of the cluster to external shocks and organisational adjustments. The necessary number of independent members to reach the critical mass level varied depending on the location, size and level of market penetration.

6. Long Life Cycles

Clusters were not temporary initiatives but long-term partnerships; during their existence they aimed at growing and evolving as any other organism did. Stage 1 represented the agglomeration of various companies when chosen to collocate close to each other within a region. Stage 2 related to emerging clusters and described the period when these companies identified new business opportunities as a result of working together. Stage 3 implied the development of these clusters as new organisations were attracted to the region, in the same or related activities, new relationships were created. Stage 4 required certain maturity as clusters grew and built up sufficient critical mass characterised by active engagement with other organisations and regions outside the cluster borders. Stage 5 involved transformation if a cluster was to survive. In some cases, there was a change with regards to the core activities of the cluster towards new forms of working or new market areas to prevent the decline of the cluster and re-establish themselves. In other cases, the cluster broke into new smaller clusters specialised in new activities. Cluster partners benefited most at early stages of the life cycle, while the majority of disadvantages would surface later on. It was difficult to know in which stage the cluster was; some parts could still be in early stages of the life cycle while others had already moved into more advanced stages. As the cluster evolved, so did those factors that drive its success.

7. Knowledge Creation and Innovation

Clusters would only mature and survive along the years if the participants were able to maintain their initial competitive advantage. Knowledge creation and innovation were the more efficient sources of competitive advantage. For the region to benefit from these activities, various conditions needed to be met (Rutten & Boekema, 2007):

- Regional companies had to cooperate on innovation regional networks.
- Developed regions had to have at least one area of technology in which they were strong.
- Adequate levels and quality of the labour market supported by high levels of demand of innovative products and services.

Another two elements were added by Maskell & Lorenze (2006) and Teräs (2008) at a later stage:

8. Social Capital and Trust

This element highlighted the importance of local culture and institutions for the normal functioning of a cluster. Porter (1998) mentioned that "a cluster requires personal relationships and contacts, a sense of common interest and insider status" and "its dynamism lies not in a single technology or product but in the competence of each of its constituent parts and their multiple interactions". Trust acted as the lubricant easing the relationships, reducing frictions and enhancing interaction and exchange.

9. Internal and External Linkages

For a cluster to grow and to prevent stagnation, the cluster not only required advantageous local conditions but also needed freedom and continuous relationships with the external environment. The cluster needed to acknowledge what was already offered in the market place as well as to benchmark, capture and absorb best practices for a rapid response to changing environments. Not all regions had the same characteristics, neither all the clusters did. Andersson (2004) stated that "whereas neither all these elements need to be present, nor they are necessarily desirable"

## 3.7 Conclusion

The research question was directly related to geographical concentrations and more explicitly to clusters, so that was the reason to select clusters as the starting point of the literature review of this study. This chapter identified different views on organisational geographical concentration and its implications for the economic development of organisations, regions and nations.

The literature review established that clustering helped individual organisations, especially small-sized organisation, grow and develop into competitive entities but also created complementarities and synergies that would enhance the competitiveness of the region or nation; authors like Porter believed

that within clusters, the whole was greater than the sum of its parts. Nevertheless, geographical clustering on its own would not generate these complementarities and synergies (Porter 1998, Martin and Sundely 2003).

The Social and Institutional Tradition theory as well as Porter suggested that exploring clusters involved studying the relationships within and between the individual member organisations as they were the ones to determine the characteristics and location of the cluster.

The second feature that the chapter highlighted was the fact that clusters were dynamic organisms which required interactive relationships to function and evolve over time. The chapter reviewed several attempts to identify and measure the benefits of being part of a cluster but these attempts could be considered as rather simplistic and incomplete; these attempts contemplated the cluster as a whole without considering their individual elements and consequently they could only see the surface of the cluster.

Following this idea, the next stage of the research deconstructed the selected cluster into single entities aiming at uncovering the characteristics of the individual components as only then it would be possible to move into an aggregate level. This approach also facilitated testing the hypothesis and comparing the characteristics of the individual members against the characteristics of the cluster at aggregate level.

# *Chapter 4: Dynamic Organisations*

## 4.1 Introduction

This chapter provided a chronological overview of the different approaches to explain the sources of competitive advantage within organisations. The chapter highlighted the discrepancies on the authors' views as well as the evolution of the academic thinking in the field of research.

A basic question in the field of the Strategic Management asked how organisations attain and sustain competitive advantage; this question became even more relevant in current volatile markets. Early theories emphasised the interrelationship at higher level between "strategy" and "structure", more contemporary approaches focused on the interdependencies at lower level; resources, capabilities and activities.

Teece et al (1997) grouped these theories in three main approaches: the first view follows the structure-conduct-performance paradigm which explained how organisations adopted a series of actions to develop defensive positions against competitive forces. The second view referred to the strategic conflict approach which explained how organisations increased their effectiveness and off-balanced their rivals by using strategic investment, pricing strategies or control of information. Other theories centred the discussion of competitive advantage on improving efficiency and effectiveness; this approach had its roots on the analysis of corporate strengths and weaknesses.

This chapter aimed to chronologically analyse the emphasis on the distinctive theories of the firm proposed along the years: resource-based view, capabilities-based view, activity-based view, knowledge-based view, competence-based view, dynamic capabilities based view and agility.

## 4.2 Resource Based View

Penrose developed the resource-based view (RBV) of the firm in 1959; in her book *The Theory of the Growth of the firm*, she suggested that the competitive advantage of the organisation was principally determined by its distinctive resources and capabilities. According to her, those resources that were valuable and rare were also the origin of competitive advantage and even a source of sustained

advantage if the firm was capable of protecting them from imitation, transferability or substitution over long periods of time. This approach of the firm introduced a new point of view; rent-generating capabilities had to derive from the firm itself and not be the result of asymmetric information of the market.

Following this view, Wernefer (1984) argued that resources were "anything which could be though of as strength or weaknesses of a given firm". In the 1990s, Barney (1991) provided a more detailed and strategically orientated definition; "resource are all assets, capabilities, organisational process, firm attributes, information and knowledge…controlled by the firm that enable the firm conceive of and implement their strategies that improve its efficiency and effectiveness". In other words, if resources could be easily obtained from the market place or imitated by competitors, then they would not provide meaningful economic advantage.

Barney mentioned three general categories of resources that could facilitate conceiving and implementing value creating strategies; physical capital, human and organisational capital resources. This list was expanded by Grant (1991) who suggested six types of resources; financial, physical, human, technological, reputation and organisational resources. Not all categories and attributes within these categories were strategically relevant for all organisations; some of them could even be detrimental in certain cases. Consequently, he proposed that those attributes would follow the following characteristics (VRIN resources): be valuable, be rare among the organisation's current and potential rivals, as well as be imperfectly imitable (cover aspects such as history dependent, causal ambiguity and social complex) and be irreplaceable.

There are various the critiques to this approach:

- RBV did not provide explicit instructions concerning how the different resources contributed to increase or maintain a sustained competitive advantage of the firm (Miller & Shamsie, 1996)
- Teece et al (1997) pointed out that this was a static view of the firm as rents were generated through firm-specific resources instead of economic profits from product market positioning. In order to adapt to volatile environments, managers needed to develop innovative strategies centred on the control over scarce resources, skill acquisition and the administration of knowledge, know-how and learning activities.

- RBV offered a theory of sustainability but it was not a theory of value creation and therefore its value as strategic tool was limited (Priem & Butler, 2001)
- The RBV was based on the assumption that only those resources that were valuable, rare, inimitable and non-substitutable generated and retained competitive advantage. Such resources were considered to be strategic and intangible resources. Galbreath (2005) believed this statement too generic and nearly impossible to develop an "all inclusive" list of resources.
- The RBV theory regarded organisations as a group of heterogeneous assets which seemed to be the central factor in explaining the difference in performance between one firm and another. RBV focused on the origins for these differences to persist but it did not analyse their cause or the process which determined them (Lopez, 2005).
- Sheehan & Foss (2007) believed that RBV explained why some firms outperform others, but this analysis was too general to be really applicable to any resource in the organisation, and therefore provided limited guidance to managers.
- Wu (2010) agreed with the idea that accumulation of VRIN resources improved organisation's competitive advantage when facing low or medium volatile environments, nevertheless the impact of those resources decreased considerably in highly dynamic environments.

## 4.3 Capability Based View

Grant (1991) argued that the theory of the firm was based on a definition centred on what it was capable of doing instead of what needed satisfying. Following this statement, it became necessary to differentiate both terms resources and capabilities; resources were explained as basic units of analysis, while capabilities were formed by a team of resources combined to perform a specific task or activity. In other words, resources were the source of the organisation's capabilities, and these capabilities were the origin of competitive advantage.

The types, quantities and qualities of the resources available to the organisation determined what the organisation could or could not do as well as the standards to which they were performed. Nevertheless, developing capabilities was much more than grouping various resources together; capabilities required the involvement and coordination between resources and people, and that was why they were also

known as single or interacting routines depending on the complexity and intensity of required interactions. Grant (1991) also positioned resources and capabilities on the foundations for the long-term strategy of the firm and for the generation of competitive advantage. He based this statement on two premises:

- Internal resources and capabilities provided the basic direction of a firm's strategy and
- Resources and capabilities were primary source of profit for the firm.

Figure 7 shows the process to follow when defining the firm's strategy according to this approach:



Figure 7: a resource and capability based approach to strategy analysis (Grant, 1991)

The sustainability of this strategic competitive advantage depended on four determinants:

- Durability, concerning the rate at which these resource and capabilities depreciated or became obsolete.
- Transparencies, determining what kind of resources were necessary to replicate competitor's competitive advantage.
- Transferability in terms of how easy would be to relocate and implement acquired resources or capabilities; imperfections of transferability were the result of geographical immobility, imperfect information, firm-specific resources or the immobility of capabilities.

- And finally replicability, regarding how easy was to replicate those strategic resources and capabilities.

Collis (1994) classified organisational capabilities into three categories: firstly, those capabilities able to carried out basic functional activities more efficiently than competitors. This meant that organisational capabilities were based on organisational routines and that those routines were the outcome of the firm as an entire system (organisational structure, culture and network of employees' relations). It also implied the transformation of physical inputs into outputs, and therefore efficiency of production and the ability to envisage new ways to create value. Secondly, it considered those capabilities enhancing the dynamism of the activities; Collis cited Teece et al as well as Hayes and Pisano to better explained this section as "the ability of an organisation to learn, adapt, change and renew over time" and "those capabilities used to enable the firm to switch gears from and to". The third category encompasses those capabilities that allowed the company identifying and understanding the intrinsic value of other resources to develop and implement innovative strategies before rivals.

There was not a clear differentiation among the tree types of capabilities as all three referred to the ability of firms to perform an activity more effectively than competitors (be it static, dynamic or creative). Besides, it was unfeasible to develop a detailed and excluding list of capabilities within each category as capabilities were infinite in their variety.

## 4.4 Activity Based View

While understanding industry structures was the focus of attention for the strategic management theory in the 1970s, resources became the principal concern during the 1980s, moving towards activity-based organisational competency theories in the 1990s. Michael Porter (1991) provided an original approach to the theory of the firm; he placed activities at the core of competitive advantage. Competitive advantage was consequence of the ability of the organisation to carry out the necessary activities at a total lower cost than competition, or to execute some activities in a distinctive way creating additional buyer value and allowing the company to establish a premium price.

Porter explains how companies generated value for their customers by using the concept of value chain and value system. Porter described the value chain model as “a generic activity template that is used to discompose the firm into the individual activities it undertakes to create value to the customers”. The logic behind the model was that firms were not paid by products as such, but they were compensated by the activities they executed to supply those products to consumers (Porter, 1995).

The value chain was formed by two types of activities; those that directly produced, marketed or delivered the product and those that supported these centre activities. The model was used to better understand the value generated by the activities within the firms as well as benchmarking rivals. The analysis sought responses for questions such as; did the activities performed by competitors provide more value or involve less cost? Did they perform activities more efficiently or differently then others? If that was the case, the next step was to question why and how they did it and if this advantage was due to specific activity drivers.

Porter (1998) described activity drivers as “levers that managers can manipulate to improve firm value creation”. He suggests using activity drivers in two ways: to improve the efficiency and effectiveness of individual activities and to increase the fit at the activity set level”. Porter warned that executing firm strategy using activity-based approach implied more than selecting an attractive position and modifying the pertinent drivers to obtain the desired objectives. Managers faced two major challenges during this process; balancing multiple drivers across several activities (drivers may interact with other drivers in the same activity and/or across other activities or organisations), and implementing the desired objective within the specific context of the organisation.

Activity-based view supported the improvement of the range of activities used by the organisation over the evaluation of the resource stock level required to move into new markets which was defended by the RBV theory (Porter & Siggelkow, 2001). The benefits and challenges of this theory were explained by Johnson et al (2003):

- This view related the macro and micro environment, something that was lacking in previous approaches.

- Overcoming previous focus on structure and diversification and adding considerations of strategic-decision making and change.
- Transferring research findings into organisational actions more directly.

Among the challenges;

- Not in all cases was possible to directly link micro activities analysis to organisational performance.
- This approach was not very effective when seeking an insight and knowledge beyond the specific context.
- Micro-studies were constrained in terms of scope.
- Some of the results obtained during the research were just theoretical rather than real strategic activities.

## 4.5 Knowledge Based View

Spender (1996) added a supplementary consideration; as the source of all tangible resources rested outside the organisation, competitive advantage was more likely to be developed via intangible firm-specific resources or knowledge, which made possible to enhance value in a personalised and distinct manner. This approach represented a distinct shift from the resource-based perspective to a knowledge-based view of the firm.

According to the knowledge-based view, organisations were producers, storehouses and integrators of knowledge (Grant, 1996), and consequently marketable products and services were the final outcomes of the successful use of value-creating knowledge. Following this logic, organisations competed on the basis of their capabilities to generate and apply knowledge efficiently and effectively; the value creation capability of an organisation did not depend on its physical or financial resources but on the set of intangible knowledge-based resources it owned. This approach benefited especially managers seeking improvements in areas such as interpretative flexibility for firm's achievements and processes, boundary and interactions management, identification of institutional influences as well as using knowledge as component aim-orientated activity rather than abstract "knowledge about" (Spender, 1996). Ranft and Lords (2002) highlighted that those organisations in possession of rare organisational knowledge

associated with the generation of value, stood a good chance of developing and sustaining competitive advantage in the market place. Nevertheless, they were aware that gaps existed within this theory as it did not address the fact that knowledge-based resources were socially complex and might not survive an acquisition and transferring process.

## 4.6 Competence Based View

Not satisfied with the direction followed by the RBV, authors such as Prahalad and Hamel (1990) and Teece et al (1997) developed a new concept based on the organisational competences. Prahalad and Hamel (1990) believed that long-term competitiveness depended on the ability of the firms to produce at lower cost and more rapidly than competitors. This was only possible if managers were able to consolidate corporate owned technologies and skills into competencies that allow organisations to adapt to fast changing environments.

They defined core competences as "the collective learning in the organisation regarding how to coordinate diverse production skills and integrate multiple streams of technologies". This definition could be broken down into a more comprehensive explanation; harmonising streams of technology, followed by communication, involvement and deep commitment to work across organisational boundaries (different levels of people and functions), which was then translated into coordinated work that facilitated the delivery of value. Following this definition, core competences needed to:

1. Provide potential access to a wide range of markets.
2. Make a considerable contribution to the perceived customer value of the end product.
3. Be difficult to copy.

Resources and core competences were characterised by a different focus; core competences did not depreciate over time but enhanced as they were used and shared, and consequently it was important to nurture and protect them as knowledge diminished if not used (Prahalad and Hamel, 1990). Leonard-Barton (1992) warned that environmental changes and technological discontinuities helped develop or terminate existing competences in an industry, and therefore it was necessary to adopt a dynamic view of the competences. She identified four dimensions at the core of each competence: technical systems, skills and knowledge base, managerial systems and, values and norms. Hagan (1996) followed the same idea when stating that competitive advantage could not be obtained just through product leadership or

marketing superiority but it also requires acquiring, possessing and applying the know-how. The second difference between both theories was presented by Teece et al (1997); according to RBV, a firm was more successful than rivals if it controlled more effectively and/or efficiently its VRIN resources. The competence-based view centred on the idea that a firm was more successful than the competition if it could utilise the available resources more effectively and/or efficiently than others.

Teece et al (1997) went one step backwards when describing competences as "firm specific assets assembled in integrated clusters spanning individuals and groups so that they enable distinctive activities to be performed, these activities constitute organisational routines and processes". Consequently, core competences were "those competences that define a firm's fundamental business as a core". Teece et al (1997) stated that core competences, to be effective, needed to be embedded within the organisational processes. Being embedded implied that they were built up by assets that the firm owned and by the evolutionary path the firm followed. This idea could be summarised into three words: processes, positions and paths. Processes related to organisational and managerial operations covering aspects such as coordination and integration of activities (static dimension), learning (dynamic dimension), and reconfiguration (transformational capability). Positions referred to the technical, financial, reputation, institutional and market assets owned by the firm. And paths suggested that the future of the organisation depended on its history, current position and technological opportunities.

Petts (1997) took a different approach when analysing the competitive environment. In his opinion, firms competed at different levels: end products, core products and core competences. This was the first attempt at associating core competences with core products. He provided a list with the attributes that core competences needed to fulfil based on this approach:

1. Complexity: they possessed a group of people using various technologies.
2. Invisibility: they were not easy to identify.
3. Inimitability: they were difficult to replicate.
4. Durability: they had longer life than mere products.
5. Appropriability: they were company and context specific.
6. Non-Substitutability; they were irreplaceable by an alternative competence.
7. Superiority; they were undoubtedly better than similar competences possessed by rivals.

Major et al (2001) and Freiling (2004) made allusion to other two differences between RBV and the competence-based approach: The RBV suggested that resources were strategically important if they created value for the customer (inside-out orientation). Instead, competences were market-orientated; they were the proactive means to bridge the gap between the market and the organisation (outside-in orientation). The second difference was closely linked to the previous one; while RBV identified competitive advantage with a unique mix of firm's resources combined for the development of a product, the core competence view took the logic one step further acknowledging the competences behind the firm's ability to combine, coordinate and convert generic resources into a competitive advantage.

Sanchez (2005) and Ljungquist (2007) referred to the lack of agreement on the concept of core competences; Sanchez (2005) explained that the lack of consistency on the meaning was primarily due to the use of different terminology for similar concepts, the undifferentiated use of it at distinct levels of activities in the firm, and the adoption of a static view in most cases. Ljungquist (2007) also critiqued the difficulty to empirically identify core competences within the organisational context, and advised companies to look for the most suitable methodology for them (Boguslavska & Kvedaraviciene, 2009).

## 4.7 Dynamic Capabilities Based View

Leonard-Barton (1992), Collis (1994) and Teece et al (1997) were some of authors that criticised the RBV approach for being static and not including the influence of the external environment over the firm; they defended that winners in the market were those with timely, responsive, flexible characteristics as well as rapid product innovation processes and capable of managing and coordinating their internal and external competences efficiently. In stable environments, there were external changes but these were foreseeable and the rate of change was rather low. Unpredictable events and market discontinuities were the norm for dynamic environments which required a more active approach from the organisation. The term dynamic capability encompassed two key aspects (Teece et al, 1997):

1. The term dynamic made reference to the capacity to renew competences in relation to the changing business environment
2. The term capabilities focused on the critical role of strategic management in adapting, integrating and reconfiguring internal and external organisational skills, resources, and operational competences to match up the requirements of changing environments.

The following statements represent different interpretations of the term along the years but all authors were consistent in the same principles; the need to develop higher-hierarchy organisational capabilities that renovate functional routines and manipulate resource and capability reconfigurations:

“The capability to develop or innovate faster and better” (Collis, 1994). This definition emphasised the importance of learning to learn capabilities while surpassing any static consideration.

“The firm’s ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments”. “The capacity to renew competences so as to achieve congruence with the changing business environment by adapting, integrating and reconfiguring internal and external organisational skills, resources and functional competencies” (Teece et al, 1997). Both definitions implied seeking new and innovative ways of achieving competitive advantage in order to face external environmental challenges.

“The organisational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die” (Eisenhardt & Martin, 2000). This statement referred to the need for companies to be proactive if they were to take advantage of the opportunities offered by the market place.

“Learned and stable pattern of collective activity through which the organisation systematically generates and modifies its operating routines in pursuit of improved effectiveness” (Zollo & Winter, 2002). They believed that the evolution of organisational capabilities remained closely associated with the learning mechanism used by the firm.

“The capacity of an organisation to purposefully create, extend or modify its resource base” (Helfat and Peteraf, 2003);

“Capabilities that operate to extend, modify or create ordinary capabilities” (Winter, 2003). For him, dynamic capabilities are highly patterned and costly activities that required special and radical efforts.

Figure 8 represented a conceptual approach to better understand the relationship among the different aspects involved in the process of developing dynamic capabilities:

Figure 8: Conceptual approach for the development of the dynamic capabilities framework (modified from Sharifi & Zhang, 1999):

Eisenhardt & Martin (2000) believed that dynamic capabilities were necessary but not enough to create competitive advantage. The view of dynamic capabilities provided a more realistic theory of the firm nevertheless it also needed to be critically analysed;

The ability to change was the characteristic that unified all definitions; without it, it would have been difficult to develop and sustain competitive advantage for long-term periods. The ability for organisational change was embedded in all dynamic capabilities nevertheless this dynamic approach needed to be adopted by managers and integrated all across the organisation in order to be effective (Oxtoby et al, 2002, Helfat & Peteraf, 2003 and Andreeva & Chaika, 2006). The dynamic capability analysis also applied to regions as regional competitive advantage as it was centred on the resource configurations, and consequently those needed to be renewed over time to maintain this advantage (Harmaakorpi & Uotila, 2006). Cepeda & Vera (2007) warned that some of the definitions were too rigid and assumed that dynamic capabilities were always positive and source of competitive advantage; “if the firm has dynamic capabilities, it must perform well, and if the firm is performing well is because it has dynamic capabilities”. They proposed that dynamic capabilities were thought not as activities that affected directly the performance of the firm, but directly contributed to the outcome of the firm by influencing its functional capabilities.

Dynamic capabilities were built rather than acquired in the marketplace, and they were also path dependent; dynamic capabilities were formed and shaped by the decisions and actions adopted by the organisation throughout its history. It was important to consider the implications of path dependency, not

only to acknowledge what opportunities were available to the organisation not only at that time but also in the future (Ambrosini et al 2009, Chen & Lee 2009). Following this idea, learning was believed to be the base of dynamic capabilities which would lead their evolution.

Ambrosini et al (2009) stated, that in order to be useful, dynamic capabilities had to be valid for both stable and dynamic environments and thus it modified the first classification provided by Collis in 1994; capabilities which were the resource base itself. Those capabilities that were modifying the existing resource base, and finally by those capabilities which were creating or extending the existing resource base and eventually creating a "higher order" or learning capabilities.

Ambrosini et al proposed three types of dynamic capabilities: incremental dynamic capabilities, renewing dynamic capabilities and regenerative dynamic capabilities.

- Incremental Dynamic Capabilities: this concept was based on the idea of continuous improvement and resource base adaptability, valid for stable as well as dynamic environments.
- Renewing Dynamic Capabilities; these capabilities were more appropriate for dynamic environments as they allowed the rent to stream by refreshing and renewing the nature of the resource stock rather than incrementally adapting it.
- Regenerative Dynamic Capabilities; they referred to the renewal of capabilities when current capabilities became inefficient; and extension or modification of the existing resources was not enough to deal with highly volatile environment and a new resource base became necessary.

Nevertheless, this theory did not satisfactorily specify how firms obtained competitive advantage and what capabilities made that possible in fast changing environments (Zhou & Li, 2009). Later on, dynamic capabilities evolved into other concepts such as flexible and agile organisations.

## 4.8 Strategic Flexibility

Early contributions on strategic flexibility focused on resource flexibility and organisational flexibility on applying those resources to define new direction. From the 1990s onwards, strategic flexibility centred on the ability of the firm to make decisions in response to environmental changes.

Wang & Xianyong (1995) described flexibility as "the character and capability to adapt alternation". This definition based on two dimensions, one temporal and the other intentional; the temporal dimension

encompassed ex-ante activities which allowed organisations to prepare in advance for future transformation, and ex post activities which included those adjustments undertaken after an event occurred. The intentional dimension was closely related with the strategy followed by the firm; offensive or defensive. The crossover of the two dimensions helped to understand the real nature of company's strengths (see Table 2).

Table 2: Flexibility as an integrated framework (Wang & Xianyong, 1995)



The overall flexibility of the firm incorporated both engineering flexibility and organisational flexibility; this had a positive impact on aspects such as innovation ability, changing market adaptability as well as survival ability (Wang & Xianyong, 1995). Hitt et al (1998) was more specific with regards to the strategic actions required to compete in highly volatile environments; they suggested the rethinking of adopted strategic actions, organisational structure, asset deployment, used communication systems, corporate culture and investment strategies. They talked about strategic flexibility as the means to achieve competitive advantage and they proposed a framework sowing the process of how to build strategic flexibility (see Figure 9).

Modern view aimed to achieve structural as well as organisational/strategic flexibility (Englehardt & Simmons, 2002). Sherehiy (2007) defined organisational flexibility as the "organisation's capacity to adjust its internal structures and processes in response to changes in the environment". Nevertheless, the proposed different approaches to organisational flexibility are too general to help identify any concrete dynamic capability or understand the dynamism of the organisation.

Figure 9: Building Strategic Flexibility and Competitive Advantage (Hitt et al, 1998)

## 4.9 Agile Organisations

Kidd (1994) was one of the first scholars to use the term agile organisations when referring to those organisations able to unite processes and people with advanced technology in order to satisfy customer demands of high quality products and services in short periods of time. Early definitions of the term stressed responsiveness as the main attribute; “ability to accelerate the activities on critical path and… time-based competitiveness” (Kumar & Motwani, 1995)

Goldman et al (1995) considered this view too narrow and believed that there were other considerations such as people, skills, knowledge and experience. They presented four main strategic dimensions that emphasised the success of agile competitive capabilities: enriching the customers by delivering value solutions instead of products, collaborating to enhance competitiveness, organising to master changes and enhancing the impact of people and information.

Each of these dimensions was further explained by McGaugey (1999):

- Enrichment of customer value implied reinforcing customer orientated processes in such a way that customers perceived an additional value.
- Cooperation referred to inter and intra-organisational dynamic interaction of individuals and groups which changed over time and encompassed activities such as sharing information with and among companies as well as integration of businesses systems and processes.
- Master change and uncertainty: in this case, organisations needed to be flexible enough to reorganise its human and technical systems as a means not only to accommodate external changes but to take advantage of new opportunities.
- Impact of people and information: agile organisations needed to promote creativity which required the promotion of free flow of information, exchange of ideas and collaborative empowerment. In most instances, it also implied abandoning hierarchical and rigid models and moving towards more flexible structures with an emphasis on results.

Based on these dimensions Yusuf et al (1999) defined agility as follows; “the successful exploitation of competitive bases (speed, flexibility, innovation proactively, quality and profitability) through the integration of reconfigurable resources and best practices in a knowledge-rich environment to provide customer-driven products and services in fast changing environments”. This definition implied that organisations could rapidly fulfil customer orders; could launch new products frequently and in a timely manner; and they were able to promptly get in and out of its strategic alliances.

Dove (1999) believed that agility was not only about fast response but also about being proactive; “the ability of an organisation to respond efficiently and effectively to both proactive and reactive needs and opportunities on the face of an unpredictable and uncertain environment”. In line with the same idea, Schonsleben (2000) pointed out the importance of knowledge for any organisation that wanted to be agile. Developing and distributing knowledge made it possible to build flexible staff capable of responding to unexpected shifts in demand and adopting a proactive approach towards total customer service. Hooper et al (2001) summarised previous views by explaining that the key for successful agile organisations was to guarantee that it competed effectively with rivals against order qualifiers and improved its offering of total solutions at the level of order-winners.

Van Hoek et al (2001) developed a table that helped compare traditional and agile approaches as well as identify some of the elements to consider in line with each view following the dimensions identified by Goldman et al (see Table 3). Agile organisations thought to be dynamic, context specific, change-embracing and growth orientated entities. Dynamic because the methods used to achieve agility at that time might not be effective tomorrow; context-specific because the marketplace determined the level of agility required; change-embracing because it provided the courage to change and growth orientate as it focused on results (Swarfford et al, 2006).

Table 3: Comparison between the traditional and agile approach (modified from van Hoek et al, 2001)

The definitions gathered by Ganguly et al (2009) highlighted the impact that external dynamic changes had on the internal processes of the organisation:

“the ability of a firm to redesign their existing processes rapidly and create new processes in a timely fashion in order to be able to take advantage and thrive of the unpredictable and highly dynamic market conditions” (Sambamurthy et al, 2003).

“The ability of a firm to dynamically modify and/or reconfigure individual business processes to accommodate required and potential needs of the firm” (Raschke and David, 2005)

"The ability of an organisation to detect changes (which can be opportunities or threats or a combination of both) in its business environment and hence providing focused and rapid responses to its customers and stakeholders by reconfiguring its resources, processes and strategies" (Mathiyakalan et al, 2005)

## 4.10 Conclusion

The conclusion of chapter three denoted that clusters enhanced the competitiveness of regions, nations and cluster members. It also highlighted the fact that to understand clusters, it was necessary to comprehend the individual organisations within them as well as their characteristics. Combining these two views, chapter four showed the different views on what were the key considerations within companies to develop and maintain competitive advantage.

The chapter indicated that traditional theories related sustainable competitive advantage with decisions at higher level (strategy and structure), while modern approaches considered that sustained competitive advantage was the result of decisions at a lower level. In order to have a better understanding of what this means, the chapter proposed a chronological analysis of the various theories of the firm. This analysis would suggest that resources and drivers were too simplistic and difficult to identify due to the infinite number of them that could exist in each organisation.

Core competences were described as too complex and difficult to acknowledge down to the lack of consistency of the concept itself. The definition provided by Collis referring to capabilities seemed to be the most inclusive view; it embraced all resources, and consequently knowledge, as well as the necessity to include an interaction and integration between functions and people which was a similar view to the value proposition proposed by Porter. This would suggest that capabilities should be used as the primary element when acknowledging the characteristics of the organisation. Nevertheless, the capability-based view was in fact a static view and did not contemplate the influence that changes in the external environment might have over the organisation; authors such as Leonard-Barton (1992), Collis (1994) and Teece et al (1997) also pointed out that being responsive, flexible and innovative were key for the development of competitive advantage. This approach matched the views gathered within chapter three and consequently suggested the need to look at dynamic capabilities in more detail,

Dynamic capabilities had numerous interpretations along the years but in all these seemed to be a common theme; the need to develop higher-hierarchy organisational capabilities that renovated functional routines and manipulate resource and capability reconfigurations. Dynamic capabilities were built rather than acquired in the market place indicated that were the result of the decisions and actions adopted by the organisation along its history. There were various theories that tried to explain how dynamic capabilities could be a source of competitive advantage but they tended to be vague when providing specific examples or a list of specific dynamic capabilities.

Flexibility and agility were other forms of dynamism within organisations; these approaches pointed out that in order to develop overall dynamism, operational and strategic considerations needed to be taken into consideration. Agility represented a more detailed vision of dynamism than flexibility and that was why agile characteristics were considered as the ideal basic elements to use when evaluating the characteristics of the individual organisations.

In summary, the chapter showed that capabilities provided the more detailed view on the company's characteristics. These capabilities had to be considered at both higher (strategy and structure) and lower (operational) levels. In addition, they had to be able to cope with change of the external environment and be specific. As result of the literature review, dynamic capabilities were selected as the basic element when analysing companies. In order to identify specific capabilities an agile approach was adopted which would be later applied to both levels of the organisation; higher levels, covering the strategic and structural aspects of the organisation, and the lower level covering the different operational levels.

# *Chapter 5: Dynamism of Organisational Structures*

## 5.1 Introduction

It was discussed that competitive advantage was not the result of a single resource but the combination of a number of them into capabilities. It was also suggested that, in contemporary markets, 'capabilities' as were described by Grant were not sufficient and organisations needed to seek dynamic capabilities that allowed them to rapidly adapt to fast changing environments. These dynamic capabilities had to be considered at both higher and lower organisational level. As result, this chapter aimed to get a better understanding on how the structure of the organisations had changed after the first industrial revolution and determined the link between their structure and the strategic way to deploy their capabilities.

It was generally recognised that structure was the superior composition of relations (Bunge 1979, Johannessen 1996, Johannessen et al 1997). Checkland (1999) believed that organisational structures conceptualised and reproduced aspects such as system thinking, relations between the elements, interrelations as a whole to compose a unit as well as the characteristics of the whole. Organisational structure was considered to be one of the main drivers of change as it became the skeleton for most organisational decisions and processes (Wang and Ahmed, 2003).

The structure of organisations had closely followed the evolution of modern economy. Speed, initiative and change replaced other characteristics such as specialisation, standardisation and control. These new practices required a different set of organisational norms, nevertheless this did not mean that previous organisational models suddenly disappeared or were likely to do so; the best organisations were those able to identify, combine and exploit principles of both models to their best interest. It was not unusual for some organisation to have more than one structural configuration; consequently, some parts of the organisation could temporarily shift from one structural form to another depending on the different scenarios when looking for a new or faster means to resolve existing problems. (B. Keats & H.M O'Neill, 2001)

## 5.2 Historical Perspective of the Evolution of Organisational Structures

Organisations adapted and evolved along the history and so did their structures. Many were the authors who tried to explain what the origins of organisational change were and which the best fit would be according to the surroundings and various scenarios. There were different views on what causes organisational structures to change:

### 5.2.1 Structure follows Environment

The First Industrial Revolution at the beginning of the 18th Century represented, the end of large feudal systems run by large families and, the beginning of the automation of small industrial plants primarily dedicated to the transportation and communication (telegraph) industries. The expansion of European and American industrial and commercial production led to the Second Industrial Revolution, around 1850, which demanded some thought on how to organise and manage these larger and more complex organisations; highly hierarchical and control based military forms were adopted as the means to increase the level of production as well as to improve the efficiency of processes (Bruland, 2006). Max Weber was one of the most prominent researchers of the period, he believed that bureaucracies represented the ideal organisational form and consequently it had to be arranged into specific functions and parts where each worker had clearly defined duties and, that it needed t9 facilitate a well structured streamlined process. Gerth & Mills (1946) quoted Weber when he stated “bureaucracy is not a synonymous of inefficiency: quite the reverse, it is the supremely efficient way of conducting administration. This is why it has been adopted by capitalistic firms and in every institution. An institution served by a bureaucracy will out-perform its competitors, and prevail in the struggle for survival: bureaucracy has spread and continues to spread because of its survival value for social institutions”.

Another significant contributor to the theory of the firm in the early 1900s was Henri Fayol; he believed that the administration function within the organisation required a more significant role and therefore it had to be distinguished from all other functions. In addition, he proposed that all employees participated in it to a certain extent but being the dominant role at higher organisational levels.

Administration became the art of managing people (Fayol, 1908). Frederick Taylor (1911) introduced the "science of work" in his book The Principles of the Scientific Management taking principles introduced by Weber and Fayol and implementing them to the shop floor.

Preceding WWI, organisations tended to be small in size, managed by the founder and normally centred on one or two main products. At that time, structures were designed following simple rules according to what they thought was a unique 'best way' to structure an organisation; this idea more extensively developed by Burns and Stalker (1961) categorised all organisations into two types depending on the level of centralised authority. Those organisations showing high levels of centralised authority, formalised policy statements, hierarchical communication and relationship patterns were defined as mechanistic organisations, while those displaying lower levels were classified as organic organisations. Joan Woodward (1965) followed the views of Burns and Stalker and expended them when she suggested that effective firms were those whose structure fit their technology and consequently, technological change would force structural change. Considering the production systems and the technology used at that time, the most effective organisations followed the mechanistic approach. Organic types of structures only benefited those organisations with customised or non-routine technologies. This view would later, in the mid-1970s, evolved into the contingency approach; this theory considered that organisational structures and processes were shaped by contingencies of technology, size, environment and strategic choice (Child, 1972). Authors such as Galbraith, Mintzberg, Starbuck and Nystrom were central to this view (Rainey, 2009).

During this period globalisation increased, national economies became increasingly complex and interdependent opening new businesses opportunities. As result, those relatively small organisations started expanding their product lines and engaging in diverse markets. Lawrence and Lorsch (1967) considered necessary to add two structural dimensions to adequately reflect the increasing complexity of the environment in terms of differentiation and integration. Differentiation identified the division on functional or geographical subunits, while integration indicated the level of coordination among the different subunits. For Lawrence and Lorsch, the most effective organisations were those which have the right degree of differentiation and integration according to the environment. James Thompson (1967) argued that a function of both technology and environment was necessary. In his opinion,

organisations grew by adding elements of the external environment into their internal structure. Those external elements represented critical events which required change, "fitness for the future" or effectiveness.

In the 1980s, Schein (1988) established a three-dimensional framework as the way to categorise organisational structures:

- Hierarchical dimensions showed power ranks similar to organisational charts
- Functional dimensions considered the different types of work/activities to be done
- Inclusion and centrality dimensions indicated the degree to which an individual was closer or farther from the core of the organisation.

### 5.2.2 Structure follows Culture

Selznick (1957) considered that role of structure was far more important than just defining functions; structures were a means of securing social legitimacy. In his opinion, structural forms reflected organisational core values such as risk-taking attitude, expansion approach, etc. This view was lately supported by Meyer and Rowan (1977) who defended that external social forces were as powerful as internal elements of the organisation.

### 5.2.3 Structure follows Strategy

#### i. Alfred Chadler

Alfred Chadler (1962) followed a different approach to justify structural changes; changes in strategy. He observed that after both worlds, businesses were likely to grow in expected phases; first volume, then geography, followed by integration (vertical and horizontal) and finally through product diversification. According to Chandler, the structure followed the strategy as organisations would not modify their structures unless inefficiencies in the system force them to do so.

Chandler defined 4 stages of the development in organisational structure according to their strategy (Miles & Snow, 1978);

Type I Organisation: owner-managed and highly hierarchical. It was small in size and avoided complexity when possible. Attracting professional managers was the typical way to move organisations beyond this type as they attempted to make a better use of existing resources.

Type II Organisations: a model divided in functional lines and controlled centrally. This type of organisation normally produced a limited range of products with a common core technology; in other words, they provided standardised products and services on a high-volume basis to relatively stable but growing markets. Being a vertically integrated organisation did not facilitate easy access to new markets or product areas; the organisations tended to split into functional lines becoming specialist in products or markets. The disadvantages of this model become evident when traditional markets reached saturation levels; organisations used their available resources succeeded in product or market innovation, growing their product lines considerably and expanding geographically, but failing in the administration of the organisation as a whole.

Type III Organisation: Excessive division had led to organisations with too many managers and lack of overall control, eventually losing control over funds, inventories, etc.

Type IV: this type was a natural evolution of previous models combining different characteristics of the last two types and showing a mixed structural pattern.

Miles and Snow also believed that the key to performance was to have a good internal fit between the different elements of the organisation's strategy and structure. Following this view, it was easy to understand how large organisations simultaneously adopted multiple forms of structures or customised standardised forms to their particular needs.

Keats and Hitt (1988) provided an opposite version to Chandlers as they noted cases where the causal flow had been in the opposite direction; structure-strategy. In their opinion the selection of the structure influenced the decision-making pattern of the organisation. Later authors such as Mintzberg and McKinsey focused their interest on understanding the interrelationship among the three elements (environment, structure and strategy) instead of their causal connection. This new consideration was important as it established that organisations were environmentally sensitive, and their structures and strategies changed in order to secure some chance of long-term survival.

### ii. Mintzberg

Mintzberg believed that it was necessary to select and to combine different elements of the structure if internal consistency and compatibility with the organisation's context was to be achieved. He divided all organisational aspects into 5 basic elements; strategic apex, technostructure, middle management, support staff and operating core (see Figure 10). The relative size of the elements would change depending on which (ideal) organisational form they were consistent with:

- The operating core represented the people in the organisation who generated inputs for production or transform them into outputs to be sold or distributed.
- The technostructure was charged with creating and administering the standardisation of processes within the organisation (quality control, trainers, recruiters, production schedulers, etc)
- The strategic apex had a supervisory role looking at managing the influence of the environment over the strategy.
- The middle line was formed by the middle managers and supervisors
- And the Support Staff took into consideration all other activities such as industrial relations, mail-room, legal counselling, etc.



Figure 10: the five basic parts of an organisation (Mintzberg, 1979)

Each of these five parts pulled the organisation in a specific direction favourable to them; strategic apex promoted centralisation while support staff sought collaboration, the technostructure was be interested in standardisation, the middle management encouraged specialisation or divisionalisation and finally the operation core endorsed professionalisation.

Mintzberg also presented a model describing the characteristics of the ideal structures, he considered these structures as ideal forms because they stand for appropriate 'fits' between the design parameters of the organisation and because these are associated with what he called contextual factors (Mintzberg 1979, Drago 1998). Each structure was distinguished by the importance of a characteristic 'key part' and a particular coordinating mechanism; in other words, each of the ideal structures correlates to a unique context, consequently the organisations with the adequate fit between the structure and the environment would be the more effective ones; the closer a structure was to the ideal structure, the more effective it would be (see Table 4).

Table 4: Description of Mintzberg's ideal structure (Drago, 1998)

Simple Structure: showed a centralised model led by the strategic apex and focused on supervision (controlling management style) and decision-making where communication was vertical along formal lines and following the hierarchy of management. The activities were authority tied tasks and production processes were simple and easily to oversee by the CEO. Low standardisation of processes implied a limited presence or influence of the tecnostructure and support staff elements.

Machine Bureaucracy: in this case, the technostructure adopted the central role which translated into greater levels of standardisation and decentralisation. According to Mintzberg, this type of structure was the most efficient form as the technostructure was in charge of process standardisation and the middle management would take care of the conflicts resulting from rigid departmentalisation and employee dissatisfaction.

Professional Bureaucracy: this form promoted vertical and horizontal disintegration by maximising the independent action of the operating core and standardising their skills. This was ideal for stable organisations requiring dealing with complex customer problems; the structure relied on the support staff as the dominant element, which was described as a self-managed workforce capable of balancing leadership and organisational commitment.

Divisionalised Form: the structures tended to be split into various quasi-independent market facing units; it represented the first attempt of promoting the sense of activity ownership. Middle-managers were in charge of the different units that acted autonomously at strategic and operational level, while the coordination among the different units was done by a centralised team of staff and experts and through the standardisation of the outputs obtained by the divisions. Within each division, the machine bureaucracy model was widely used by the division heads.

Adhocracy: decisions were made taking into consideration the advice of experts and not authority. Innovation, creativity and knowledge adopted a central point in the model; groups of experts collaborated to generate new ideas while the management acted as coordinator rather than supervisor. Characterised by flexibility and imaginative responses aimed to encourage new trials and experience, nevertheless the limitations of this model became evident when the organisations faced standard production problems as reactions were slow and costly.

In any case, Mintzberg warned about embracing these structures as absolutes. He considered them as diagnostic and design tools for organisations which were looking for new ways of improving their efficiency. Mintzberg stated; “An organisation cannot be all things to all people. It should do what it does well and suffer the consequences” (Gould, 1999). Under this view, management style was critical when determining the structure of the organisation and how it interrelated with its members; the appropriate management style could drive and encourage people to take action, be open to new ideas, technology or internal changes. Mintzberg acknowledged ten managerial roles which described different sets of behaviours or roles within the business environment (Mintzberg, 1973); monitor, disseminator, spokesperson, figurehead, leader, liaison, entrepreneur, disturbance handler, resource allocate and negotiator. These management styles were determined by the managers ability to communicate, control, lead, link and do (Mintzberg 1997), but did not express how managers interrelated with other staff members in order to develop these management styles. These characteristics were summarised in the following behaviours:

1. Balanced self-management, leader and committed
2. Management by example
3. Coaching and inspirational
4. Positive attitude to change and new ideas
5. Promotion of the sense of ownership
6. Encourage new trials, experiences and knowledge
7. Tolerant behaviour
8. Authority to task

The success to implement any management style was linked to the organisational culture. According to Mintzberg (1983) “culture is the soul of the organisation; the beliefs and values, and how they are manifested. I think of the structure as the skeleton, and as the flesh and blood. And culture is the soul that holds the thing together and gives it life together”. Mintzberg and Quinn (1991) summarised this approach in the following statement; “strategy formulation and implementation are intertwined as complex interactive processes in which politics, values, organisational culture and management styles determine or constrain particular strategy decisions”.

### iii. McKinsey

The model introduced by Peters and Waterman considered that a multi-dimensional approach was necessary to achieve an effective implementation of a strategy. Seven factors were mentioned as critical for the effective execution of the organisational strategy (R.S Kaplan, 2005):

Strategy: according to this model the positioning and actions adopted by the organisation were the result of responses to or anticipation of changes to the external environment. Implemented measures sought competitive advantage.

Structure: it represented the way in which tasks and people were specialised and divided, hierarchies of authority, grouping of relationships and functions and also acted as the coordination mechanism.

Systems: the formal and informal practices used to administer the organisation, among them; management control systems, performance measurement and reward systems, planning, budgeting, resource allocation, etc.

Staff: this area did not only cover the people, background and competencies but also how the organisation selected, recruited, trained, socialised and promoted their employees.

Skills: the distinct characteristic of the organisation. Skills determined what the organisation did best in areas such as processes, technology, customer relationships, etc

Style/Culture: the type of management covering aspects such as what they focus their attention on, what questions they asked to the employees, how they made decisions as well as what the promoted values and culture were.

Shared Values or Subordinated Goals: it included the fundamental set of values and rules shared by the organisation. These values were represented in the organisations' mission, vision and value statements.

The model established that successful organisations were those able to achieve integrated harmony among three 'hard Ss' (strategy, structure and systems) and four 'soft Ss' (skills, staff, style and shared values); in other words, all elements were interrelated and pursued common goals. The model was used as a diagnostic and regulatory framework for organisational alignment.

### 5.2.4. The Learning or Knowledge based Organisation

Penrose was the first scholar to acknowledge the role of knowledge within the business organisations; knowledge not only increased productivity but also generated unique business opportunities specific to each individual firm (Penrose, 1959).This view was not fully implemented until the late 1980s when managers became aware of how important flexibility was within the business environment; to be capable of adapting to a continuously changing environment. Increasing global competition made company's survival insufficient and the focus was redirected towards excellence. Those organisations achieving excellence increased their chances of survival.

The learning organisation idea became popular when Senge published his book, *The Fifth Discipline*, in 1990. He defined a learning organisation "as the organisation that is striving for excellence through continual organisational renewal". According to him companies generated competitive advantage by exploiting both individual and collective learning; in order to make this possible, people needed to disregard their old ways of thinking or mental models and be open to work with others (personal mastery) as well as comprehended how the organisation worked (system thinking) in order to put a plan together (shared vision) and then collectively achieved that vision (team learning). Chris Agyris, Donald Schon, and Margaret Wheatley were other authors associated with this concept.

Drucker (1993) later on focussed on the utility of knowledge and, he suggested that knowledge could be a source of competitive advantage if used in a systematic and organised way. In order to be effective, learning organisations required a new perspective on how they should function, be managed, and cope with changes. Hitt (1996) modified McKinsey's model by adding an eighth element; the synergistic team. A synergistic team was the result of a group of individuals that not only work together but they learnt together displaying a level of collective knowledge greater than the sum of the knowledge of the individual members.

Knowledge responded to market forces which implied dealing with uncertainty and change (Lustri et al, 2007); this involved creating the right context for organisational knowledge creation and management achieved by the analysis of the external environment and relationships, structures as

well as managerial policies and actions. According to them, the model characterising Knowledge Management was based on 6 steps:

- Meaning and creation of shared vision of the purposes of knowledge development
- Information provision
- Induction to internal processing for individual knowledge creation
- Conversion of individual knowledge into group learning
- Knowledge dissemination to other organisational level
- Practical application of knowledge

Zheng et al (2010) as Senge (1990) believed twenty years before, that knowledge management was directly related to the organisational culture, structure and strategy as knowledge was created and utilised in accordance with a set of cultural norms, embedded relationships, and reflected in a strategic priorities. Their view implies that knowledge acted as the interface to the different departments of the organisation and constituted a critical dimension during the design of an organisation.

### 5.2.5. Information & Communication Technology Structures

In the 1970s, Galbraith (1973) following the previous steps of Burns & Stalker, Woodward, Hall, Harvey and Lawrence and Lorsch, argued that information was both used and generated by internal organisational processes and therefore it influenced the behaviour and form of the organisation. This idea started becoming relevant as the quality, variety and quantity of goods and services increased and so did the complexity of the information managed and the organisational structures. Galbraith (1977) stated that organisational forms needed to be designed in such a way that all elements of the organisation helped reduce the need of information or increase the organisational capabilities to process more information.

Miles and Snow (1978) introduced the idea of 'organisational fit' which indicated that organisational performance relied on the grade of consistency or fit that managers set up between organisational and environmental considerations. In other words, configurations of strategy, structure and processes required to be internally and externally consistent (Miles and Snow 1978; 1984).

Figure 11: Organisational design policy variables (Galbraith, 1977)

The followers of this perspective believed that in order to avoid internal friction, organisations necessitated to shape their IT resources to their particular organisational contexts (decision-making processes, size, managerial philosophy, culture, etc) (Karake, 1994). If well used, IT infrastructure became source of strategic capabilities due to (Brown & Ross, 1996):

- It enabled data sharing across function and divisions supporting cross-functional decision making and allowing organisations acting more globally
- It helped the standardisation of platforms and common application which accelerated the development of business applications.

Galbraith (1980) presented three factors that determined the amount on processed information:

1. The degree of uncertainty regarding the task requirements, specially resources and time demands to complete the activity
2. The number of elements necessary for decision making
3. The degree of interrelatedness or interdependence among the elements.

Following the same principles, Gerwin (1981) deduced the positive association between technology and four structural categories: complexity, formalisation, centralisation and configuration. These two

views helped link information and structure but if structure and strategy were related then, information and organisational strategy had to be also related. As an extension of this perspective, information was also connected to processes, systems and people (Galbraith & Kazanjian, 1986). Ciborra (1997) explained how some adaptable organisations used IT to stay flexible in greatly changeable environments; traditional-environment-structures were highly centralised and formalised and consequently failed to capture, process and utilise the data fast enough to be useful, while IT-based structures added the required speed and flexibility to make decisions and take advantage of existing business opportunities. Dibrell & Miller (2002) stated "organisations should be able to change, not being static; organised around networks, not a rigid hierarchy; based on interdependency of partners, not self-sufficiency as well as constructed on technological advantage, not old-fashioned bricks and mortar".

## 5.3 Evolution of Organisational Forms:

Mechanistic or organic were considered as the simplest way to classify organisations and consequently the logical starting point to analyse how the structure of organisations evolved along the years.

### 5.3.1 Mechanistic structures

These structures were developed to operate in stable environments, characterized by being highly centralised with clear hierarchies, top-down decisions and communication processes, high levels of control and bureaucracy, rigid departmental separation and work specialisation as well as lack of knowledge transfer. Hierarchical–Functional forms might show unwanted side-effects; inflexible rules tended to slow down flow of information across functional and hierarchical lines, which combined with excessively specialised work processes discouraged knowledge transfer and speed of response. As the organisation grew, the side-effects became more evident and difficult to counterbalance. Taking into consideration a more dynamic environment, the logical path led to a structural transition were hierarchical structures were replaced by more flexible structures (Wang & Ahmed, 2003).

Directly related to this bureaucratic structure were functional and multidivisional organisations; once markets became more unpredictable, a more sophisticated, decentralised and specialised structure was required; matrix structures represented an inflexion point between the two approaches.

### 5.3.2 Organic structures

They were more complex social entities focused on horizontal collaboration and facilitating cross-functional teams and integration of specialised sources of knowledge. Managers sought to exploit the potential of available human resources by encouraging their employees through individualised job design that stressed personal development and responsibility. Decision-making, control and objectives-setting processes were decentralised and shared at all levels of the organisation, implying an open communication flow throughout the organisation. In summary, this model emphasized individual value-adding awareness, motivation and personal satisfaction combined with high levels of flexibility and development (Givson et al, 2009).

The disparity between the two models was that while the mechanistic model sought to maximise efficiency and production, the organic model aimed to maximise satisfaction, flexibility and development. Mechanistic and Organic forms identified two distinctive approaches to do business, but they could be considered as too general when analysing the structural shape of the organisation. Other forms provided a more accurate representation of organisational structures:

### 5.3.3 Functional, Universal or U-Forms

U-Forms were popular until the WWII as they were considered the optimum form for small to medium sized organisations. This type of organisations were characterised by (Weir, 1995):

- Being functionally organised facilitating specialisation and the division of the labour
- Having a single overall chief executive who was in charge and coordinated all aspects of the business at both strategic and operational levels.
- Different divisions were run by middle management who lacked decision-making power.
- Strongest divisions tended to accumulate a greater amount of resources which did not necessarily take into consideration the most profitable uses.

This model was efficient as long as the organisation remained small in size; when the business grew, the structure would be unable to deal with the high volume of flows necessary to run the system. The lack of delegation generated additional problems associated with the monitoring and evaluation of the corporate performance (Weir 1995 and Johnson et al 2008):

- Increased size and diversity (products and markets) resulted in loss of control as the chief executive was unable to assimilate the great amount of data and to act accordingly.
- Chief executives tended to spend excessive time taking care of operational decisions deferring strategic actions consequently, business opportunities were lost adding pressure on performance.
- Misalignment among the objectives of the middle management and the chief executive's.
- Senior managers tended to ignore strategic issues.
- Coordination among the different department was difficult.
- Lack of fast reaction and adaptability.

### 5.3.4 Multidivisional or M-Forms

This structure was adopted as organisations began growing in size and diversifying their product lines and geographical markets. The main characteristic of this M-form was the division into more autonomous, manageable and specialised units. The units followed the overall strategy of the company but they were free to define their particular set of objectives (Martisons & Martinsons, 1994).

This type of forms were characterised by (Weir, 1995):

- An additional layer of management, the elite staff, which acted as intermediary between the operating division and the head office. Their main responsibility was to manage the majority of the day-to-day activities and to provide an overall picture of the performance of the unit.
- Head office centres on strategic aspects such as long-term planning and financial control
- All divisions were profit-orientated and consequently focused on maximising their capabilities and resources.
- There was an effective monitoring and reward system which recognised and awarded good performance.

- Available resources were assigned by head office following a profit criteria; those division which did not reach established objectives, they saw their resources relocated to more profitable units.

Excessive number of divisions might also have a negative impact on the overall performance. Examples of these inefficiencies were the duplication of roles and tasks, different set of objectives that could lead to a loss of control, as well as fragmentation and non-collaboration situated among the different units as they were occupied with maintaining or increasing their own status.

### 5.3.5 Matrix Forms

This type of structure became popular during the 1970s. It was combining the advantage of both functional and multidivisional models; the functional units aimed to develop economies of scale through specialisation while the project teams concentrated on particular products or markets. The structure showed two axis represented by different units in one of them and different regions or functions in the other. At the same time, each employee was assigned to a functional department and to one project manager, which implied a dual chain of command. Matrix structures aimed to be the response to uncertainty and dynamism of the environment by focusing on specific products and projects (Joyce, 1986)

Johnson et al (2008) listed the benefits of the model as follows: flexibility in terms of mixing different dimensions as well as duration (it could be used on permanent or temporal basis), it also allowed dual dimension and integrated knowledge across organisational boundaries. The matrix form was adopted by organisations which (Givson et al, 2009) required reacting to two or more rapidly changing environments such as technology or markets were subject to great levels of uncertainty and required to process large amounts of data as well as suffered from financial and human resource constraints.

This model was criticised by the ambiguity generated by the assignment of functional and project managers resulting in power struggles and undefined sense of accountability. This had a negative impact on performance and morale.

### 5.3.6 Networks

Networks featured inter-organisational relations at different levels; consequently, it was subject to a great number of interpretations adopting different forms, labels and theoretical backgrounds. Axelsson & Easton (1992) summarised the different interpretations into three main views represented by the following definitions:

- "the total pattern of relationships within a group of organisations acting in order to achieve common goals" (Hall 1977, Van de Ven & Ferry 1980)
- "networks as sets of two or more connected exchange relationships" (Cook & Emerson, 1978)
- "networks are a number of loosely connected organisations which are linked by one or a number of bonds or social relationships" (Aldrich, 1979)

During the 1980s and 1990s, it was possible to appreciate an increase on the complexity of networks;

- "loosely structured arrangement whereby network partners share complimentary and synergistic resources and capabilities as its defining characteristics" (Johanson & Mattsson, 1987)
- "networks are the result of a voluntary inter-organisational cooperation that fosters significant exchanges, sharing, co-development, and enduring commitment as well as reduces search costs and the risk of exposure to opportunistic behaviour" (Gordon 1991, Gulati & Gargiulo, 1999)
- "clusters of firms or specialist units coordinated by market mechanisms instead of chain of commands" (Miles & Snow, 1992)
- "networks constitute the new social morphology of the society, and the diffusion of networking, logic substantially modifies the operation and outcomes in processes of production, experience, power and culture" (Castells, 2000)

Aspects such as market volatility and customer-driven initiatives highlighted the importance of being flexible and the impact of culture started becoming subjects for further research. The variation of the concept required acknowledging the basic fundamentals of this type of collaborations (Nassimbeni, 1998):

1. Networks were constituted by two or more independent organisations which added value to an exchange relationship.
2. The exchange was done on the basis of a "relational contract" which meant that despite being product or service specific, it was a long-term investment and consequently could not be fully specified or controlled by the parties in advance of their execution. Personal relationships and social dynamics were essential for the success of the relationship.
3. Dynamic forms of communication and coordination were developed in order to increase the adaptability and synchronisation of the different activities involved in the project as a whole.

Initially networks were categorised as vertical and horizontal organisations (Piercy & Cravens, 1995); vertical networks were described as value-adding systems able to coordinate the flow of complementary resources from suppliers to end users. Horizontal networks were those organisations in the same industry or more specifically relationships among actual or potential competitors. Cravens et al (1996) considered this view simplistic and distinguished four network categories depending on the volatility of the environmental change and the type of inter-organisational relationship among the various members; flexible, hollow, virtual and value-added. These categories were determined by factors such as the market structure, technological complexity, company's and network's core competencies as well as coordination among the different members.

Following a different approach and using Mintzberg's framework as reference, Nassimbeni (1998) identified three main categories of interrelated organisations based on their objectives, activities and integration method: supply networks, agreements and joint ventures, and regional industrial systems.

### 5.3.7 Supply Networks

This type of networks aimed at achieving synergies between the different operations and independent units. In order to do so, the operating core adopted a central role as the flow of materials was the applied integration vehicle. Harland (1996) defined supply networks as "sets of supply chains encompassing the flow of goods and services from original sources to end customers". The supply network would use of each of the units/organisations as long as they were able to contribute with value-adding operations; once all operations were coordinated and integrated the value of the whole

network would be greater than the sum of the individual members. Competitive advantage was obtained through the concentration of the resources aligned to the development of core competences (Nassimbeni, 1998). The supply relationship between the core-members was managed using an arms-length approach but mutual and stable involvement in the development of products and other areas of the business was the most coherent attitude; cooperation helped create value and reduced transactional costs, among other benefits (Lamming et al, 2000)

Table 5: Initial classification of supply networks (Lamming et al, 2000)



Dyer & Nobeoka (2000) acknowledged that there were different stages in the life of a supply network; the development stage when the ties between the different members tended to be weak and the interactions were occasional. The second stage implied the development of stronger ties between the members; exchanges increased and the interaction among the companies intensified. The latest stage implied strong relationships, enabling the members to create sub-networks within the chain maximising its performance and effectiveness.

### 5.3.8 Agreements and Joint Ventures

In this case, companies were also seeking synergies but they were limited to a single function. The organisations achieved integration by exchanging expertise and skills within the networks units; therefore, it was common to see organisations sharing research and development efforts to attain economies of scale and value-adding activities. Each partner worked on a particular stage of the project, exchanging with the other units their know-how and technological skills. The main characteristic of this type of network was that the agreement among the different parties led to the creation of a new company completely independent from the parent company (Nassimbeni, 1998).

The main challenges of this type of partnership were summarised as follows (Sulej, 1998);

1. Joint Ventures were difficult to direct towards specific goals
2. There was a necessary period of hardship to go through during the formation period
3. Once Joint Ventures began operating they were difficult to manage.

Various authors (Swierczek & Hirsch 1994, Bakerma & Vermeulen 1997, Khalifa & Peterson 1998, Yan & Zeng 1999, Sirmon & Lane 2004) related the formation and success of Joint Ventures to the organisational culture of the parts associated. Swierczek and Hirsch (1994) concluded that in numerous occasions problems were due to misunderstanding and limited compatibility of the cultures embodied in the Joint Venture. Yan and Zeng (1999) stated that culture often influences the way partners made decisions and solved problems.

### 5.3.9 Regional Industrial Systems

Sabel (1998) argue that changeable markets were destabilising the ability of organisations to be self-sufficient and leading them to consider alliances nearby as a way to grow or even survive. He believed that neither structure nor ideology prevented organisations from being aware of their mutual dependency and the potential benefits of working together, and even more, organisations could make internal adjustments to encourage mutually satisfactory agreements. These networks represented a concentration of industrial settlements formed by numerous businesses, related at technical-productive level, and characterised by a dominant type of production. The geographical proximity facilitated interaction and synergy between not only organisations but public institutions and local industrial associations. Similarities in their culture and a common service structures brought organisations closer and facilitated interaction. The main objective behind the strategic synergy was to take advantage of the combined marketing initiatives (Nassimbeni, 1998). In summary it could be said that networks were the origin of a more receptive, adaptive and generative organisation. In this case, organisations sought;

- A strong involvement of their employees.
- A less regulated and dynamic structure.
- Authority based on capability.

- Alliances to efficiently exploit economies of scale.
- Use of teams at all levels to ensure full involvement of employees, especially at the lowest levels.
- Flatter and decentralised structures.
- Focus on the environment.

Table 6: Main characteristics of the different kind of networks (Nassimbeni, 1998)



Dynamic processes followed dynamic structures capable of taking advantage of new opportunities effectively, in order to do so organisations required to change their conventional behaviour and values for a more flexible and fast-reacting attitude; virtual organisations, extended enterprises, concurrent engineering organisations… were some examples of these emerging structures.

## 5.4 Changes on the Emphasis of the Organisation

The evolution of the organisational structures was accompanied by a change in the necessary emphasis to compete in the market place. The next sections represented an effort to identify the main dynamic capabilities driving the change within these dimensions:

### 5.4.1 Strategy

Corporate strategy was defined as “the pattern of decisions in a company that determines and reveals its objectives, purposes and goals, produces the principal policies and plans for achieving those goals, and defines the range of business the company is to pursue, the kind of economic and non-economic contribution it intends to make to its shareholders, employees, customers and communities” (Andrews, 1997).

Along the years the literature focused on various dimensions of the organisations trying to identify the source of their competitive advantage. Two types of organisations characterised modern economies: learning organisations and market-orientated organisations. There was a degree of consensus regarding the necessity for new organic and more dynamic structures to emerge in the marketplace as response to technological and global change (Senge, 1994). This type of organisation required flattened hierarchies, faster decision making as well as responsiveness to their environment and employee empowerment (Holbeche, 1994). This was one view but there were other;

Table 7 represented a chronological evolution of dynamic capabilities within strategy; the table showed how organisations started concentrating their efforts on organisational growth following a customer driven approach supported by the development of employees. Customers were becoming more and more demanding and wanted the best value for money right now, which forced companies to increase their responsiveness and looked for proactive initiatives if they were going to develop competitive advantage. In response, organisations promoted internal and external cooperation as well as integration supported by continuous improvement which helped increase flexibility by creating flatter organisations and allowing faster movement of goods and information. Providing value for money also implied supplying good quality products and considering that companies no longer compete in isolation, suppliers played an important role and consequently quality became an essential consideration when developing supplier selection criteria.

The market evolved into customers and organisations who wanted to be treated as individuals with specific and particular preferences and characteristics which translated into the adoption of build-to-order and customised projects. Companies if they were to exploit the potential of the market and

engage on customer projects, they needed to identify market changes and be vigilant to the rise of new business opportunities; external scanning (market, competitors, and partnerships) developed into a key activity.

Table 7: Identification and evolution of dynamic capabilities regarding organisational strategy

| Dynamic Capabilities | Authors |
|---|---|
| Customer driven | Kid 1994, Yusuf et al 1999 |
| Growth | Collis 1994, Van Hoek 2001 |
| Employee development systems | Collis 1994, van Hoek 2001 |
| Responsiveness | Kumar & Motwani 1995, Teece et al 1997, Sharifi & Zhang 1999 |
| Proactivity | Wang & Xianyong 1995, Dove 1999 |
| Continuous learning | Hitt 1996, Ambrosini et al 2009 |
| Cooperation and integration | Teece et al 1997, Nassimbeni 1998, McGaugey 1999, Zeng et al 2010 |
| Flexibility | Teece et al 1997, Nassimbeni 1998, Sharifi & Zhang 2001 |
| Flatter organisations | Hit et al 1998, McGaugey 1999 |
| Speed | Sharifi & Zhang 1999 |
| Quality | Sharifi & Zhang 1999, Lamming et al 2000 |
| Supplier Selection | Lamming et al 2000 |
| Build-to-order/Customisation | Mathiyakalan et al 2005 |
| Environment scanning | Mathiyakalan et al 2005, Swafford et al 2006 |

### 5.4.2 Culture

Selznick and Mintzberg were the first scholars to acknowledge culture as the organisational dimension that kept the organisations glued together providing an identity and direction. Other authors such as Hodge et al (1996), Hunter (2002), Wang & Ahmed (2002) and Clayton et al (2005) also associated culture with the adopted organisational structure.

Frost (1985) stated that the consequence of organisational culture to the individuals was about symbolism, rituals, myths, etc as well as the understanding of events, ideas and experiences that would end up influencing and shaping the group of employees who interacted together. Organisational culture influenced the manner in which individuals consciously or subconsciously thought, decided and even in the way they perceived, felt and acted (Hansen & Wernerfelt 1989, Schein 1990, Lok &

Crawford 2004). Kennedy (1982) and Peters & Waterman (1982) indicated that organisational culture could certainly affect employees' performance and commitment. Culture covered (Schneider, 1988):

- The values that lied beneath the rewards, expectation and support mechanisms
- The norms that strengthen the policies, practices and procedures of the organisation
- The sharing of organisational norms and values

Different studies of organisational culture placed emphasis on the particularities of each company and the significance of showing diverse elements to achieve a clear identity and differentiation (Harris & Ogbonna, 1997). Wilson (2001) explained that norms and values significantly varied from one organisation to the other depending on whether the main emphasis lied on money, customer-well-being or employee well-being. According to Kotter & Heskett (1992), organisational cultures could be very stable overtime but never static; they believed that the ability of firms to change and adapt according to the environment depended on the characteristics of the culture itself; bureaucratic, risk-adverse and reactive cultures were less responsive to change while adaptive cultures centre on trust and proactive environment were more courageous on embracing and exploiting change.

An effective means of eluding severe consequences and resistance to change was to include and engage affected individuals in decision-making and assessing the need for implementing change (Burnes & James, 1994). They argued that the role of culture when trying to implement changes was to confirm or deny the legitimacy of the new layout or procedures; the response to this new arrangement depended on its alignment with established beliefs and values. Wallach (1983) suggested three different types of organisations based on their culture; bureaucratic, supportive or innovative. Martin (1992) viewed organisational culture from a different perspective and presented three different approaches (integration, differentiation and fragmentation) as elements that defined the organisation.

Denison (1990) Calori & Sarmin (1991), and Kotter & Heskett (1992) carried out independent studies which showed a constructive relationship between culture and organisational performance; the findings demonstrated that a well structured environment had positive impact on the return of investment and return on sales. Several scholars (Karake 1994, Swierczek & Hirch 1994, Nassimbeni

1998, Brinkman 1999, Castells 2000, Zheng et al 2010) also discussed how culture influenced the effectiveness on the implementation of information systems, new technology and knowledge or partnering with other organisations. Nevertheless, Denison (2000) considered that the involvement and the engagement of human resources was a must when seeking improvement in the performance of the organisation; according to him, to achieve the involvement and engagement of the human resources, organisations needed to adopt participative approaches (team orientation) and encourage skill development and empowerment. Franco & Bourne (2003) supported this view and summarised two critical capabilities as means to influence the strategic performance:

- The need for an organisation to promote the development and support of individuals and teams as a way to encourage the ownership of problems, risk-taking and entrepreneurship (Lingle and Schiemann 1996, Johnston et al 2002)
- The need for continuous improvement (Kaplan & Norton 2001, Ho & McKay 2002, He 2008)

Table 8 indicated that dynamic capabilities within the organisational culture encouraged economic growth but also the necessity to have respect for the individuals working within the organisation. In order to keep that economic growth, companies embraced the establishment of clear identity and innovation. Developing clear identities implied the sharing of common values and vision which translated into greater competitive capacity; this implied a change in the way organisations thought. The willingness to change their philosophy and encourage participative systems characterized by loyalty and trust by both management and employees were key for the successful implementation of this approach.

Table 8: Identification and evolution of dynamic capabilities regarding organisational culture

| Dynamic Capabilities | Authors |
|---|---|
| Growth orientation | Argyris 1964, Denison 1990, Calori & Sarmin 1991, Kotter & Heskett 1992 |
| Respect for individuals | Argyris 1964 |
| Innovation | Wallach, 1983 |
| Clear identity | Mintzberg, 1983 |
| Reward system | Schneider, 1988 |
| Share vision | Schneider, 1988;Hansen & Wernerfelt 1989, Schein 1990, Lok & Crawford 2004 |

Table 8: Identification and evolution of dynamic capabilities regarding organisational culture ( continuation)

| Dynamic Capabilities | Authors |
|---|---|
| Willingness to change | Kotter & Heskett 1992 |
| Loyalty and trust | Kotter & Heskett 1992 |
| Participative | Burnes & James, 1994 |
| Entrepreneurial | Lingle and Schiemann 1996, Johnston et al 2002 |
| Diversity and differentiation | Harris & Ogbonna 1997 |
| Empowerment | Denison 2000 |
| Main organisational asset; people | Denison 2000 |
| Employees' welfare | Wilson, 2001 |
| Continuous improvement/Learning | Kaplan & Norton 2001, Ho & McKay 2002, He 2008 |

Entrepreneurial attitude associated with a clear identity came in the 1990s in the way of diversity and more importantly differentiation: people were recognised as the key assets of the organisation and source of competitive advantage, but in order to get the most out of them they needed to make decisions and be rewarded for their performance; companies were required to look after their employees and encouraged continuous improvement if they were going to keep and develop this valuable resource.

### 5.4.3 Management

Mintzberg (1983) also highlighted the importance of the style of management as a critical dimension to define the structure of the organisation. The complexity of dynamic organisation altered the role played by managers; Mintzberg allocated 10 different roles to managers depending on the organisational form (monitor, disseminator, spokesperson, figurehead, leader, liaison, entrepreneur, disturbance handler, resource allocator and negotiator. O'Brien (1998) defined the role of leaders in dynamic organisations as "helping people to grow through mentoring, coaching, evaluating, inspiring, clarifying principles and articulating values and the organisation mission". In similar terms, Cooksey (2003) described this role as "facilitating a supportive environment for learning, serving as a role model, empowering others to action and sharing important meanings for the business and its

members". Johnson (2004) related this role to "understand and manage the expectations of workers desiring greater freedom and control over their working lives".

Today's organisational leader required to search for new ways to facilitate the achievement of the objectives of the organisation and the desires of the employees so they could also find fulfilment at work. Innovation was also embraced as means to achieve success and competitiveness by facilitating and encouraging the creative potential of all organisational resources as well as fostering the autonomy and entrepreneurial skills of all employees (Black & Porter, 2000). Jamali et al (2006) agreed with Black and Porter and stated that leaders needed to encourage employees to embrace change and adopt practices that not only nurture and manage the human resources of the firm but also freed up their creativity and innovation capabilities. Nevertheless, empowerment implied more than ownership of process and outcomes, it meant assuming the responsibility for processes and outcomes (Dixon 1998, Jamali et al 2006)

Table 9 illustrated that in order to apply flexible and entrepreneurial strategy and culture, management needed to move away from highly hierarchical top down approaches and to embrace more tolerant behaviour as a way to inspire employees and encourage then to engage in new activities and propose new approaches to do things without being criticised or penalised for doing so. The 21st century management demanded a balance between leadership and commitment to the company so manager could be seen as an example to follow by the rest.

Table 9: Identification and evolution of dynamic capabilities regarding management characteristics

| Dynamic Capabilities | Authors |
|---|---|
| Coaching & inspirational | O'Brien 1998 |
| Tolerant behaviour | Dixon 1998, Black & Porter 2000, Jamali et al 2006 |
| Authority tied tasks or controlling management | Dixon 1998, Jamali et al 2006 |
| Encourage new trials and experiences | Black & Porter 2000 |
| Positive attitude to change and new ideas, people or technology | Black & Porter, 2000 |
| Balanced self-management, leadership and commitment | Black & Porter, 2000 |
| Management by example | Cooksey, 2003 |
| Promote sense of ownership | Cooksey, 2003, Black & Porter 2000, Jamali et al 2006 |

### 5.4.4 People

Dynamic organisational environments reflected how technology and people were integrated together to develop meaningful operations and flexible organisational structures which would be able to support and encourage highly skilled, knowledgeable and motivated people (Goldman & Nagel 1993, Gunasekaran 1999a). In volatile economic conditions, it was expected that the workforce would be able to react quickly and provide fast responses to unexpected events (Plonka 1997); dynamism was directly related to innovative management structure which used highly skilled, motivated and empowered people who were able to work as a team supporting smart and flexible technology and systems for the proper management of knowledge and learning (Kidd 1995) and proactive adaptation to change (Yusuf et al 1999) not only at organisational level, but also to effectively take part in collaborative ventures (cross-functional and/or cross-organisational) (Van Oyen et al 2001).

Meredith and Francis (2000) described the ideal employee as a multi-skilled, flexible individual who was able to exploit his/her knowledge, judgement, experience and intelligence to his/her full potential to evaluate new initiatives, development opportunities and make decisions.

Hormozi (2001) summarised previous views and explained that current organisational systems demanded creative employees who were committed to the organisation and who worked continuously on improving the existing products or creating new ones. This required that employees contested the way they performed their jobs and capabilities and would educate themselves on new technologies and processes as a way to improve on their roles. Employees needed to be empowered to work on teams and make decisions. The key question in this area was how to make different people embrace change; Dawis & Lofquist (1984) suggested that experiencing with a wide range of activities to develop new ways of doing things would multiply the probability of employees adopting change as part of their working style. Youngblood (2000) explained that classical cultures could not deliver the speed of creativity and responsiveness needed to compete effectively, nor were they attractive enough to the talented people that companies demanded and as result, change created a mismatch between employees and the work environment. Griffin and Hesketh (2003) defended a complementary view according to which employees were encouraged but also they were willing to accomplish the adequate

fit as manufacturing flexibility depended mainly on people rather than on technology (Sherehiy et al 2007).

Sherehiy et al (2007) compiled a list with four elements that could be considered as critical when facilitating an agile workforce; being comfortable with change, new ideas, and new technologies (Plonka 1997), knowledge in team working, multifunctional and diverse workforce (Gunasekaran 1999), speed of adaptation to new work environments, workplace independent and collaborations (Breu et al 2002) as well as proactive behaviour, multiple roles assumption, rapid deployment and spontaneous collaboration (Dyer and Shafer, 2003). Other enables were added by Vazquez-Bustelo et al (2007); top management support and employee engagement and empowerment (Sheridan 1996, Fliedner & Vokurka 1997, Gunasekaran 19999, Sharp et al 1999, Yusuf et al 1999, Zhang & Sharifi 2000), team working in a varied forms such as self-directed teams, cross-functional teams (Gehani 1995, Fliedner & Vokurka 1997, Gunasekaran 1999a, Sharp et al 1999, Meredith & Francis 2000), and job rotation and multifunctional workforce (Gehani 1995, Sahin 2000, Jin-Hai et al 2003)

Table 10 mirrored the strategic and culture tables (Tables 7 and 8 respectively) where growing strategies required motivated individuals capable to multitask and work in teams. The increase of demanding customers and volatile marketplaces suggested the adoption of more flexible and cooperative attitudes so employees were expected to be open to learn and developed multiple skills so they can work within or across organisations. In the medium or long-term, this attitude encouraged employees to make decisions and be proactive in their daily activities with little supervision by the senior management. Eventually, flexibility was integrated not only into their attitude but into the way they were involved and contribute to the company.

Table 10: Identification and evolution of dynamic capabilities regarding people

| Dynamic Capabilities | Authors |
|---|---|
| Motivated | Goldman & Nagel 1993, Gunesakaran 1999 |
| Team working | Kidd 1995, Fliedner & Vokurda 1997, Gunesakaran 1998, Hormozi 2001, Serehiy et al 2007, Vazquez-Bustelo et al 2007 |
| Self-managed | Gehani 1995, Gunesakaran 1999, Sharp et al 2000, Sharifi & Zhang 2001 |
| Multi-functional | Gehani 1995, Sahin 2000, Jin-Hai et al 2003, Sherehiy et al 2007 |

Table 10: Identification and evolution of dynamic capabilities regarding people (continuation)

| Dynamic Capabilities | Authors |
|---|---|
| Flexible roles | Gehani 1995, Sahin 2000, Tsourveloudis & Valavanis 2002, Jin-Hai et al 2003 |
| Willing to change | Plonka 1997, Allworth & Hesketh 1999, Hormozi 2001 |
| Cross-Functional | Fliedner & Vokurka 1997, Meredith & Francis 2000, Vazquez-Bustelo et al 2007 |
| Cooperative | Forsythe 1997, Breu et al 2002, Dyer & Shafer 2003 |
| Multi-skilled | Medhat & Rook 1997, Vernadat 1999, Meredith & Francis 2000 |
| Open to learn | Plonka 1997, Meredith & Francis 2000, Hormozi 2001, Dyer & Shafer 2003 |
| Proactive | Yusuf et al 1999, Dyer & Shafer 2003, Griffin & Hesketh 2003 |
| Committed | Youngblood 2000, Hormozi 2001 |
| Able decision-making | Meredith & Francis 2000, Hormozi, 2001 |
| Autonomous decision-making | Hormozi 2001 |
| Cross-Organisational | Van Oyen et al 2001 |
| Temporality and workplace independence | Breu et al 2002, Griffin & Hesketh 2003 |
| Diversity | Griffin & Hesketh 2003 |
| Contribute to the organisation | Sherehiy et al 2007 |

### 5.4.5 Knowledge

The view of Penrose appointing knowledge not only as a source of productivity enhancement but competitive advantage became more relevant than ever for dynamic organisations. Knowledge generation could be seen at three levels; learning, knowledge development and innovation (Starkey et al 2004). Correira de Sousa (2006) divided the concept in the three same elements and described them as follows; learning implied creation of knowledge. Knowledge involved the general understanding of situations or circumstances gained through previous experience or learned processes (knowledge can encompasses activity engagement on novel research and development fields as well as systematic programmes seeking continuous improvements; Starkey et al 2004) ; while innovation was the outcome of a set of activities that use knowledge.

Despite the fact that knowledge could help companies bridge the gap with rivals or even provide advantage over them, in order to be effective there were various aspects that management needed to consider:

- Understanding of the differences between individual learning and organisational learning; organisational learning was the result of a group of individuals that worked and learnt together sharing experiences and aiming together at common goals. “Collective knowledge is greater than the sum of knowledge of individual members” (Hitt, 1996)
- Creating organisational knowledge required that the individual knowledge was externalised; individuals needed to be willing to share their knowledge with other individuals (Lustri, 2007) and consequently managers had to develop reward systems to encourage the distribution of knowledge as it would seem unrealistic that employees exchanged ideas and experiences without gaining something from it (Al-Alawi et al 2007).
- The emphasis of the process lay on the application of knowledge and not only on its acquisition and protection (Spender 1994, Grant 1996, Demarest 1997). “Knowledge has no value if it’s not applied in some way. It’s only the application that becomes valuable “(Claycomb et al 2001).
- Organisational culture affected the way the individuals accepted and fostered knowledge (Ndlela & Toit 2001, Lai & Lee 2007). Organisations institutionalised a mind-set that encourages the absorption and effective transference of knowledge across the organisation (Starkey et al 2004)
- Knowledge was generated following a set of cultural values, existing relationships and strategic priorities; according to Zheng et al (2010) knowledge acted as the interface between the different departments.
- Sharing and development of knowledge increases flexibility in reaching and satisfying customers as well as enhancing the opportunities of successful bids on new projects when combined with external partners (Schonsleben 2000). Organisations had to protect their knowledge base and encourage the efficient and effective use of both internal and external knowledge (Lai & Lee 2007, Lustri 2007).

In summary, a dynamic organisation sought a well-developed knowledge dimension characterised by the following dynamic capabilities:

Table 11: Identification and evolution of dynamic capabilities in relation to the organisational approach to knowledge

| Dynamic Capabilities | Authors |
|---|---|
| Source of competitive advantage | Penrose 1959, Drucker 1993 |
| Internally promoted | Senge, 1990 |
| Continuous activity | Senge 1990 |
| Applied knowledge | Spender 1994, Grant 1996, Demarest 1997, Claycomb et al 2001 |
| Partnerships | Schnösleben 2000, Lustri 2007 |
| Mindset | Ndlela & Toit 2001, Lai & Lee 2007 |
| From small improvements to blue sky technology | Starkey et al 2004 |
| Bridge the gap with rivals | Starkey et al 2004 |
| Innovation, development & learning | Correira de Sousa 2006 |
| Rewards | Al-Alawi et al 2007 |
| Individual learning and Organisational learning | Lustri, 2007 |
| Internal and external learning | Lai & Lee 2007, Lustri 2007 |
| Shared values, mentality, identity and purposes | Zheng et al 2010 |
| Interaction | Zheng et al 2010 |

Table 11 indicated that, companies initially sought new ways to utilise company and individuals' knowledge as a source of economic growth and eventually competitive advantage. In order to do so, learning was encouraged by the managers and became a constant activity applicable in everyday activities. Learning, continuous improvement and innovation were considered to be complementary and therefore needed to become part of the mindset shared within the organisation and with the partners; creation and distribution of knowledge became essential values within the identity and objectives of the company.

### 5.4.6 Information and Communication Systems

The importance of information and communication systems as a means to exploit the resources and capabilities of the organisation only helped increase market complexity. ICT systems not only helped improve productivity and quality of products and services, but also the way different departments or organisations interacted; they could then cooperate with other organisations to best adapt and satisfy

customer demands and response to possible changes while maintaining costs at a competitive level (Huang et al, 2000).

Hendriks (2001) described the role of ICT systems as allowing and facilitating the capture or absorption of information, its storage, management and its posterior distribution. Crocitto & Yourseff (2003) described successful ICT systems as those systems that contributed and facilitated the decision making process, flow of information, teamwork and flexibility of processes. In addition, Colman & Han (2005) reminded that dynamic systems needed to be easy to use, reorganise and reconfigure itself as reply to changes in the environment or in response to modifications of their goals, resources and capabilities. To obtain re-composition, the infrastructure of the system had to be flexible. In the same way, flexibility implied accessing the information from non-office based locations, with no time constraints and by anybody that might require that data in the appropriate format (Newell et al 2002)

Table 12: Identification and evolution of dynamic capabilities in relation to ICT systems

| Dynamic Capabilities | Authors |
|---|---|
| Inwards and outwards coordination | Huang et al, 2000 |
| Cooperation | Huang et al 2000 |
| Capture, management, storage and distribution of information | Hendriks, 2001 |
| Information accessible; who, where, when and adequate form | Newell et al, 2002 |
| Task supportive | Crocitto & Yourseff, 2003 |
| Facilitator | Crocitto & Yourseff, 2003 |
| Integrator | Crocitto & Yourseff, 2003 |
| Easy to use | Colman & Han, 2005 |
| Easy to reorganise and reconfigure | Colman & Han, 2005 |

Mirroring the Table 11, ICT systems were designed to seek at inward and outward coordination of activities and sharing of knowledge; this facilitated cooperation among departments and partners. These systems also assisted with the access to data as well as supported and integrated the data within activities but in order to be effective and responsive, systems had to be easy to use and reconfigurable.

## 5.5 Conclusion

Following the conclusion of chapter four, both higher and lower organisational levels were necessary to develop a sound understanding of the entire organisation. This chapter focused on the higher organisational levels.

Structure was selected as the driving concept of the chapter as it was considered to be the leading attribute of change and the frame for most organisational decisions and processes (Wang & Ahmed, 2003). History illustrates how organisations altered their behaviour seeking the best fit with the external environment; initially, structure followed environment, then structure followed culture and finally structure directly related to strategy. Nevertheless, it was rather simplistic to interpret these approaches in isolation and not think that they were interrelated in some way. That was also Mintzberg's opinion as he linked structure to strategy by suggesting that managers, and especially management style, was key to determine the structure of the organisation and how it related with its members. The success of implementing any management style was associated with its fit with the organisational culture. McKinsey followed a similar approach but included people as another dimension to be considered.

Senge in the 1990s promoted the importance of knowledge and continuous learning as source of competitive advantage. Knowledge also related to culture as it acted as the interface between the different departments of the organisations and should constitute a critical dimension during the design of the organisation (Senge 1990, Zheng et al 2010). Later on the 1970s, ICT systems were proposed as strategic capabilities that would facilitate organisational fit by establishing a link with the environment and within the internal elements to create flexible virtual environments capable of responding faster to changes in the market place.

Volatile environments required organisations able to embrace and manage change. In order to do so in an effective manner; an organisation required specific characteristics such as boundless fluidity, interactivity and flexibility. Consequently, the second part of the chapter showed a chronological overview for each of the identified high level dimensions; strategy, culture, management, people, knowledge and ICT and their leading dynamic capabilities.

The chronological analysis of these dimensions indicated that the way organisations compete in the market place changed along the years; initially, organisations sought growth by providing products that deliver good value for money but as general industry quality and customer service improved, companies needed to find a way to differentiate themselves from the rest; having and exploiting a company's identity became the way to compete. Nevertheless, this was not enough and the customers demanded more for their money; greater product variation and faster delivery became the prime market drivers. Internal and external collaborations became necessary to maximise companies' capabilities but also to open new business opportunities for those organisations willing to engage on customised projects; being flexible and open to new business opportunities was necessary for those organisations wanting to stay competitive. In order to make this new approach to work, organisations needed to embrace an entrepreneurial attitude within the company; management adopted a new leading style more tolerant to failure, inspirational and empowering, while the rest of the staff also contributed being motivated and willing to change, ready to engage on continuous development activities and enhance their flexibility to work. Knowledge was promoted as a source of innovation and competitive advantage and organisations were keen on investing in the necessary infrastructure that allowed capturing, managing and distributing that knowledge as required.

These high level dimensions and identified dynamic capabilities were later on used to develop a framework that made it possible to measure the dynamic capabilities of an organisation at a specific moment in time. The initial stages of the model being populated could be seen in Figure 12.

The same approach was followed for the lower organisational levels in the next chapter.

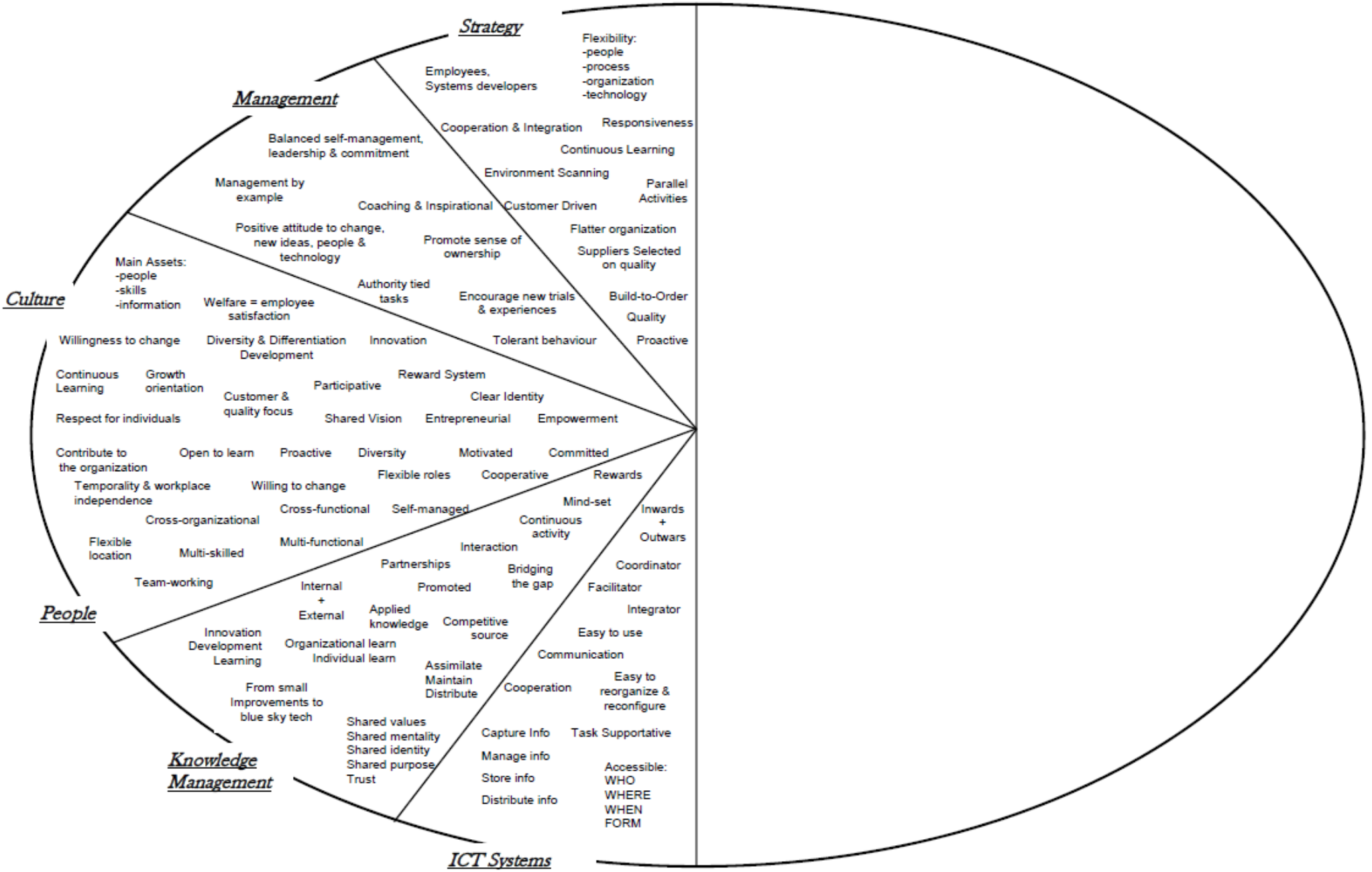



Figure 12: Dynamic Capabilities Framework including higher organisational level dimensions

# *Chapter 6:*
# *The Dynamism of the Bottom-Line*

## 6.1 Introduction

Chapter four suggested that organisational design and organisational dynamism depended upon higher and lower level organisational dimensions. Chapter five analysed the higher level dimensions while this sixth chapter focused on the analysis of the lower level dimensions, as organisations would not work effectively and efficiently unless the bottom-line dimensions of the organisation were adequately aligned to the driving force.

Contemporary markets were characterised by intensive global competition and diverse demand which led to the development and usage of advanced technologies seeking the reduction of lead times in innovation, and consequently shorter product life cycles. According to Hayes and Wheelwright (1985) in order to achieve competitive advantage companies had to master six critical practices;

- Development of the workforce.
- Development of a technically competent management groups.
- Competing through quality.
- Stimulating workers' participation.
- Investing in state of art equipment.

Companies were able to implement more proactive and contributing methods by bringing different business dimensions closer together. Business units or dimensions could not be understood in isolation if they were to remain competitive; attracting and fulfilling customer expectations implied the alignment of the internal activities and assets with external factors such as competition and partnerships. This trend became evident in manufacturing where the emphasis clearly shifted to a tight interface between manufacturing strategy and other functional, mostly marketing, strategies (Marucheck et al 1990, Rho et al 1994, Parente 1998, Hill 2000). Aligning manufacturing or other business dimensions to the market place became challenging for organisations as it implied allocating resources to task or jobs within well defined time windows and coping with different set of constraints. Evolving scenarios were the norm as

technologies and organisational criteria changed; those companies inept to adopt a more dynamic approach and to enhance the flexibility of their business boundaries lost their competitive edge (Rabelo et al 1999). Flexible processes sought fast new product acquisition, rapid problem system, mastering change and uncertainty, enhancing responsiveness and reconfigurability as well as innovation. Nevertheless, flexible processes would not be effective without dynamic linkages that helped develop an efficient alignment with suppliers and performing partnerships, as well as obtaining a deep customer insight (Meredith and Francis, 2000).

The question was how organisations could identify the adequate tools and techniques and acquired the relevant capabilities and abilities in order to become dynamic. Sharifi and Zhang (2001) suggested that organisations required building up essential and specific capabilities if they were going to become dynamic; in the previous chapter, authors described dynamic processes as flexible or agile; a system could be flexible without being agile, but an agile system had to be flexible (Swafford et al 2006). That was the reason to select agile processes as the reference approach.

## 6.2 Manufacturing

Hormozi (2001) defined a dynamic company as “one that embraces change and adapts to it rapidly and easily” and he transferred this view into manufacturing as the capability of reconfiguring operations and processes while flourishing in an environment of continuous change. Hormozi was not the first scholar to describe dynamic manufacturing, many other authors such as Dove (1993), Goldman & Nagel (1993), Burgess (1994), Kidd (1995), Richards (1996), Spearmann & Hopp, (1996), Parkinson (1999), Gunasekaran & Ngai (2004)… tried to do so before by following flexible or agile models. Find below a summary of some of their views;

- Dove (1993) described dynamic manufacturing as rapid response manufacturing and mass customisation.
- Agile manufacturing was a synthesis of existing advanced manufacturing technologies and flexible methods of organising production systems (Burgess, 1994).
- Speed and the adequate abilities were regarded as the key pillars to adapt continuous change in the most effective and efficient way, as agility was the capability to rapidly reconfigure a

manufacturing system for efficient production of new products as they were introduced in the marketplace (Spearmann & Hopp, 1996).

- Agile manufacturing provided mechanisms to quickly react to changing markets to produce high quality products, to reduce lead times and provide superior customer service in a skilled way. The benefits of this type of manufacturing were time based competencies, implementing innovative management concepts and harnessing the full potential of new technologies and concepts (van Assen 2000).
- The agile manufacturing organisations produce high quality & defect free products with short-lead times. The product was able to be upgraded and reconfigured rather than replaced. The agile manufacturing organisation integrated design, engineering and manufacturing with marketing and sales in such a way that the products were customised to the exact needs of the customer (Hormozi, 2001).

Traditionally, agile manufacturing was analysed as a completely different approach to manufacturing, and comparison tables such as the one provided by Hormozi (Table 13) emphasised the difference between the different models

Table 13: comparison of the industry objectives or emphasis (Hormozi, 2001)



Later in the 1990s a new view was raised defending that to develop or move towards agile manufacturing, companies had to already be world class and using lean methods (Goldman & Nagel 1993, Kidd 1995, Richards 1996, Parkinson 1999, Hormozi 2001, Gunasekaran & Ngai 2004). Adeleye and Yusuf (2006)

went one step further and stated that agile manufacturing could be achieved by integrating the efficiency of lean manufacturing with the flexibility of flexible models while delivering customised solutions at the cost of mass production.

Taking into consideration this view, the list of capabilities that a dynamic manufacturing environment encompassed was long. Flexibility, speed of response and adaptability were the most commonly mentioned capabilities nevertheless, there are other capabilities also considered; rapid set-ups which enabled economic changes in process (Kirk and Tebaldi 1997, Dove 1999, Malek et al 2000, Hormozi 2001, Ramadesh et al 2001), smart automation that enhanced the efficiency of adjustments (Burgess 1994, Parkirson 1999, Crocitto & Youseff 2003, Ramesh & Devadasan 2007), modular design which allowed modifications in no time and restoring performance nearly immediately (Vernadat 1999, Maskell 2001). Meredith and Francis (2000) emphasised the necessity to focus on meeting the customer specific needs and desires, which implied producing-to-order, adopting new ways of working or creating virtual projects and ad-hoc organisation of capabilities.

Many companies took for granted the impact of virtual or information technologies; Parkinson (1999) already warned about this misconception in the past, “Investments in advanced technology are certain needed but it’s equally certainly not enough”. To maximise the flexibility and efficiency of the various manufacturing processes, companies needed to exploit both technology and their human associates. Agreeing with this statement, Parker (1999) also highlighted the importance of the individuals to make the system work but also to be aware and conscious about the risk faced by depending too much on them; “In the long cycle complex products, it may be that some of the key individuals move on to other jobs or organisations and this information becomes harder or even impossible to obtain. Agile manufacturing cannot afford to rely on these individuals always being around and available; it’s important to systematise such information processing as part of the overall process”.

Table 14 indicated that companies initially based their competitive advantage on short-lead times, use of advantage technologies and high quality products. In the 1990s, this would not be enough and companies needed to increase their production variety which translated into volume, product and workforce flexibility. Companies relied on technology (smart adaptable automation, rapid prototyping, modular design, virtual

engineering...) to facilitate this transition and speed up the process. Reconfigurability and innovation were the other two main drivers of this transition period. Companies acknowledged that this transition would not be possible without sharing information and getting the customer involved during the duration of the project; by doing so, organisations benefited from shorter time to market of products, value added activities, enhancement of the problem solving abilities, cost-effectiveness, waste elimination and faster responses to change. There were also internal rewards such as greater departmental and supply chain integration, successful implementation of concurrent engineering, greater resource planning and more effective usage of the adjustable machinery

Table 14: Identification and evolution of manufacturing dynamic capabilities

| Dynamic Capabilities | Authors |
|---|---|
| Short-lead time | Slack 1983, van Assen 2000, Hormozi 2001 |
| Advance technology | Hayes & Wheelwright 1985, Parkinson 1999, van Assen 2000, Hooper et al 2001 |
| High quality | Hayes & Wheelwright 1985, Hormozi 2001, Maskell 2001, Hooper et al 2001 |
| Volume Flexibility | Gerwin 1987, Sethi & Sethi 1990, Sharifi & Zhang 2001 |
| Product Mix Flexibility | Sethi & Sethi 1990, Van Assen 2000, Sharifi & Zhang 2001 |
| Workforce Flexibility | Chandra & Tombak 1992, Gehani 1995, Meredith & Francis 2000, Sahin 2000, Hormozi 2001, Jin-Hai et al 2003 |
| Smart adaptable automation | Burguess 1994, Gunasekaran 1999, Parkison 1999, Crocitto & Youseff 2003, Jin-Hai et al 2003, Vazquez-Bustelo et al 2007 |
| Rapid prototyping | Cho et al 1996, Coronado et al 2002, Onuh et al 2006, Vazquez-Bustelo et al 2007 |
| Short set-ups | Kirk & Tebaldi 1997, Dove 1999, Malek et al 2000, Ramadesh et al 2000, Hormozi 2001 |
| Modular design/production | Vernadat 1999, Maskell 2001 |
| Virtual engineering | Parkinson 1999, Coronado et al 2002, Jin-Hai et al 2003, More et al 2003, Vazquez-Bustelo et al 2003 |
| Access to information | Parkinson 1999, Maskell 2001, Coronado et al 2002 |
| Schedule Flexibility | Rabelo, 1999 |
| Combination of mass market & customised projects | Van Assen 2000 |
| Time-effective | van Assen 2000, Hormozi 2001 |
| Customer involvement | Sharifi & Zhang 2000, Coronado et al 2002 |
| Process Speed | Meredith & Francis 2000, Ramesh & Devadasen 2007 |

Table 14: Identification and evolution of manufacturing dynamic capabilities (continuation)

| Dynamic Capabilities | Authors |
|---|---|
| Reconfigurability | Van Assen 2000, Hormozi 2001, Coronado et al 2002 |
| Innovation | Van Assen 2000, Vazquez-Bustelo et al 2007 |
| Rapid problem solving | Meredith & Francis 2000, Pulakos et al 2000, Sherehiy et al 2007 |
| Short-time to market | Hormozi 2001 |
| Value adding | Maskell 2001 |
| Cost-effective | Sharifi & Zhang 2001 |
| Waste elimination philosophy | Hormozi 2001, Maskell 2001 |
| Fast Response to change | Sharifi & Zhang 2001 |
| Short Product life cycle | Sharifi & Zhang 2001, Tersine & Wacker 2001, Lau et al 2002, Helo 2004, Ho et al 2005, Ramesh & Devadasan 2007 |
| Departmental integration | Hormozi 2001, Sharifi & Zhang 2001, Coronado et al 2002 |
| Concurrent engineering | Coronado et al 2002, Jin-Hai et al 2003, Vazquez-Bustelo et al 2007 |
| Supplier involvement | Coronado et al 2002 |
| Adjustable machinery | Tsorveloudis & Valavanis 2002 |
| Resource planning | Jin-Hai et al 2003, Yao & Carlson 2003, Vazquez-Bustelo et al 2007 |

## 6.3 Marketing

Webster (1992) drew attention to the necessity to change the role of marketing and to think about the greater contribution that companies could gain from dynamic environments if their internal operations were aligned to support marketing relationships. This approach made co-creating value possible by accessing new business opportunities and markets (Venkatesh et al 2000, Maklan & Knox 2009). This approach was further developed in posterior years as the globalisation of the customer base fragmented the markets even more; customers required smaller quantities of more individualised products. Customers wanted to be treated individually and demanded more; this contributed towards the development of companies with wide product ranges and the introduction of new products on a continuous basis. In addition, perfect quality and high levels of service were expected and demanded; in other words, excellent and complete service with improved and added value benefits became as important as the product itself (Carrie 1999 and Maskell, 2001). Poolton et al (2006) compiled a list of 7

main activities that companies engaged in to get the most of marketing relationships; customer driven strategy, customer care and service quality, excellent customer/client communication, researching new marketing opportunities, internal communication and power-sharing, market planning and execution of change, and competitor orientation.

Adamidesh and Voutsina (2004) believed that marketing needed to embrace an exploratory style characterised by continuously seeking information on other internal functions, the product or other service variety aiming at offering the greatest variety possible. Table 15 summarised the marketing capabilities mentioned by other scholars as necessary considerations to embark on dynamic markets.

Table 15: Identification and evolution of dynamic capabilities within marketing activities

| Dynamic Capabilities | Authors |
|---|---|
| Co-marketing with others | Webster 1992, Venkatesh et al 2000, Maklan & Knox 2009 |
| Total service | Carrie 1999, Maskell 2001 |
| Based on customer satisfaction | Hormozi, 2001 |
| Sensitive to customer demand | Hormozi, 2001 |
| Low degree of product marketing | Hormozi, 2001 |
| Frequent product launch | Maskell, 2001 |
| Build-to-order/Customisation | Hormozi 2001, Maskell 2001 |
| Niche market | Sharifi & Zhang 2001 |
| Great variety of options | Adamidesh & Voutsina, 2004 |
| Internal alliances | Adamidesh & Voutsina, 2004 |
| High customer service | Poolton et al 2006 |
| Tracing new markets | Poolton et al 2006 |
| Market driven | Poolton et al 2006 |
| Continuous scanning of the environment | Poolton et al 2006 |

During the late 1980s, the culture table (Table 8) indicated that companies started developing and exploiting their identities as a source of competitive advantage; Table 15 showed that companies would also engage in co-marketing activities with partners, customers and suppliers as a means to attract new business opportunities. This approach was later extended; organisations would not only share their image but integrate their processes to provide a complete service.

In the 2000s, customers clearly were the market driver and consequently achieving customer satisfaction was the only way to successfully compete in this environment. Yet the main challenge was identifying and predicting customers' requirements; customer intelligence became an essential activity within any organisation. According to the table in the later years, successful organisations were those ones which were able to supply great variety of products and high customer service.

## 6.4 Benchmarking

It was previously mentioned that as part of the market analysis companies sought information about the competition; benchmarking was not a new concept but it indeed regained importance since the 1990s (Zairi, 2005). Benchmarking was a complex and confusing concept with many definitions and explanatory models. Camp (1989) provided one of the first and probably most used definitions; he defined benchmarking as "the search for industry best practices that lead to superior performance". Following this view, he developed a 10 step process which was later implemented by Rank Xerox;

1. Identification of what was to be benchmarked
2. Identification of the comparative companies
3. Determination of data and collection method
4. Determination of the performance gap
5. Establishment of the project future performance levels
6. communication benchmarking findings and gain acceptance
7. identification and description of functional goals
8. development of necessary action plans
9. implementation of the specific actions and monitor progress and finally,
10. recalibration of benchmarks

Defining the concept was not the only challenge regarding benchmarking, Mckelvey (1975) already reported that a fundamental challenge when performing a formal investigation of organisations was how to order and classify them. This argument was important as an accurate classification could facilitate the storage and retrieval of information and consequently would enable learning and the application of generalisations. Rich (1992) explained that the adequate and correct classification of organisations could help refine hypothesis strategically, aid in validity and utility of existing typologies based on logical and

intuitive considerations, serve as basis for guiding organisational decisions on change and permit researchers to readily specify boundaries from which samples of organisations could be drawn. With Carroll (1984) a new approach to analyse the external environment was introduced; he suggested that organisational empirical research followed a static method where temporal stability was assumed. A static analysis of the external environment only provided a snapshot of the company and its surroundings and this could lead to a mismatch between the reality of the company and the capability of the technique; in order to avoid doing so, he encouraged the use of dynamic analysis and longitudinal data.

Following this view, Codling (1992) reaffirmed that the company's goals and objectives had to be flexible if it was going to respond to changes in the environment. Codling (1992) declared that by using benchmarking practices, organisations developed a focus on the external environment and emphasis on increasing process efficiency; according to her, benchmarking acted as a means to provide insights into new practices. She classified benchmarking into three categories; internal, external and best practices.

- Internal benchmarking: focused on comparing itself against other partners from within the same company or division. It was considered to be the first step of benchmarking of an organisation.
- External benchmarking: performance comparison with partners from different business units in the same organisations or within different companies. Especially useful for identifying superior performance and for rectifying cultural position to the adoption of ideas from outside the organisation.
- Best practice benchmarking: sought to identify and compare the company's performance against the owners of processes regarded as 'best-in-class'.

Zairi (1994) argued with Codling regarding how benchmarking could improve performance; he admitted that benchmarking contributed towards incremental improvements to existing performance standards, reductions of extensive leaps by encouraging new practices and ways of working, and creation of excellence by generating a learning organisation. Nevertheless, he explained that in any case, improvements in performance depended on the learning curve, resource committed and the pace of achievements. He believed that benchmarking was best used as a means for avoiding unjustified complacency and a way to create quality programmes which would motivate the organisation to

continuously assess the external environment and identify gaps in performance that could be exploited by developing the right strategies for closing them.

Zairi (1994) provided a list of considerations within the business environment (Table 16) that companies needed to consider when aiming at enhancing their effectiveness and competitiveness. The first seven factors were directly related to enhancements of the company's effectiveness while achieving the last eight would help develop competitive advantage.

Table16: effectiveness and competitive considerations (Zairi, 1994)



For other authors such as Zairi & Ahmed (1999), Andel 1999 or Fernandez et al (2001), benchmarking was about learning from other organisations with the intention of adopting their competitive practices. Benchmarking offered a comparative background of identifying and building up dynamic capabilities and objectives; the main challenge of this approach was to know if those practices were transferable and therefore if they could be successfully adopted and implemented by the organisation; in this case as Wareham and Gerrits (1999) stated "the learning process is to value if identified practices could conflict with the existing organisational culture, management style and structure". It was critical for companies to understand that different companies function in distinctive functional and cultural environments and consequently, in some instances processes could be tacit, socially embedded or inalienable. Nevertheless, Meredith and Francis (2000) warned that the mission of an agile organisation was not only to identify best practices but to be proactive and progress beyond accepted practices of the moment. Fernandez et al (2001) stated that some organisations should consider altering some of their internal practices if they were to accommodate one or several of the benchmarked practices successfully.

Benchmarking could also be thought of as a tool that makes possible to utilise existing knowledge to enhance strategic planning, competitive analysis, team building, data collection and most importantly organisational development. This was especially effective when aligned to improvements on quality, productivity and customer satisfaction; in this case, benchmarking was considered as a tool or technique that helped implementation of change (Daniels 1996, Fernandez et al 2001). Elmuti & Kathawala (1997) advised the development of a basic model which would allow flexibility for modification to meet personalised needs; the model needed to be clear and simple with focus on logical planning, management and monitoring of outcomes.

Taking into account all these views, benchmarking was used both at operational and strategic level; at operational level, benchmarking could be beneficial for planning, data collection and analysis as well as evaluation, adaptation and continuous improvements. While at strategic level involved forward looking as proactive analysis of emerging trends, options in markets, processes, technology and distribution that could affect strategic direction and employment (Pozos 1995, Sarkis 2001).This latest view was transferred into definitions such as the one provided by Anand and Kodali (2008) who defined benchmarking as “a management tool for attaining or exceeding the performance goals by learning from best practices and understanding the processes by which they are achieved”.

Table 17 showed a summary of the long list of capabilities mentioned by various scholars in relation to benchmarking; developing competitive advantage would imply understanding the performance gap between the organisation and its rivals and identifying best practices when possible. Benchmarking activities moved from being fully externally focused to understand that practices used in some areas of the business could also be beneficial when implemented in other areas, but companies should be careful on using these best practices as guidelines and not absolutes as they were characteristics specific to companies or departments that could not be completely duplicated. Benchmarking was not only used as a guideline but as a source of knowledge and as result companies would learn to evaluate and personalise gathered data, thinking about the future and not only the present.

Table 17: Identification and evaluation of dynamic capabilities within benchmarking

| Dynamic Capabilities | Authors |
|---|---|
| Performance Gap | Camp 1989, Codling 1992, Zairi 1994 |
| Best Practice | Camp 1989, Codling 1992, Meredith & Francis 2000, Anand & Kodali 2008 |
| Data collection & Analysis | Camp 1989, Codling 1992, Sarkis 2001 |
| Internal & External benchmarking | Codling 1992, Sarkis 2001 |
| Guidelines | Codling 1992, Rich 1992, Zairi 1994 |
| Comparison | Zairi 1994, Meredith & Francis 2000 |
| Learning | Zairi 1994, Fernandez et al 2001, Anand & Kodali 2008 |
| Data Evaluation | Zairi 1994, Sarkis 2001 |
| Personalisation | Elmuti & Kathawala 1997, Sarkis 2001 |
| Forward-looking | Sarkis 2001, Anand & Kodali 2008 |

## 6.5 Logistics

The globalisation of sourcing opportunities and the customer base made advanced telecommunication systems and transportation technologies critical aspects of trading. According to Fawcett (1992) companies improved their delivery by selecting the most efficient and effective mode of transportation. Fuller et al (1993) provided some light on how to achieve this as they recommended selecting a logistic system customised to service the distinct needs of various customer segments (delivery timing, frequencies, channels…). Logistics, if managed adequately, could stream all activities within the organisation and enhance the value of the offered product (Vastag et al 1994). The streaming of activities implied tightly-coupled systems that worked with minimum levels of stock and required the development of additional capabilities that would make fast response and rapid problem solving possible in order to preserve the stable utilisation of the existing assets (Balakrisham et al 1995).This would only be possible if companies developed the ability to quickly reconfigured their supply chain and switch from one variant to another (Christopher, 2000).

For these systems to be efficient, they had to be able to process and transfer large volumes of information across several structures permitting access to data such as cost, personnel, stocks, sales and profit profiles (Mutsaer et al 1998). In dynamic environments, there was not an ideal process for planning and control what complicated the efficient integration of aspects such as logistics and other business activities that helped achieve stability on volatile environments. Van Assen et al (2000b) proposed the

development of long-term contracts with suppliers but flexible enough that would allow incorporating changes or switching suppliers if necessary.

The distribution centres and storage activities might play a vital role in the success or failure of business but also represented significant investment in long lasting assets (Frazelle 2002). That was why some companies decided to put all their effort on reducing cost through just-in-time purchasing, scheduling and distribution (Yusuf et al 2003), and other more proactive companies would rather a reduction on the inventory level while speeding responses as the way to compete in the market place instead of focusing on the elimination of losses (Banomyong & Supatn 2004). In some instances, agility involved leanness as a high inventory level or spare capacity could provide the necessary flexibility to face changing customer demands and at the same time be viable financial option (Jain et al, 2008). Table 18 summarised the necessary dynamic capabilities required in this operation; it indicated that the emphasis in logistics changed from being an effective and efficient mode of delivery to a value added activity for those new business opportunities, build-to-order projects which required to be tailored to tailored logistical activities. Customer satisfaction and a rapid changing market place forced companies to look for ways to reduce lead-times and integrate information so they could react to changes or respond to problems in real time. It also features a change from long-term and stable contract to a more flexible approach where organisation sought the best partner depending on the specific business opportunity.

Table 18: identification and evolution of dynamic capabilities within logistics

| Dynamic Capabilities | Authors |
|---|---|
| Effective and efficient use of mode delivery | Fawcett 1992 |
| Tailored logistic activities | Fueller et al 1993 |
| Reduced lead-time | Vastag et al 1994, Christopher 2000 |
| Use of global suppliers if required | Vastag et al 1994, Christopher 2000 |
| Integrated information systems | Mutsaers et al 1998, Christopher 2000, Christopher & Towill 2000 |
| Low inventory level of the output | Christopher 2000, Banomyong & Supatn 2004 |
| Real time response | Christopher & Towill 2000, Banomyong & Supatn 2004 |
| Long-term & Flexible contracts | Van Assen et al 2000b |
| Distribution channels that are easy to create, switch & dissolve | Christopher, 2000 |
| JIT Procurement | Yusuf et al 2003, Jain et al 2008 |

## 6.6 Conclusion

Dynamic environments demanded flexible organisations capable of rapidly adapting to these changes; in order to do so, organisations required not only to develop dynamic structures but also dynamic internal processes that would facilitate a smooth transition from the old state to the new state. The question was how organisations can identify the adequate tools and techniques as well as acquire the relevant capabilities to become a dynamic organisation.

This chapter looked at the lower level dimensions of the organisation from a dynamic point of view and identified what dynamic capabilities were required within each of these internal areas of the organisation to facilitate and encourage flexible and proactive responses. The literature review in chapter four suggested that an agile approach represented the more inclusive approach and consequently the different dimensions were analysed following these characteristics. Subsequently, the lower level dimension highlighted within the agile approach were manufacturing, marketing, benchmarking and logistics.

The chapter showed a chronological list of dynamic capabilities for each of these lower level dimensions which would indicate that organisations changed the way they operated in response to changes in dimensions at higher level. The different tables suggested that manufacturing processes needed to be adjusted so they were able to cope with greater variety and be more responsive to changes in the orders or the market place; consequently organisations were keen to embrace smart automation, virtual engineering... as a means to cope with volatile external environments, but in most case the inclusion of customers and suppliers were the most effective way to be aware of changes or problems and to react accordingly, or even to predict them before they happened. The emphasis on marketing activities also changed along the years, the importance moved from product promotion to branding and then to new business opportunity identification and capability promotion. With regards to benchmarking, it was no more about identifying the performance gap in relation to the direct competitors and their best practices to use them as guidelines, but to seek ways to learn from the gathered information and personalise this data so it could be effectively used to plan the future. Logistics were also a dimension that evolved considerably, it went from just dealing with the delivery mode to being a key dimension to reduce lead

times and increase responsiveness; the new systems were characterised by their flexibility and capacity to include or discard members according to the needs of the customer. As in the previous chapter with the higher level dimensions, the dynamic capabilities for the lower organisational level dimensions were transferred into the developed model that would be used to test the hypothesis (see Figure 13).

One of the various elements of clusters mentioned by Maskell and Lorenzo (2006) and Teräs (2008) was the existence of internal and external linkages. Previous chapters looked at the internal linkages and therefore the next stage considered those areas of the organisations that linked the company with the external environment.

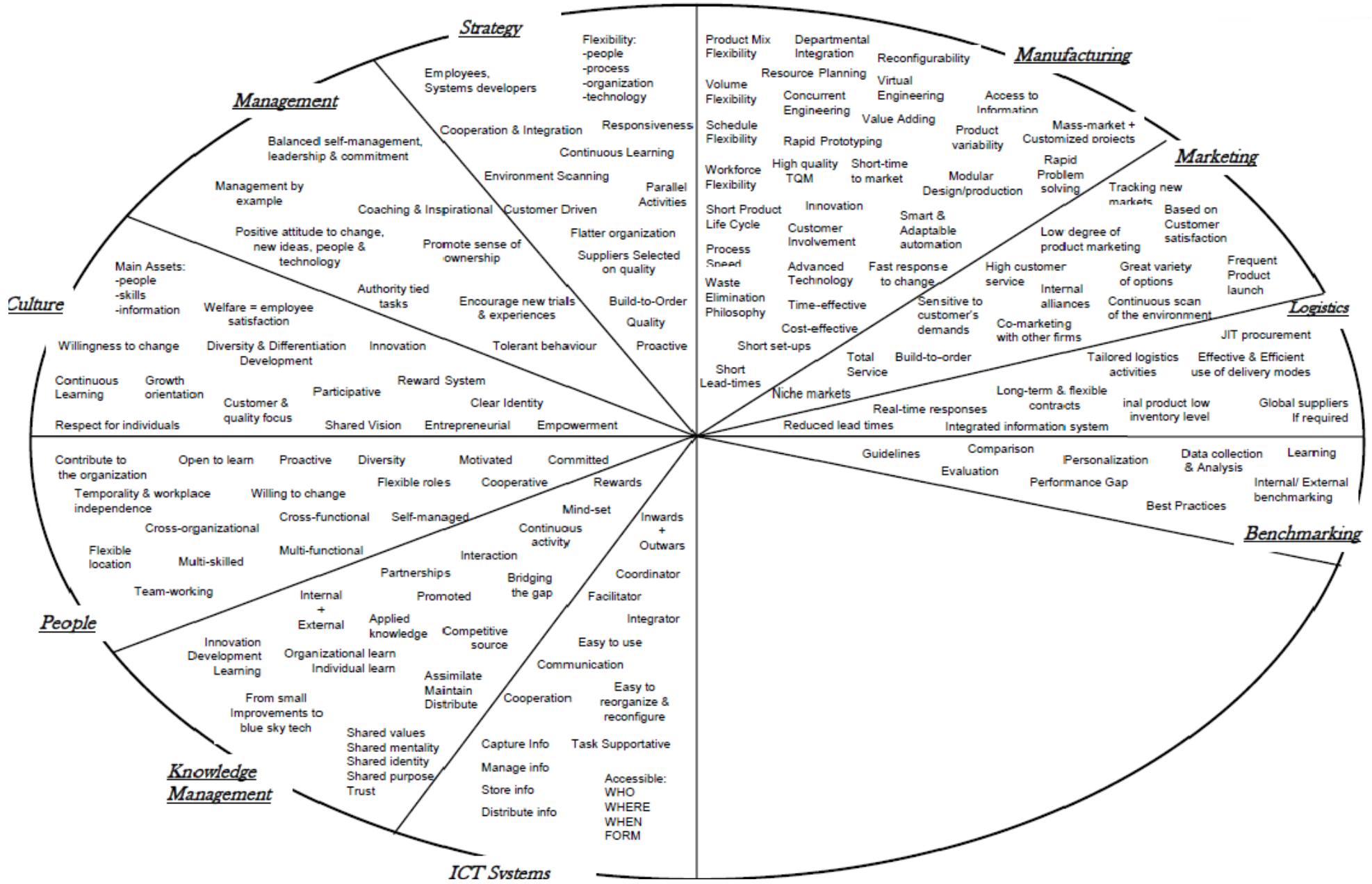



Figure 13: Dynamic Capabilities Framework including higher and lower organisational level dimensions

# *Chapter 7:*
# *External Interactions; Dynamics of Relationships*

## 7.1 Introduction

Chapter five covered those corporate level dimensions that led organisations and in most cases determined their structures, while chapter six focused on the internal bottom-line operations that allowed the systems to work adequately. Being a cluster member involved internal and external relations; in addition in current global environments, organisations could not compete in isolation and external relationships became a key element of the competitive capability of companies. Yusuf and Burnes (1999) highlighted that dynamic or agile capabilities were necessary but not sufficient conditions for agility and that it was crucial that those capabilities became a strategic part of the different organisational dimensions; in other words, these capabilities had no use unless organisations were able to deploy them. The fluctuating conditions of current markets advised the deployment of dynamic tools and capabilities (Jain et al 2008). The interaction with external organisations became a strategic dimension for some companies and therefore an area that required to be included in this research.

In the 1980s and 1990s strategic partnerships were perceived as an opportunity only available for corporate giants. Market globalisation followed by the intensification of the foreign competition, shortened product life cycles, sourcing capital investment cost and the continuous demand for new technologies changed the way companies compete nowadays (Vyas et al 1995); It became ever more obvious that competitive advantage derived from the collective capabilities of the network of associated companies whether companies (Christopher 1998, Lambert et al 1998); Christopher & Towill (2001) described dynamic external relationships as a prerequisite for success in markets with these characteristics. With regards to the structure of these organisations, it was possible to observe a move away from traditional command and control, vertical hierarchy based organisational forms towards one structured configurations organised around processes rather than functional, product or geographical considerations. There was also a change from operations centred on mass marketing and production to mass customisation, which resulted in a clear horizontal integration approach with extensive outsourcing

and inter-firm integration able to deal with shorter response time and ever-growing product and service variety (van Hoek et al 2001).

Van Hoek et al (2001) and Simchi-Levi et al (2003) summarised two requirements to achieve competitive advantage in the modern business environment; first, organisations had to be aligned with their direct suppliers, the suppliers of these suppliers, their customers, and the customers of the customers, even with their competitors so as to simplify and increase the efficiency of operations. Secondly, organisations had to work together to obtain a greater value and level of dynamism beyond the individual level; all companies involved (suppliers, manufacturers, distributors and customers) had to contribute in the process of achieving integrated dynamic partners. Much of the previous debate regarding strategic alliances had traditionally focused on alliances between two companies, nevertheless there was an increasing recognition that only two companies hardly could respond to market demands and multi-company alliances were more realistic (Elmuti & Kathawala 2001)

## 7.2 Supply Chain Networks

Supply chain networks and the management of these networks were one of the most studied types of partnerships. Goldman et al (1995) explained that the main contributions of this type of chain were the enrichment of the customers by suppliers, reward of the suppliers by the customers and the linkage of business process between both of them. Nevertheless, there were numerous descriptions of the concept with differentiated emphasis; some of these definitions and their theoretical foundation were gathered by Wolf (2008) (see Table 19).

Table 19: Summary of supply chain definitions along the years (Wolf, 2008)

Table 19: Summary of supply chain definitions along the years (Wolf, 2008) (continuation)



A supply chain represented an association of a group of companies collaborating together to achieve mutually agreed goal (Christopher 2000, Jain et al 2008). For these collaborations to work adequately, they had to be based on mutual trust, openness, shared risks and shared rewards which would make possible the enhancement of the performance compared to the individual activity and consequently to develop competitive advantage (Hogarth-Scott 1999, Golicic & Mentzer 2006). Supply chain management was a well established practice and along the years it helped gain competitive advantage to those companies able to develop excellence in its practice. Yet, market volatility and uncertainty demanded a major re-assessment of SCM in order to incorporate it to this new global business environment. Dove

(1999) explained that there were 8 domains in which companies had to excel on to master change; creation, capacity, capability, reconfiguration, migration, performance, improvement and recovery. Ideally, companies optimised their ability to react to change by creating win-win situations (Bal et al, 1999).

Advanced SC networks required developing dynamic and flexible approaches that would allow them to deal with shifts in demand and technology. Christopher and Holweg (2011) explained that organisations needed to move away from an emphasis on attaining 'lowest global cost' to serving the centres within a flexible SC structure, which meant favouring 'local for local' over 'single global sourcing'. According to them, the obvious raised question was whether or not the current SCM models were fit for purpose. Jan et al (1999) described agile network alliances as "network enabled relationships between organisations that can be formed and dissolved rapidly but while in operation enable on affiliation between parties that is focused on enriching customers mastering change, leveraging resources and thus cooperating to compete for mutual commercial benefit". They defended that virtual teams were the instrument in enabling this partnership and implementing strategies for reducing turbulence within the supply chain. Figure 14 illustrated the different elements of an agile supply chain according to this view.



Figure 14: Elements of an Agile Supply Chain (van Hoek 2001)

Christopher (2000) defined supply chain agility as “business-wide capability that embraces organisational structures, information systems, logistics processes, in particular, mindsets”. According to this view, the way agility was put into practice by members was characterised by cost-effectiveness and the competitiveness of the SC. As result, agility alone did not develop a more competitive advantage in SC, but it was rather a prerequisite for the competition. Christopher (2000) listed the characteristics of this type of networks:

1. Market sensitive on capturing actual customer requirements with direct feed-forward methods and not to rely much on market forecast
2. Extensive demand and supply information sharing between buyer and suppliers creating a virtual supply chain where a great amount of physical inventory was replaced with information.
3. Deep process integration between partners looking for truly collaborative methods and common systems between them.
4. Shared targets

To compete in uncertain markets and business environments, agile supply chains needed to build and exploit distinctive capabilities that allowed them to identify changes and rapidly respond to them efficiently and effectively defining corporate objectives, implementing different processes and using distinct facilities to achieve the same goals as well as completing activities as quickly as possible (Sharp et al 1999, Christopher 2000, Giachetti et al 2003).

Ismail and Sharifi (2005) pointed out that in order to develop all necessary supply chain and agile capabilities, it was important to consider the chain as a single organism and its members required to be able to rapidly align to the network with efficiently swift operations and satisfy the turbulent requirements of customers; according to them, the emphasis lay on creating network structures which were responsive as well as proactive to changes and capable of exploiting new emerging business opportunities. Following the same view, van Hoek (2005) mentioned three areas that companies had to outclass in order to become successful agile chains; mastering and benefiting from variance, rapid responsiveness as well as unique and personal responsiveness. As a result, information exchange became essential to make this possible, Malhotra et al (2005) explained that supply chain members were connected via interlinked processes and functions that supported and facilitated the exchange of information as well as

building IT infrastructure that made possible the smooth processing of information gathered from the various members to generate new knowledge. Lin et al (2006) defended that agile supply chains were composed of operationally interdependent organisations linked via a feedback forward flow of materials and feedback flow of information which promoted adaptability, flexibility, and had the capability to take actions and quickly and effectively replied to changing markets. Agile structures under this approach were based on four principles (Yousuff 1993, Sharp et al 1999, Lin et al 2006); mastering change and uncertainty, innovation management structure and virtual organisation, cooperative relationships as well as flexible and intelligent technologies.

These four principles were the pillars of this perspective and consequently common to all chains and organisations; nevertheless, there were characteristics, circumstances, experiences and specific changes that were unique to each organisation and would determine the way to react to uncertain and dynamic environments (Lin et al 2006). The nature of the sector was also important as traditional and high-tech industries faced different challenges and demands; traditional industries were characterised by requirements for speed, flexibility, increased product diversity and customisation, while high-tech industries were represented by products with short life cycles, a high degree of market volatility, uncertainty in demand and unreliability in supply. The need for integrated SC became prevalent; building agile supply chains did not denote a small scale of continuous improvement but radical changes and a completely distinctive way of understanding and doing business. (Jain et al 2008).

The management of agile processes and relationships involved the supervision of change in the other areas such as relationships and organisational structures; the trend in the last decade was towards integration via virtual organisations which demanded high level of coordination and management skills (Christopher and Towill, 2001). Supply chain coordination and integration were essential elements for responsive and innovative sectors nevertheless, the form or configuration adopted by the members varied depending on the environment in which they competed and their internal characteristics; supply chains extended from ad-hoc temporal alliances to master-servant long-term relationships with suppliers and customers. These differences in the level of interaction and sharing determined the development and achievement of competitive and business objectives as well as the impact of change drivers over the operations (Yusuf et al 2003).

Following this same idea of integration as the key enabler of agility within supply chains, Ismail and Sharifi (2006) defined agility as “the ability of the SC as a whole and its individual members to rapidly align the network and its operations to the dynamic and turbulent requirements of the demand network". This definition addresses how organisations can improve their internal dynamism by getting support from the supply and demand ends of the network. This would require the physical alignment of the network (See Figure 15 and 16), a good understanding of the demands of the market and existing competition, their ability to reconfigure the production processes within the supply chain, and the willingness of the members to reconfigure the production processes within the SC members (see Figure 17).



Figure 15: An integrated model for the design of agile supply chains (Christopher & Towill, 2001)

van Hoek (2001) advised that not all supply chains might benefit from adopting an agile approach and described those types of supply chains that benefited the most from it;

- Project orientated or supply chains with customised operations that required flexibility instead of standardisation.
- Customer orientated or build-to-order supply chains.
- Supply chains that were process focused rather than product focused.
- Supply chains that were horizontal rather than vertical.

- Those supply chains that would benefit from integrating return flow of product and were equipped to upgrading products during their life span
- Supply chains that relied on the importance of cross-company interfaces (teams) and reconfigurability
- Supply chains where the quantities and the flow of product were less important than the information flow
- Chains that sought cycle time compression
- Supply chains that sought compensation based on added value and network relations in the supply chain



Figure 17: Conceptual model of agile supply chains (Lin et al 2006)

Lin et al (2006) developed a conceptual model summarising previous views; the model designates market forces as drivers of agility, and integration and collaboration as the main enablers of an adequate and satisfactory implementation (see Figure 18).

Figure 17: A framework for Agile Supply Chains (Ismail & Sharifi, 2006)

Supply chains were large systems which put together various organisations with overlapping and conflicting interests. In order to get the most of existing business opportunities, these networks were required to structure, decompose and restructure according the demands of the customer. If this process was going to be successful, market constraints and speed of response were key considerations; Ismail and Sharifi (2006) believed that the satisfactory implementation of agile systems depended on the detailed design of processes following the particular characteristics of the chain or network considered.

Barimachi et al (2007) developed a supply chain portfolio analysis aiming at helping organisations to get a deeper understanding and a clearer direction on how they should approach supply chain agility depending on different possible scenarios. The model analyses the supply chain based on 4 different categories depending on the purchasing objectives and attributes of the market. Organisations could use the framework to acknowledge the most appropriate strategy by identifying their purchasing objectives and the characteristics of the market they competed in. Nevertheless this classification was not definitive and many organisations required a combination of approaches to create agility (see Figure 18).

Figure 18: Agile Supply Chain portfolio analysis (Baramichai et al 2007)

Postponement was another characteristic of an agile supply chain as it was the norm to defer the start of activities until the time there was a real and specific demand for it (Collin & Lorenzin, 2005). The aim of the postponement was to enhance the efficiency of the network by bringing product differentiation closer to the end customer (Soosay et al, 2008). Table 20 summarised the different dynamic capabilities considered by the scholars as enablers of agility within the supply chains; Table 20 illustrated how supply chains went from being merely integration systems where the main emphasis was on cost reduction, to be a dimension that could facilitate responsiveness, master change and enhance customer satisfaction when chain members had common objectives and developed relationships based on trust, visibility and synchronisation as responses to their interdependence. This type of supply chain tended to be a long-term relationship with stable contracts and inter-organisational exchanges; dynamic environments and customised project also required reconfigurable systems so members could be easily included or removed from them.

Table 20: Identification and evolution of dynamic capabilities within supply chains

| Dynamic Capabilities | Authors |
|---|---|
| Process/Function integration | Womack et al 1990, Hodge et al 1996, Cooper et al 1997, van Hoek et 2001, Yusuf et al 2003 |
| Cooperation | Hill 1994, Goldman et al 1995, Christopher 2000, Christopher & Towill 2001, Mentzer 2001, van Hoek et al 2001, Yusuf et al 2003, Lin et al 2006 |
| Sharing | Goldman et al 1995 |
| Cost reduction | Goldman et al 1995, Colin & Lorenzin 2006, Baramichai et al 2007, Jain et al 2008 |
| Master change | Goldman et al 1995, Yusuf et al 2003 |
| Based on competences | Goldman et al 1995, Sharp et al 1999, Christopher 2000, Jain et al 2008 |
| Responsiveness | Goldman et al 1995, Sharp et al 1999, Christopher 2000, van Hoek 2005, Jain et al 2008 |
| Customer driven | Goldman et al 1995, Christopher 2000, Christopher & Towill 2001, van Hoek et al 2001, Yusuf et al 2003, Jin et al 2006 |
| Dynamic | Fisher 1997, Zhou & Benton 2007, Jain et al 2008 |
| Information and material flow | Naylor et al 1999, Christopher 2000, Vrijhoef & Koskela 2000, Min & Zhou 2002, Lin et al 2006 |
| Speed | Sharp et al 1999, Christopher 2000, van Hoek et al 2001, Lin et al 2006, Jain et al 2008 |
| Flexibility | Sharp et al 1999, Christopher 2000, van Hoek et al 2001, Baramichai et al 2007, Jain et al 2008 |
| Common objectives | Bal et al 1999, Christopher 2000, Collin & Lorenzin 2006 |
| Shared ICT infrastructure | Bal et al 1999, Christopher 2000, Yusuf et al 2003, Malhotra et al 2005, Collin & Lorenzin 2006 |
| Postponement (tailored) | Naylor te al 1999, van Hoek et al 2001, Collin & Lorenzin 2006 |
| Trust | Hogarth-Scott 1999, Golicic & Mentzer 2006, Soosay et al 2008 |
| Competitiveness | Hogarth-Scott 1999, Colin & Lorenzin 2006, Jain et al 2008, Soosay et al 2008, Christopher-Holweg 2011 |
| Easy to plug in & out | Bal et al 1999, Baramichai et al 2007, Pan & Nagi 2010 |
| Transparency / Visibility | Vrijhoef & Koskela 2000, Christopher & Towill 2001, Yusuf et al 2003 |
| Planning and control | Vrijhoef & Koskela 2000, Yusuf et al 2003, Collin & Lorenzin 2006 |
| Interdependencies | Vrijhoef & Koskela 2000, Malhotra et al 2005, Golicic & Mentzer 2006, Lin et al 2006 |
| Project orientated | Van Hoek et al 2001 |
| Network integration | Van Hoek et al 2001, Yusuf et al 2003, Lin et al 2006, Baramichai et al 2007, Jain et al 2008 |

Table 20: Identification and evolution of dynamic capabilities within supply chains

| Dynamic Capabilities | Authors |
|---|---|
| Extensive outsourcing | Van Hoek et al 2001, Christopher & Holweg 2011 |
| Synchronisation | Christopher & Towill 2001, Min & Zhou 2002 |
| Multi-directional | Yusuf et al 2003 |
| Suppliers & Customers' involvement | Scmchi-Levi et al 2003 |
| Reconfigurable | Ismail & Sharifi 2006 |
| Open communication | Lin et al 2006 |

## 7.3 Alliances

In the 1990s, marketers and scholars acknowledged an evident transformation of the nature of business relationships; market related motives became the definitive drives of strategy decisions such as new market entry, structure and position, timing to enter new markets… (Varadarajan & Cunningham 1995, Das & Teng 2000, Townsend 2003).

According to the resource-based theory, alliances facilitated businesses to achieve key strategic objectives by enhancing or maintaining their competitiveness and therefore by determining the necessary levels of income generation and profits to surpass the competition. Maintaining sources of competitive advantage demanded developing or acquiring assets which were valuable, durable, unclear, and difficult to replicate (Day 1995). Effective relationships sought to minimise cost and create value (Dyer & Singh, 1998); the objective of these alliances was to combine resources capable of functioning across traditional boundaries by reacting to both the external environment and internal goals (achieving a sustained competitive advantage in the marketplace and/or longevity and performance measures, Townsend 2003) of individual organisations, then it was important to have the adequate means to establish the nature and extent the success of these objectives. Functions and structures varied depending on the strategic considerations and parties involved (Rao & Reddy, 1995). These alliances went from informal handshake agreements to formal agreements with very detailed contracts, but most of these agreements focused on three aspects; marketing and sales, product and manufacturing, technology and know-how, or a combination of them (Elmuti & Kathawala 2001). A summary of these considerations was illustrated by Lynch (Figure 19).

Figure 19: alliance types based on patterns in products, markets and technologies (Lynch, 1993)

According to Drucker (1996), the greatest change in corporate culture during the 1990s was the fact that companies sought to speed up the internal growth not through ownership but strategic partnerships. The definition for strategic alliances evolved along the years becoming a complex concept;

Burguess et al (1993) defined strategic alliances as “a long-term explicit contractual agreement pertaining to an exchange and/or combination of some, but not all, of a firm’s resources with one or more firms”.

Yoshino and Ragan (1995) explained that a strategic alliance involved at least two or more firms which remained legally independent after the alliance was formed, shared the benefits and management control over the performance of the allocated activities and made continuing contributions in one or more strategic areas.

Wheelen & Hungar (2000) described strategic alliances as “an agreement between firms to do business together in ways that go beyond normal company-to-company dealings but fall short of a merger or full partners”, in other words,” two or more companies or business units that work together to achieve strategically significant objectives that are mutually beneficial by improving organisations operations and competitiveness”.

Todeka and Knoke (2005) explained strategic alliances as “not only trading partnerships that enhance effectiveness of the participating firm’s competitive strategies by providing resource exchanges as new business forms that enable the partners to improve and control their business relationships… as well as

develop their operational flexibility and realisation of market potential". In their opinion, alliances could also help with organisational prestige, reputation, status and brand name recognition. Based on these definitions the following characteristics were highlighted (Varadarajan & Cunningham 1995, Beverland & Bretherton 2001,);

- Formalised contract
- Mutually beneficial
- Sharing of complementary assets looking for residual returns from a business activity
- Market entry-position related objectives
- Product-related motives
- Market structure modification
- Market entry-timing
- Resource use efficiency-related reasons
- Resource extension and minimisation of risks
- Skills enhancements

Strategic alliances needed to deal with information asymmetry between partners; in some instances this implied the standardisation of production processes, joint strategic planning, sharing database and knowledge distribution as well as exploring new market opportunities together. Koza and Lewing (1998) suggested that those industries characterised by dynamic changes were more likely to engage on alliance formation compared to other industries with more stable environments. The research on alliance formation traditionally emphasised the generosity and fit of resources as the reason for a partner selection processes favouring some specific companies with abundant resources and well-matched interests (Levine & White 1961, Pfeffer & Salancik 1978, Eisenhardt & Schoonhoven 1996, Li & Atuahene-Gima 2002). As companies committed their resources to the partnership, the process and method of control were considered crucial for the alliance's long-term development as control/power conflicts had an impact on the structure and characteristics of the partnership as well as its performance (Gerinder & Herbert, 1989). Beverland and Bretherton (2001) supported this view and declared that most strategic alliances sought out control of their environments by protecting resources, minimising uncertainty, maintaining market advantage, acquiring knowledge and securing important resources.

Vyas et al (1995) explained how alliances were built on relationships and these relationships made it possible to establish terms of agreement and the negotiation process resulting in high level of trust based on past deals. They identified the differences between traditional management styles compared to new styles which involved alliances as a strategic dimension (see Table 21). Vyas et al also developed a model which acknowledged the steps and variables in the functioning of a typical strategic alliance. The model stressed four critical considerations; short term as well as long term goal compatibility, synergy among partners so the final result was greater than the sum of the individual contributions, a clear understanding of what value each member brought into the alliance and the ability to balance the contributions of partners in areas such as product development, manufacturing and marketing so there was not a dominant member.

Table 21: Comparison of traditional management style versus new style for successful strategic alliances (Vyas et al 1995)

Granovetter (1985) talked about an 'embeddedness perspectives' within strategic alliances as they could be described as economic transactions that occur in a social context. Larson (1992) and Uzzi (1996) also included a social dimension to the discussion and explained that the structure and quality of social relationships among companies created access to new business opportunities. The type of network and members involved would determine the potential opportunities; Uzzi called this 'embeddedness' following a definition provided by Marsden; "Embeddedness refers to the fact that exchanges within a group…have an ongoing social structure that…by constraining the set of actions available to the individual actors and by changing the dispositions of the actors toward the actions they may make…". In this definition the concept of embeddedness acted as the coordination mechanism that facilitated the system to work effectively and which involved high levels of trust, transferring of accurate information and joint problem solving arrangements. The challenge arises when there was a low level of embeddedness (trust and cohesion); this would indicate the risk of member withdrawal (Baker et al 1998, Rowley et al 2005, Koka et al 2006). Consequently, selecting the right partners from the very beginning became a critical factor for the success of the partnership, although the selected criteria might vary between the different companies and market sectors (Hitt et al 2000). Townsend (2003) identified two decisive factors to develop successful partnerships; cultural orientation and relational capital which were directly related with commitment and trust considerations.

Trust implied great levels of faith beyond the prospects that reason and experiences could not warrant; trust made possible for partners to collaborate and anticipate that others would positively respond to the exchange of resources and information while minimising opportunist behaviours. When trust was developed among organisations, hierarchical control was no longer contemplated as necessary (Murray & Kotabe, 2005). Yet, contracts were very much central parts of these relationships acting as an enforcement and definition of the roles and responsibilities of each party (Macaulay, 1963). Contracts within partnerships were likely to be characterised by long-term duration, central administrative structures and problem or disagreement solving mechanisms as well as the specified exchange of information, technological knowledge and capabilities (Mayer & Teece, 2008)

Elmuti & Kathawala (2001) warned that strategic alliances also entailed problems and risks; clash of cultures, lack of trust, lack of clear goals and objectives, lack of coordination between management and

teams, differences in operating procedures and attitudes among partners, relational risk, performance risk, generation of local or global competition; these were only some of the examples of the challenges that managers faced during the duration of these partnerships. Considering these challenges, Elmuti and Kathawala proposed a series of enablers that might facilitate this transition; senior management commitment, similarities of management philosophies, effective and strong management team, frequent performance feedback, clearly defined and shared goals and objectives, thorough planning, clearly understood roles, international vision, partner selection criteria and communication between partners.

The generic model (Figure 20) for quality management presented by Mellat-Parast and Digman (2008) addressed those different issues by introducing quality management and learning activities as the way to develop successful alliances.



Figure 20: generic model for quality management in strategic alliances (Mellat-Parast & Digman, 2008)

Co-branding was a novel form of alliance that became popular when two or more firms decided to join forces together to approach a specific geographical area or period; the idea behind this concept was to add value to the brand image of each of the members by going together into the market place (Rich 2003). Keller (2003) explained that co-branding was a leveraging process which linked the brand of an organisation to the brand of another or others' entity creating a new set of associations; companies used diverse strategies to influence their brands; line extension, expansion into niche markets, brand extension and co-branding (Godeswar, 2008)

Volatile external environments required agile internal processes, but as we mentioned at the beginning of the chapter, companies did not compete in isolation and the dynamism of companies required spreading to all members in the network or partnership. Rao and Reddy (1995) understood dynamic approaches as a sequential process resulting from the outcome of alterations in the external resources and competition.

Dynamic alliances as "a temporary organisation of member enterprises formed to exploit fast changing market opportunities" (MiKhailov 2002, Li & Liao, 2007). Dynamic alliances were flexible, adaptable to alterations of the external environment and characterised by the sharing of costs, competencies and resources relationships aiming at gaining access to new business opportunities (Martinez et al 2001, Li & Liao 2007). Dynamic markets translated into shorter product life cycles and reductions on the business opportunity window and project duration; this translated into fewer opportunities for partners to take advantage of synergies and learning prospects. Other factors that could also influence the duration of the partnerships were partner's characteristics, prior relationships among partners, prior terminations, prior alliance experiences and trust (Pangarkar, 2003). Dynamic alliances had their specific problems and these risks were different in nature depending on the specific industry or characteristics of the market (Li & Liao 2007);

- Market risk as a result of the impact of demand fluctuation, competition risks and spill-over effect risks
- Financial risks consequence of interest and exchange rate risk
- Political risks concerning social and policy risks
- Natural risks
- Competency risks including quality, cost, time or technology risks
- Relational risks concerning trust, moral, motivation, communication and organisational risks
- Investment risks or investment recovery risks
- Operational risks consequence of investment implementation, information sharing, as well as information integration and information conveyance risks.

Dynamic alliances required dynamic capabilities specific to the external relationships; Table 22 illustrated how partnerships evolved from being contract-based rigid relationships based on high-level control practices to long-term relationships characterized by a gradual strategic integration as companies had common objectives and were ready to commit and share resources while developing strong informal relationships. These alliances aimed to create value added activities, reduce time to market and to exchange knowledge as a means to increase their overall competitiveness. Alliances resulted in being more efficient when companies shared a similar philosophy and culture, when members were selected

based on the core competencies and when they followed an open minded management style. The size and intricacy of these partnerships grew along the years leading to the development of various criteria for member selection as a means to facilitate the identification and evaluation of possible new members; dynamic environments implied flexible and open alliances ready for new or temporal business opportunities and with easy to reconfigure infrastructure and administration practices.

Table 22: Identification and evolution of dynamic capabilities within alliances

| Dynamic Capabilities | Authors |
|---|---|
| Contract based | Macaulay 1963, Burguess et al 1993, Drago 1997, Mayer & Teece 2008 |
| Embeddedness | Granovetter 1985, Uzzi 1996, Greve et al 2010 |
| High level of control | Gerinder & Herbet 1989, Elmuti & Kathawala 2001, Kauser & Shaw 2004, Todeva & Knoke 2005 |
| Social relationships | Larson 1992, Vyas et al 1995, Uzzi 1996, Townsend 2003, Todeva & Knoke 2005, Gerve et al 2010 |
| Long term relationships | Burguess et al 1993, Vyas et al 1995, Elmuti & Kathawala 2001, Pangarkar 2003, Todeva & Knoke 2005 |
| Gradual strategic integration | Burgues et al 1993, Koza & Lewin 1995, Vyas et al 1995, Elmuti & Kathawala 2001 |
| Matched interest | Burgues et al 1993, Rhoades & Lush 1997, Wheelen & Hungar 2000, Wheelen & Hungar 2000, Elmuti & Kathawala 2001 |
| Resource and capabilities driven | Burgues et al 1993, Rhoades & Lush 1997, Wheelen & Hungar 2000, Wheelen & Hungar 2000, Elmuti & Kathawala 2001 |
| Inter-organisational exchanges | Burguess et al 1993, Vyas et al 1995, Drago 1997 |
| Market networks | Lynch 1993, Elmuti & Kathawala 2001, Rich 2003 |
| Bargaining power; investment level | Vyas et al 1995 |
| Time to market | Varadarajan & Cunningham 1995 |
| Federal structure of communication | Vyas et al 1995, Uzzi 1996 |
| Value added activities | Vyas et al 1995, Dyer & Shing 1998, Townsend 2003 |
| Opportunistic | Machovec 1995, Kizner 1997, Das & Teng 2000, Beverland & Bretherton 2001 |
| Market focused | Varadarajan & Cunningham 1995, Wheelen & Hungar 2000, Elmuti & Kathawala 2001, Mikhailov 2002, Li & Lao 2007 |
| Knowledge transfer | Koza & Lewin 1995, Beverland & Bretherton 2001, Townsend 2003 |

Table 22: Identification and evolution of dynamic capabilities within alliances (continuation)

| Dynamic Capabilities | Authors |
|---|---|
| Actions coordination: market signals | Rao & Reddy 1995, Martinez et al 2001, Li & Lao 2007, Greve et al 2010 |
| Similar philosophy/culture | Vyas et al 1995, Elmuti & Kathawala 2001 |
| Based on core competences | Vyas et al 1995, Townsend 2003, Li & Lao 2007 |
| Open minded management | Vyas et al 1995, Townsend 2003 |
| Complexity | Rhoades & Lush 1997, Townsend 2003, Kauser & Shaw 2004, Mayer & Teece 2008 |
| Partner selection criteria | Hitt et al 2000, Elmuti & Kathawala 2001 |
| Performance: productivity | Elmuti & Kathawala 2001, Townsend 2003, Kauser & Shaw 2004 |
| Responsible for all or part of the PLC | Mikhailov 2002, Li & Lao 2007, Mayer & Teece 2008 |
| Trust & Cohesion | Pangarkar 2003, Townsend 2003, Murray & Kotabe 2005, Mellat-Parast & Digman 2008, Greve et al 2010 |
| Network identity | Rich 2003, Todeva & Knoke 2005 |
| Project or activity based | Todeva & Knoke 2005 |
| Easy to plug in and out | Murray and Kotabe 2005 |
| No costly to enter or leave | Murray and Kotabe 2005 |
| Niche markets | Ghodeswar 2008 |

## 7.4 CONCLUSION

As mentioned in the conclusion of chapter three, in order to understand the characteristics and behaviours of a specific cluster, it was necessary to understand the conduct of individual organisation as well as their relationships with the external environment; their dealings within and outside the cluster. Chapter four indicated that organisations were formed by higher and lower level dimensions, and both levels needed be analysed in order to understand the competitiveness of a firm. Chapter five analysed the higher level dimensions and identified the dynamic capabilities for each of these dimensions, while chapter six did the same for the lower level dimensions. Consequently, this chapter aimed to look at those dimensions linking the company with the external environment; the supply chain represented those relationships with companies outside the cluster, while alliances signified those relationships among the cluster members.

Following the same procedure as in chapter five and six, this chapter provided a chronological list of dynamic capabilities for each of the dimensions; the emphasis in these external relationships mirrored the interpretation of previous dynamic capability tables where the emphasis moved away from operationally focused activities seeking cost reduction objectives towards more strategic dimensions where companies joined forces together to enhance their competitiveness and to gain new business opportunities in a market place where flexibility was key.

These two dimensions completed the model as they complemented all the dimensions previously indicated by the literature review (see Figure 21)

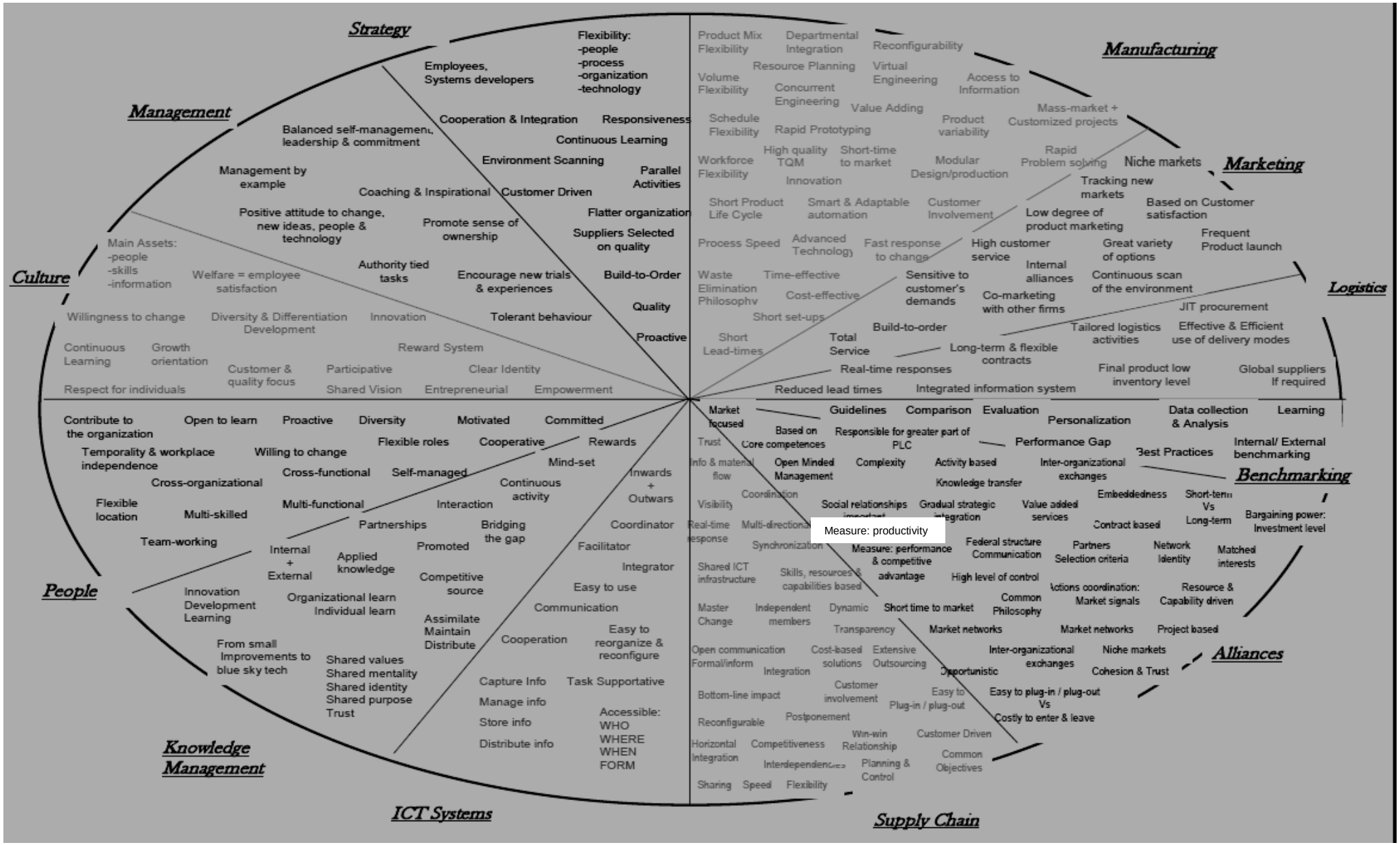



Figure 21: Complete dynamic capabilities model including external relationships

# *Chapter 8: Framework*

## 8.1 Introduction

In the dynamic marketplace, competitive advantage was obtained by promoting knowledge and learning as well as managing strategic change. Building this advantage in this kind of environment involved a continuous flow of knowledge within and outside the organisation; this would require developing an organisation that was borderless, fluid, interactive and flexible. Partnerships and alliances proved to be an additional means of competing in the market place; organisations worked together towards common objectives and by sharing information and expertise they were able to undertake projects that otherwise would be out of reach for the individual organisations.

Clusters were a type of alliance that increased the competitiveness of the regions and the companies that collocated in a specific geographical location. Chapter three suggested to analyse clusters considering the individual organisations within it and how they interrelated with the external environment. These features were studied in Chapters five, six and seven; Chapter five analysed the higher organisational level and the dimensions related to this level. Chapter six covered the lower organisational levels and the dimensions associated with them, while Chapter seven analysed the dimensions linking the company with the external environment. These chapters also identified the dynamic capabilities within each of the dimensions that were later transferred into the framework. Consequently, this Chapter introduced the original framework designed to evaluate the dynamism of each organisational dimension based on the dynamic capabilities previously identified as well as provided an insight into the overall flexibility of the organisation.

## 8.2 Framework

Existing models focused on measuring the dynamism of specific internal dimensions without taking into consideration the dynamism of the organisation as a whole, its relationships with the external environment or its capability to adapt and evolve over time (Meredith and Francis, 2000). Bringing all dimensions together within a single model provided a complete view of the organisation and its overall

flexibility. A generic model applicable to all industry and marketplaces was created as starting point and that was why the framework had a circular shape representing the interdependence and equal weight of all twelve components; nevertheless, specific dimensions might have a more relevant role than others depending on the industry sector or marketplace, and this was represented in the level of dynamism measured by the framework for each of the dimensions.

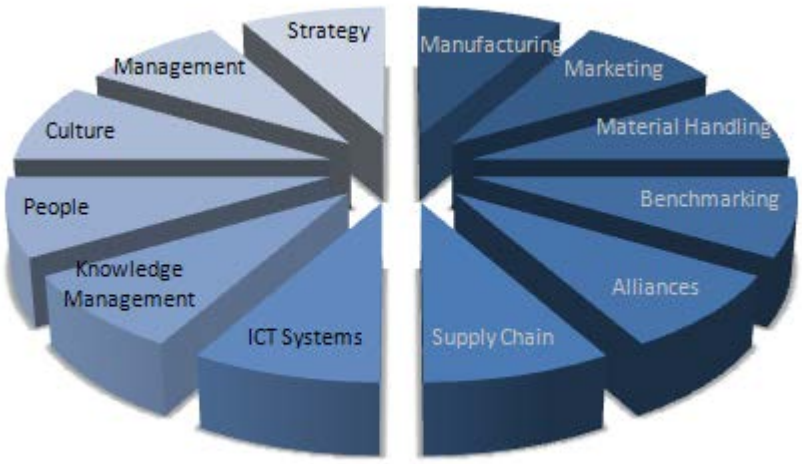



Figure 22: Organisational dynamics, systems reference model

Figure 23 provided a more detailed view of the framework where the dynamic capabilities for each of the dimensions were made visible (note that Figure 23 showed an elliptical shape as the only way to accommodate all correspondent attributes into each segment. In this figure, different colours were given to each dimension to facilitate differentiation).


Figure 23; Organisational dynamics, dimensions and capabilities reference model

A questionnaire was designed to identify what capabilities were already actively implemented by the company; these activities and behaviours were directly related with dynamic capabilities within the framework. In addition, participants were asked to measure each response following the indicated scale of importance or rank-order scales questions; this helped acknowledge the level of flexibility of those activities and behaviours (high, medium or low); consequently, those activities or behaviours which were actively implemented or with high rate of flexibility were coloured in pink, those with medium range of flexibility in orange, activities/behaviours not implemented or with low degree of flexibility in blue and those activities with no clear indication of their level of flexibility or not applicable to that company were coloured as grey (see Figure 24).

The cluster, as one entity, was measured by aggregating all individual results; 24 companies filled the questionnaire, thus capabilities with 8 or lower number of response were considered as low and coloured in blue, capabilities with 9 to 15 responses were considered as medium and coloured in orange, and capabilities with more than 16 responses were considered as highly dynamic and therefore coloured in pink.

In addition to the identified activities, a brief analysis of the data was written of the top of the model for each company. This analysis facilitated a rapid overview of results among the different companies. The same process was followed for each of the 24 replies.

In summary, the coloured framework provided a more accurate view of the flexibility of each of the segment and the company as a whole, but especially it helped identify behaviour patterns and areas of improvement. Figure 24 represented an example of how one of these frameworks looked like once completed (for further detail on the individual frameworks please see appendix 8.2).

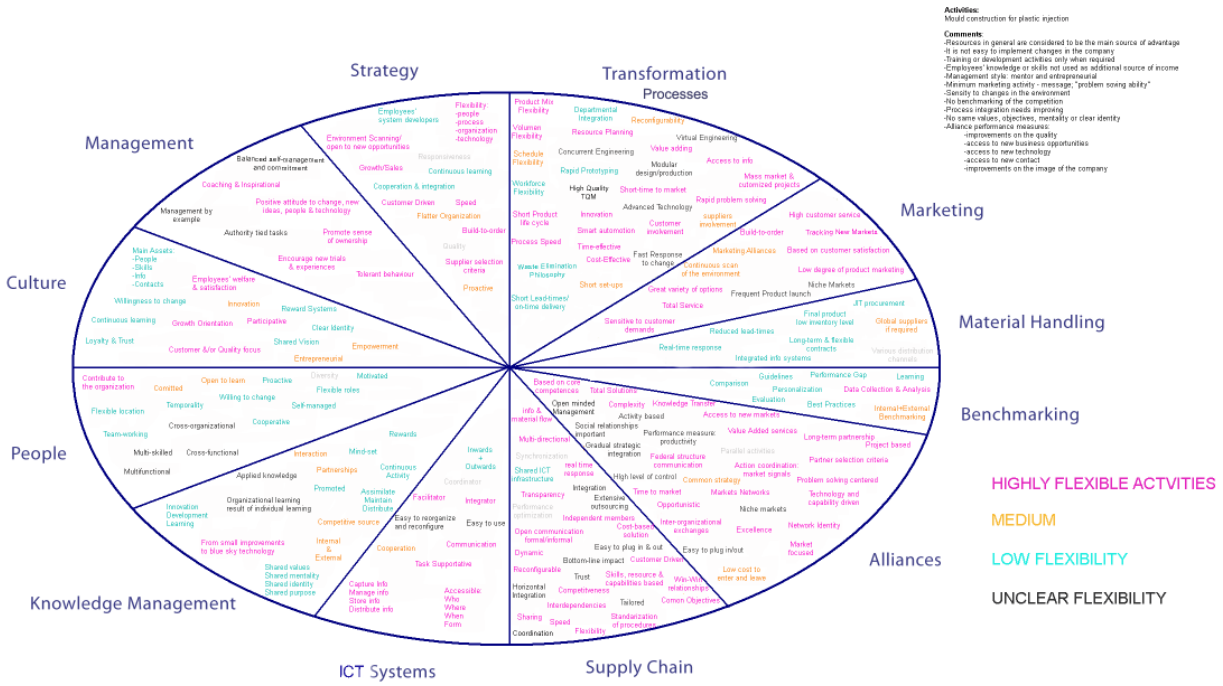



Figure 24: Framework including transferred results of the questionnaire returned by one of the companies.

## 8.3 Comparison of results: Visual Model

The full model provided detailed information about the individual capabilities which could be of benefit for companies trying to improve specific dimensions or to identify problems related to particular activities. Nevertheless, the framework in this form was not ideal as it neither provided a clear an accurate perspective of the overall dynamism of the organisation nor facilitated the comparison of outcomes between the various cluster members or against the cluster in its entirety. In order to address these limitations, a supporting visual model was generated. The following criteria were considered during its conception:

- The visual model needed to keep the same circular shape and segmentation following the main characteristics of the original framework.
- The visual model needed to allow an easy and fast viewing of the flexibility level for each of the segments and the company as a whole.
- The visual model needed to facilitate identifying those areas that required further improvement.

- The visual model needed to allow the comparison of results.
- The visual model needed to be able to be used for the aggregated analysis.

Figures 25 and 26 represented the translation of the framework into a visual model; the visual model consisted of 30 inner rings representing the maximum number of capabilities included within a segment. Each inner ring represented a capability and consequently it was coloured following the colour previously given to it. For those segments with less than 30 capabilities, a ratio was calculated; 30 inner rings but 15 capabilities, in this case its capability was represented by two inner rings. The process was applied to all 24 responding organisations.

This visual model provided a clear and rapid indication of the flexibility level for each individual segment and the company; nevertheless, it did not give any information about the specific capabilities included within them. The visual model also allowed comparing the flexibility levels of the different companies in an easy and rapid manner (see comparison table below).

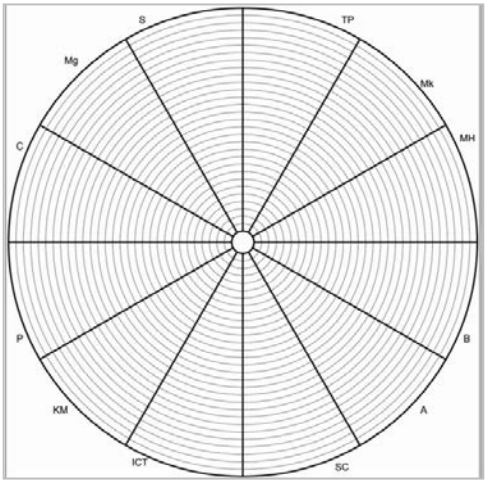



Figure 25: Representation of the Visual Model

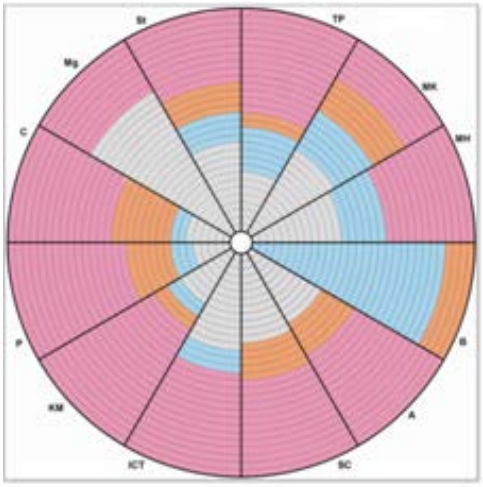



Figure 26: Coloured Visual model

## 8.4 Conclusion

This chapter firstly introduced the dynamic capabilities framework resulting from the literature review carried out in previous chapters and which later on was used to test the hypothesis. Then, the chapter explained in detail how the framework could be used to identify the dynamic capabilities employed by the company and the level of dynamism of each of these capabilities (three coloured based system; blue for low dynamism, orange for medium dynamism and pink for high level of dynamism).
The complete model included a large number of elements, 173, which despite using the three coloured system did not provide a clear insight of the overall dynamism of the organisation or the specific dimensions, consequently a supporting visual model was developed aiming at facilitating a quicker and clearer view of this dynamism.

In summary, the full model was more adequate to get information about specific capabilities while the visual model was easier to use when seeking an overview of the dynamism of a specific dimension or the organisation as a whole.

In order to respond the hypothesis, the framework needed to be tested and therefore the next phase of the research required collecting primary data on the cluster members. Taking into consideration the number of companies approached (80) and the number of dynamic capabilities identified (173), a survey was identified as the most adequate method to collect this data and populate the framework for each individual case and the cluster.

# *Chapter 9: Questionnaire - Gathered Data*

## 9.1 The Survey Method

The previous chapter covered the fundamentals of the literature review in the field of study ending with the development of a conceptual framework which aimed to get an overview of the organisational flexibility as an individual entity as well as a cluster. The next step required testing the framework; in this case, the objective was to opt for an approach that made possible to simplify the complexity of the model while gathering reliable and valid data from a sufficient sample. This chapter intended to explore the dynamism of the companies within the cluster by acknowledging the flexibility level of their operations at individual and group level. Chapters 9 and 10 covered the entire survey process from the selection and design of the questions to the collection and interpretation of results, both at individual and aggregated level. It represented an internal validation of the model.

From all the companies within the Mondragon Group, 80 companies were selected because of their manufacturing activity and geographical proximity. Figure 27 illustrated a map with the geographical location of the main cities and Mondragon while Table 23 revealed the location of these 80 companies with 4 main areas of concentration Mondragon, Bilbao, Donostia and Gazteiz, and with a distance of no more than 70Km between Mondragon and the other 3 main cities.



Figure 27: Map of the Basque Country

Table 23: Company Location

| COMPANY | LOCATION | ACTIVITES |
|---|---|---|

This item has been removed for data protection reasons. The unabridged version of the thesis can be viewed at the Lanchester Library, Coventry University.

Taking into consideration the complexity of framework and the number of companies to be approached, a survey represented the most adequate method to use. Other advantages of this method were explained by Dillman (1978) and Burns (2000);

- A mail survey allowed to include a greater number of members in a sample from a listed population
- Higher probability that the selected recipients received the questionnaire
- Ability to cover larger number of subjects and locations
- Ability to extract larger amount of information from respondents in a few minutes
- Reduction on the problems of availability
- Ability to provide comparable data to standard questions from different resources
- Suitable for close-ended questions and structured questionnaires
- Lower cost for large sample sizes.

## 9.2 Design and Layout of the Questionnaire

The framework consisted of 12 dimensions and 173 capabilities. Since the purpose of the questionnaire was to test the framework by identifying what capabilities were already implemented by the organisations and their level of dynamism, the most appropriate way to do so was by using close-ended and graded scale questions.

During the design process, the first step was to develop questions covering each of the segments as well as all capabilities included within them. Once all the questions were generated, the next

consideration was to think about the actual design of the questionnaire; the questions needed to follow a coherent and consistent direction; as suggested by Burns (2000), "the model questionnaire was designed in 4 parts – the introduction, the warm-up, the body of study and the demographics".

The pre-test version consisted of a 7 pages booklet with 66 six questions and a covering letter informing the recipient about the aim of the study and encouraging him/her to engage with it. This pre-test version was mailed to the advisor within the cluster seeking his opinion on how the subject was approached and the consistency of the questions. His feedback was positive about the direction of the survey but he strongly suggested reducing the number of questions so the booklet wouldn't have more than 5 pages.

Reducing the number of questions, yet collecting all required information involved rewriting most of the questions; the second version of the survey consisted of 47 questions, which finally were reduced even further to 37 in the final version. This final version was once again mailed to the advisor, and after a discussion both agreed that a further reduction in the number of questions would jeopardise the amount and quality of the data necessary to test the framework. Finally, the questions were translated into Spanish and revised with two Spanish colleagues for any possible problem of reverse translation.

## 9.3 Survey Execution

Once the questionnaire was developed, a covering letter was written describing to the recipient the purpose of the research, the deadline and informing them that the study was conducted with the support of Polo Garaia (the innovation centre within the cluster). A database with the names and contact details of the company directors was purchased in order to approach the right people who had a general understanding of how the company worked and therefore who were knowledgeable enough to answer the questions within the survey. After personalising the covering letters and updating the contact details the survey was ready to be launched.

80 envelopes were posted via Royal Mail in June 2009. The first replies started arriving a few weeks later; these dates and data were transferred to a spreadsheet. Most of the replies arrived within the first month but three months later some questionnaires were still being received. A follow up email added a few more responses giving a total number of 24 replies, 30% response rate.

## 9.4 Gathering and Analysis of Results; Single Company

All returned questionnaires were individually analysed; due to the amount and complexity of the data the analysis was done in three stages; first an individual and accumulated analysis of the data using excel, then the individual answers were transferred into the framework, and finally the visual model supporting the framework was generated. The names of the companies were not mentioned in order to maintain the data anonymous; the use of a spreadsheet facilitated the transfer of results and their comparison at later stage. The answers from each company were written in succeeding columns; this resulted to be very useful when adding the answers together, identifying trends or comparing the different approaches adopted by the companies. Find below a summary of the main findings for each individual company (See the full detailed spread in the appendix).

**Company 1**

This first company described itself as a controlled and well structured organisation with a coaching and facilitator management style. The organisation was very sensitive to changes in the external environment, especially at macroeconomic level, which resulted in an intense scanning of the marketplace and benchmarking of the competition. Results from Company 1 indicated that it was more efficient at implementing industry's best practices than utilising other kind of market data, as the only use of this information was to plan for future resources. Their marketing activities were very limited but when they decided to do so, they promoted themselves as an organisation which offered good value for money.

The manager of the company associated value for money with high quality products, therefore aspects such as process efficiency and speed, reconfigurability of activities, short set-up time, prototyping, clients and suppliers' involvement, along with innovation were fundamental to their operations. He also acknowledged the importance of being flexible and able to deliver a wide variety of products. Nevertheless, he recognised that neither the integration of process nor implementing changes was easy for them.

Company 1 understood that collaborations could benefit the organisation and therefore they sought to establish long-term supply chains which would allow them to reduce costs, achieve a greater use of

resources, shorten the time to market of existing products, increase experience in a specific sector as well as to access new technology, knowledge or provide additional services. In order to be able to successfully develop these partnerships, they believed that having a clear identity, maintaining open communication channels and being able to rapidly react to unexpected events was essential for them. Nevertheless, this was not achieved without a cost; modifying suppliers or partners did not come easily or cheaply for them.

Those areas of the organisation covering people or knowledge were not as strong as the alliances or operational areas; the management of the company believed that the employees did not share the same values, objectives and mentality. Moreover, there was not a clear perception of the identity of the brand and the group.

Company 1 used the ICT systems to communicate with the clients and the data was accessible by any employee involved in the project at anytime and anywhere.

**Company 2**

For this second company customer satisfaction was the main driver of the company; consequently, they relied on an efficient management style, the utilisation of advanced technology and prompt deliveries to achieve this. The organisation was sensitive to industry trends but did not perform any market or competitors analysis. Their marketing activities were very limited but they believed to be recognised for offering good value for money products.

The management of Company 2 related value for money with prompt deliveries; therefore aspects such as process efficiency and speed, reconfigurability of activities, prototyping, and innovation were fundamental to their operations. They acknowledged the importance of being flexible and the fact that offering consultancy services could be a source of additional income but they were realistic about the variety of products they could offer and their difficulty to implement changes within the organisation.

The management of the company recognised that collaborations could benefit the organisation but also admitted lacking the relationships and structure necessary to fully exploit them; the norm was to establish medium-term supply chains aimed at accelerating the launch of products in the marketplace,

acquiring new technology or enhancing the service offered. In their opinion, the success of alliances lied on their ability to be open minded, maintain open communication channels and define common objectives as well as their ability to attract new business opportunities, acquire advanced technology and knowledge or to enhance company's reputation.

People and knowledge management were important dimensions for the effective functioning of this company; employees were motivated and willing to learn, nevertheless teams were not used to their full potential. The use of cross-functional or cross-organisational teams could a way to enhance employees' empowerment and contribution. Company 2 had a good ICT infrastructure that could facilitate the smooth running of these teams and the projects as they were already well utilised to improve customer service, follow up of resources and work in progress, purchasing and data management. The only drawback with this system was the fact that information was not fully available.

**Company 3**

The main drivers for Company 3 were sales and profit generation for what they believed in an efficient management style. The organisation was sensitive to trends of the sector and consequently followed the fluctuations of the market and practices used by the competition nevertheless, they did not always know how to fully exploit this information; gathered data was used to predict future clients' request as well as identifying new business opportunities and potential partners but it did not translate into any kind of resource planning activity. Their marketing activities were very limited but they wanted to be recognised for their quality products and meeting tight deliveries.

Company 3 showed a strong operational ability scoring high levels of flexibility in activities such as process efficiency and speed, automation, reconfigurability of activities, short set-ups, prototyping, clients and suppliers' involvement, and innovation. They also acknowledged the importance of having a good departmental integration, being flexible and offering a wide variety of products.

The management was aware of the positive effects that collaborations could have in companies nevertheless, they made limited use of them; they appreciated long-term supply chains which had the ability to get them access to new business opportunities or enhance their experience and knowledge in

the sector. Regarding alliances, the critical aspect of these relationships lied in developing a clear identity, maintaining open channels of communication and being able to rapidly react to changes in the marketplace, while the criteria to evaluate these partnerships was focused on their ability enhance quality or attract new business opportunities.

The management of this company considered continuous learning as an important tool for the efficient functioning of their operations and the motivation of their employees; personal development activities were run on a weekly basis and, knowledge maintenance and distribution procedures were some of the best within the group. Nevertheless, the existing ICT system could be better used to facilitate the internal distribution of data as well as improve purchasing, resource planning and follow up activities.

**Company 4:**

This fourth company specialised in the production of machinery for construction and civil engineering work. Its main objective was to satisfy its clients, to which end they used an efficient but entrepreneurial management style. The organisation was very sensitive to changes in the external environment, especially at macroeconomic level, which resulted in an intense scanning of the marketplace but not in the analysis of their competition on regular basis; gathered data was used to predict future clients' request as well as identifying new business opportunities and potential partners but it was not translated into resource planning activities.

They management made a moderate use of promotional activities with a clear message; "we offer good value for money products and services". In this case value for money implied quality of t products and reliability of delivery; this was achieved through process efficiency and speed, automation, reconfigurability of activities, short set-up time, prototyping, clients and suppliers' involvement, and innovation. They also acknowledged the importance of being flexible but they recognised their inability to offer a great variety of products or to easily implement changes within the organisation.

The management agreed with the positive outcomes of collaborations but only made partial use of them; they sought long-term partnerships with other European organisations as a means to access new business opportunities and technology as well as reduce time to market. Regarding the alliances, they

believed that these relationships should be based on open communication, common objectives and responsiveness. This type of partnership was assessed on the possibility to access new business opportunities, advanced technology, knowledge or expertise in the sector.

This company demonstrated to have rather well defined identity where employees and management shared the same values, mentality and objectives. Knowledge was yet again a significant dimension of the organisation as employees were encouraged to get involved in training or personal development activities, nevertheless these activities were not run as frequently as in other companies in the cluster. The utilisation of the ICT infrastructure was limited as the information improved the relationship with the client as well as purchasing and resource planning activities but it did not follow up work in progress or facilitate data management.

**Company 5:**

The main objective of this organisation was to satisfy its clients and for that they used an efficient and innovative management style. The management was aware of the new business opportunities that the marketplace offered and highlighted the market and competitors' analysis as essential activities to take advantage of these prospects; gathered information was fully utilised to forecast clients' orders, planning of resources as well as identifying new business opportunities and potential new partners. Promotional activities were intense and emphasised the company's ability to solve problems.

The transformation processes or manufacturing operations within company 5 were described as highly flexible which allowed them to offer a great variety of products, build-to-order projects and consultancy services. The main focus of these processes was quality, but resource flexibility, good process integration and dynamic teams were critical for its delivery.

This company tried to get full advantage of its collaborations; they had an established long-term supply chain although it was frequently re-evaluated and new suppliers were considered if necessary. These relationships facilitated accessing new business opportunities, reducing the time to market of products and accessing new technology. Regarding alliances, the fundamentals of these relationships were open communication, flexibility and sharing of common objectives, while their effectiveness were assessed on

their ability to enhance quality, access new business opportunities and reduce the time to market of new products. The emphasis was similar for both types of collaborations.

The management identified employees as the main asset of the organisation; employees were committed to the company and their contributions were essential for the good functioning of all departments nevertheless, there were areas where they could improve such as role flexibility, proactivity, openness to learn or their initiative to initiate new activities. The ICT system was well used but its capacity to hold information was limited.

**Company 6**

This sixth firm was Information removed for data protection reasons. . Its main objective was to generate sales and profits; this was achieved by minimising costs and using advanced technology to produce high quality products. Manufacturing processes were well developed achieving high flexibility levels in activities such as process speed and efficiency, reconfigurability of routines, short set-up time and the involvement of customers and suppliers. Flexibility of operations and variety of products were considered to be essential to compete in this sector, nevertheless the integration of processes was acknowledged as one of the areas needing improvement.

The organisation was very sensitive to changes in the external environment, especially at macroeconomic level, which resulted in an intense scanning of the marketplace and benchmarking of the competition. Despite trying to use the gathered information, the company struggled to maximise its full potential; data was not utilised to forecast or support customer requirements, plan for future resource needs, or implement industry's best practices. Their marketing activities were very limited as they considered themselves as a well recognised organisation providing good value for money products.

The management recognised the important role that collaborations played in mature markets and that was why they were part of a dynamic global supply chain which revised its members on an annual basis and was ready to plug in and out members as necessary. This supply chain emphasised cost reduction, effective use of resources, accessing new technology, knowledge or industry experience as well as

enhancing organisational image or the service provided, but it did not search for accessing new business opportunities. A good ICT infrastructure helped maintain such relationships, though the accessibility of data could be improved by making it more accessible.

Employees were considered to be committed to the company and their contribution was essential for the good functioning of all departments, nevertheless there were areas where employees improved; flexibility of roles, proactivity and self-management. Knowledge was recognised as an important resource to maintain high adaptability and innovation; nevertheless, in this case it lacked continuity and it was isolated in specific individuals reluctant to share it. This could be due to the fact that the company and its employees did not share the same values, mentality or objectives.

**Company 7**

This seventh company represented Information removed for data protection reasons. . Its main focus was also to generate sales and profits. The organisation was very sensitive to changes in the external environment, both at micro and macroeconomic level, which resulted in an intense scanning of the marketplace and benchmarking of the competition; in this case, gathered information was always fully implemented when possible. They made a moderate use of promotional activities with a clear message; “their appliances represented good value for money”. The company was able to deliver good value for money products by minimising costs and taking care of other areas such as process efficiency, speed and integration, reconfigurability of activities, prototyping, clients’ involvement and innovation. They also acknowledged the importance of being flexible and offering a wide variety of products; nevertheless, they recognised that it was not always easy for them to implement changes.

The organisation maintained solid collaborations with its suppliers and partners which allowed them to exploit those relationships effectively. The company maintained medium-term relationships with other suppliers globally; these suppliers sought cost reduction, effective use of resources, and access to new business opportunities, advanced technology, knowledge and experience in the sector as well as reduction in the time to market of products, reduction of risks, process standardisation and offering a total service. Image considerations were not important for them.

Concerning the partnerships, the success of these partnerships were founded on open channels of communication, defining common objectives and not using intermediaries to take full advantage of future opportunities, while the assessment of their performance focused, as in the supply chain, on accessing new business opportunities, technologies, knowledge and experience as well as enhancement of quality. ICT infrastructure played an important role assuring the effective use of the information.

People and knowledge were considered to be key resources available to the company; employees were highly committed to the company and its performance, which translated into an open mentality, willingness to learn and cooperate, supported by their ability to self-management and make decisions. Flexibility was the only weaknesses mentioned for this resource.

**Company 8**

This eighth organisation adopted an entrepreneurial approach where technology was the main asset used to minimise costs and deliver high quality products. The organisation was sensitive to industry trends and consequently followed the fluctuations of the market and practices used by the competition nevertheless, they did not always make the most of this information; in most cases, it was used to have a better understanding of the current and future customer requirements, access new projects and plan the resources accordingly, but it was not considered when identifying new potential partners. Their marketing activities were very limited but they wanted to be known by their ability to solve problems.

Technology was considered to be the prime asset of the organisation and a great effort had been put into developing highly flexible and well integrated activities, which allowed them to offer build-to-order projects and consultancy services despite not having a great variety of products. Monthly personal development activities and ICT infrastructure supported internal operations efficiently.

'Collaborations' within the alliances was an organisational dimension that this company had not exploited yet, as image and offering a total service were the only benefits they searched for. They based these relationships on open communication, flexibility and the avoidance or intermediaries. The supply chain was based on long-term relationships but members were revised on a regular basis; nevertheless,

the provided answers suggested that they only consideration was knowledge and experience in the sector. The ICT infrastructure supported well the significance of these collaborations including clients within the system, following up work in progress and resources as well as facilitating purchasing and data management.

The management believed that the company had a clear identity but it was not sure about sharing the same values, mentalities and objectives with the rest of the employees. Management expressed an open mentality to identify and take advantage of new business opportunities.

**Company 9**

The main objective of company 9 was to generate sales and profits; this was achieved by delivering products on time and an entrepreneurial management style. The sector was rather competitive which compelled the company to keep a close eye on the competition and to implement industry's best practices. However, gathered information was only used at operational level to forecast future customer requirements and plan resources accordingly. Their marketing activities were very limited and promoted the company as a manufacturer with the ability to solve problems.

The organisation offered a good variety of products but its transformation processes showed a considerable lack of flexibility as process speed and efficiency along with prototypes were the only capabilities scoring good levels of adaptability. Capabilities such as automation, customer's input and set-up time scored low values. Process integration was another area that required improving nevertheless this was one of the few companies in the group capable of implementing changes easily. Flexibility of resource was considered to be of medium importance; they were frequently engaging in build-to-order projects but not in consultancy services.

Collaborations appeared not to be a priority as management only considered those supply chain relationships, primarily European companies, that increased their knowledge or experience in the sector; these supply chains involved medium term relationships where members were revised on an annual basis and members were easy to plug in and out, while partnerships were considered to be

beneficial to develop new contacts. These relationships were facilitated by having an open mentality and communication while avoiding intermediaries.

Company 9 demonstrated having a clear identity and shared its values, objectives and mentality with the employees, but personal development activities were rare and only considered when necessary. The only purpose of ICT systems was to manage existing data and the access to this information was limited.

**Company 10**

For this tenth company, customer satisfaction was the main driver of the organisation; this was achieved by utilising their employees and applying an efficient management style to deliver high quality products. Despite employees being described as the prime asset of the company, the personal development initiatives were rare and only offered when necessary. The organisation was sensitive to trends of the sector and consequently followed the fluctuations of the market and practices used by the competition; gathered information was used to identify and forecast future client requirements, plan resources and identify potential new business opportunities but not to identify new partners. Their marketing activities were very limited and they wanted to be known for their ability to solve problems.

The manufacturing processes of this organisation showed high flexibility in areas associated with process efficiency, as well as integration and speed of activities, while low scores were obtained by automation, reconfigurability of processes, set-up periods and the utilisation of prototypes. The main focus of these processes was quality but product variety and consultancy services added value to the general offering. The management believed that shorter product life cycle were directly affecting their processes and therefore developing flexible resources was more important than ever.

Collaborations appeared not to be a priority once again, as the organisation was considering only those relationships offering cost or risk reduction, more efficient use of resources, process standardisation, total service or new business opportunities, but the management were not interested in suppliers able to reduce time to market, provide access to new technology, experience or knowledge in the sector or enhancement of corporate image. Other collaborations were established on the basis of open mentality, clear identity and lack of intermediaries, and they were measured according to the improvements on

quality, accessing new business opportunities or getting experience in the industry. Despite having a well developed infrastructure, it was not always easy or cheap to add or remove partners or suppliers from the chain.

According to the management, the company and its employees shared the same values, mentality and objectives which made possible to have a clear identity. Employees seemed to be committed to work for the company but a greater involvement and empowerment could still bring improvements in their performance.

**Company 11**

This eleventh company believed in an entrepreneurial management style as the most effective leadership approach to provide real time response services and achieve customer satisfaction. Due to the nature of the service provided, process efficiency, speed of response, reconfigurability and innovation were the main drivers of the manufacturing processes. The organisation was able to offer a great variety of products and exploited employees' abilities by engaging in build-to-order projects and consultancy services. Process integration was one of the areas that according to the management needed improving.

The organisation was very sensitive to changes in the external environment, which resulted in an intense scanning of the marketplace and benchmarking of the competition; gathered information was always implemented when possible (identifying client requirements, identifying new business opportunities and potential partners as well as planning resources). They made a limited use of promotional activities but with a clear message; the name of the company should be associated with their problem solving capabilities. ICT infrastructure supported internal operations and external environment analysis efficiently.

Regarding collaborations, the company was an open and dynamic organisation that continuously scanned the marketplace seeking novel suppliers that could help access new business opportunities, develop contacts, apply advanced technology, enhance their industry experience or improve their reputation. Alliances focused on increasing their reputation as well as accessing new business opportunities, technology, knowledge, experience or contacts. In their opinion the core values of this

kind of relationships were; open mentality, open and continuous communication and common objectives. Due to the nature of the sector, supply chains relationships tended to be short term and were revised on an annual basis. In addition, these structures were designed so it was easy and cheap to add or remove participants. ICT systems played an important role in making this possible.

Employees were considered to be the main asset of the company and that was the reason behind running personal development activities every three months and utilising them in multi-skilled, multifunctional, flexible, dynamic and project based teams.

**Company 12**

This company applied a dynamic and entrepreneurial management style highlighting resources as the main asset of the company and fundamental to their principal offering: their problem solving ability. The organisation was very sensitive to changes in the external environment, especially at macroeconomic level, which resulted in an intense scanning of the marketplace but it did not follow the competition on a regular basis.

The emphasis of the manufacturing processes lie on meeting delivery deadlines; therefore it was not strange that activities such as process efficiency, automation and speed of activities were essential to their operations. Innovation was another area that they carefully nourish. Process integration was mentioned as a capability needing to improve in the future.

This organisation had a solid but dynamic association with its partners which allowed them to exploit those relationships effectively. According to them, the success of these partnerships was founded on three criteria: open channels of communication, flexibility to rapidly react to unexpected events, and common objectives. They were part of a medium term supply chain where members were evaluated on an annual basis but this did not mean that it was easy to add or remove members from relationships; members were assessed on their ability to enhance quality, access to new business opportunities, knowledge, technology or contacts as well for their reputation. ICT infrastructure played an important role assuring the effectiveness and usage of the information.

The relationship between the company and the employees was analysed at different levels:

- Culture: same values, objectives and mentality were not shared by both groups, which translated into a confusing company identity.
- Knowledge development activities: employees attended development courses only when it was necessary which could influence their ability to solve problems and innovate in the medium/long term.
- Teams: the usage of team promoted cooperation and integration of departments as well as helped distribute knowledge across the organisation.

**Company 13**

This management of the thirteenth organisation believed that an entrepreneurial management style helped them get the best of their employees who were considered to be the main asset of the organisation, while satisfying their clients by meeting established delivery deadlines and providing high quality products. The organisation was sensitive to industry trends and followed what the competition was doing but not the market; gathered information was used to predict future client requirements, plan resources and identify new business opportunities, but not potential alliances. Their marketing activities were very limited as they believed to be an organisation which offered high quality products.

Their manufacturing processes were centred on quality and delivery times; this was reflected by high flexibility capabilities such as process efficiency, speed of activities, automation, involvement of suppliers and short set-up times. Nevertheless, there were other areas that would be advisable for them to reconsider as greater customer involvement and innovation could bring a wider variety of products and consequently new business opportunities.

The management of the company maintained open and dynamic relationships with its partners and suppliers, which allowed them to take advantage of their expertise in reducing cost, using their resources, accessing to new business opportunities, experience and knowledge in the sector as well enhancing the service provided to their customers. Nevertheless, Company 13 could perfect its delivery times and process efficiency by looking at ways to minimise the time to market of new products and the standardisation of processes. This should also enhance the company's reputation and image.

These collaborations were based on open channels of communication and common objectives which facilitated rapid responses to unexpected events. The company was fully aware of the benefits of these relationships but also about the importance of developing and maintaining a clear identity and individual set of objectives. These relationships tended to be short-term collaborations revised on an annual or biannual basis; ICT infrastructure played an important role keeping the SC integrated by transferring the data internally and making it available to whomever required it and wherever they were.

**Company 14**

Company 14 offered a great variety of consultancy services in various disciplines; architecture and engineering, real estate consultancy, design and innovation, management, technology and law. The management believed in an entrepreneurial management style as the most effective means to get the best of their employees. They supported this philosophy by offering personal development activities held monthly.

Due to the nature of the service provided, market and industry analysis as well as implementation of best practices were regular procedures within daily routines nevertheless, gathered data was only used to forecast future client requirements and identify potential new business opportunities without considering new alliances or planning of resources. Marketing activities were moderate and focused on promoting their ability to solve problems.

Manufacturing processes were affected by the shortening of product life cycles that was why they decided to produce a great variety of products and flexibility of resources became so important for them. They also engaged on customised projects and consultancy services, so incorporating both customers and suppliers in the process as well as adopting a creative approach to problems was critical. They had an effective departmental integration and the use of multi-skilled, flexible and project-based team was the general norm.

With regards to collaborations, the organisation exhibited a solid relationship with its suppliers and partners; supply chains represented medium term relationships where the emphasis lied on accessing new business opportunities, offering total services and enhancing company image. Alliances, on the

other hand, were centred on open communication, flexibility, and settled objectives, nevertheless the benefits resulted from these partnerships were difficult to analyse as no measurement criteria were mentioned.

Knowledge generation and distribution were considered to be important to stay up-to-date with technology and business practices; therefore, development sessions were run every month. ICT infrastructure supported the data management and the service provided to the customer but it did not follow the work in progress, resources or facilitate purchasing activities.

**Company 15**

Company 15 believed in an entrepreneurial management style as a means to encourage their employees to make effective use of their capabilities and owned technology in addition to providing high quality products. Advanced technology was considered to be the principal asset of the company but the management was aware of the important role played by the human resources and the necessity to keep developing them on a continuous basis, and that was why they provided frequent training.

The management described the company as sensitive to trends of the sector and performance of the competition; consequently, they closely followed the fluctuation of the market and practices used by the competition. They believed that they were utilising this data well as it facilitated managing client requirements, accessing new projects, identifying possible new partners and organising and planning their resources. Nevertheless, they did not engage in customised projects or consultancy services as a result of these research activities.

When asked how they would describe the service provided; they classified their products as good value for money which implied high quality products at a reasonable cost; in order to be able to deliver this, the company concentrated on the efficiency and speed of processes, automation, reconfigurability of activities, prototyping and innovation. Flexibility of resources and variability of products were considered to be important to compete in current markets and responded to shorter product life cycles. Process integration and customer involvement was identified as the two areas that required further attention.

The responses indicated a clear identity and shared vision and values where employees and their knowledge were valued and no issues were highlighted.

In this case partnerships were understood as relationships that could aid the company increase the value of the services offered. Despite having an enduring and solid supplier base, they still revised that base on an annual basis. In order to take advantage of these dynamic interactions, they developed a chain where it was easy and inexpensive to plug members in and out.

**Company 16**

This organisation was sensitive to trends of the sector but it did not follow any market or competitors' analysis, nevertheless they appeared to get some information about their clients, future resource requirements and business opportunities through other means. By applying a mentoring approach to management, the company got the best of their main asset (employees) and delivered high quality products that represented good value for money for their customers.

Company 16 was able to deliver good value for money products by implementing rapid and efficient processes, applying automation, reconfigurability of processes and innovative approaches as well as involving customers in the process. For them, flexibility was an important means to deliver customised projects but they recognised their inability to offer a great variety of products or to easily implement changes within the organisations. They did not offer customised projects or consultancy service.

Despite having a global and dynamic supply chain, collaborations were not a priority for them as it only considered those relationships that could bring new business opportunities or enhance the service provided; this confirmed their approach to short or medium term networks where members were revised on an annual or biannual basis. These relationships were established around open mentality and communication services as well as avoiding intermediaries, but when asked about the performance measure used to evaluate these collaborations the company was more pragmatic about it; increasing the productivity levels and growing the number of new business opportunities. ICT systems were only used for purchasing, resource flow and data management but not to integrate with the customer or

follow work in the progress, therefore it was considered to be an area that could enhance the performance of these collaborations in the future.

The management believed that the objectives of the company were clear but it was not so sure that the same could be said about the company's identity or about sharing same values and mentality with the rest of the employees.

**Company 17**

This company adopted a dynamic and entrepreneurial approach where managers followed a mentoring style to get the best of employees' capabilities and deliver high quality products. Employees were considered to be the prime asset of the organisation but personal development opportunities were not provided unless it was necessary from the business perspective.

The organisation was very sensitive to changes in the external environment, both at micro and macroeconomic level, which results in an intense scanning of the marketplace and benchmarking of the competition; gathered information was always fully implemented when possible (client requirements, resource planning, identifying new business opportunities and potential partners). They also showed highly dynamic capabilities within the manufacturing processes, emphasis on flexible resources as well as integrated processes, which allowed them to offer a good variety of products and build-to-order projects. Consultancy services were not part of their offering.

Currently the company's supply chain was represented by medium-term stable global relationships in which performance was evaluated on an annual basis. These collaborations were based on their capability to get them access into new business opportunities and advanced technology, or to reduce time to market and offer total service. Partnerships were based on open communication and responsiveness, and they were assessed on their ability to bring new business opportunities and increase productivity levels. For them, it was not always easy or cheap to rearrange existing networks despite assessing members on a continuous basis. ICT systems were used for data management purposes; the data was accessible for anybody requiring the information at anytime everywhere in the

world, nevertheless it could be better used to support manufacturing process and involve the client more.

The people in the company were motivated and tried to contribute as much as possible in the company. They also showed a positive attitude towards change. The company used teams frequently and the management believed in sharing objectives and values with the employees but it was not sure about having a clear identity.

**Company 18**

The main focus of this company was to generate sales and profits; this was achieved by producing high quality products, prompt delivery and real time responses to customer's requirements. Manufacturing capabilities scored high values on six out of the eight registered responses (process efficiency and speed, reconfigurability, client's input, supplier's input, short set-up time and innovation). The only low score was for the use of prototypes which was understandable considering the nature of the product. Flexibility of resources and operations was critical in their sector.

The organisation was very sensitive to changes in the external environment, both at micro and macroeconomic level, which resulted in an intense scanning of the marketplace and benchmarking of the competition; gathered information was rather well utilised but there was still some room for improvement as they did not use it to identify new potential partners. They made a limited use of promotional activities with a clear message; "our company offers good value for money products". In order to do so, there were two things to consider; the quality of the products and the cost which was in line with the general emphasis of the organisation.

Developing solid but dynamic partnerships was crucial to keep the costs as low as possible and get access to resources that would not be available otherwise. This company interacted with a medium term supply chain which was continuously revised; changes in the network were implemented when necessary but not always cheaply or easily. Alliances on the other side were relationships which emphasised having open communication systems, open mentality management and having common

objectives, and the performance measures focused on the number of new business opportunities generated and the enhancement of the productivity.

The responses showed well developed ICT systems with internal and external information systems but the company did not utilise them to its maximum potential as they were not used to improve client services or follow up work in progress, purchasing or resources. The access to this information was limited.

The management was not sure if they share same mentality and values with the rest of employees.

**Company 19**

Maintaining the reputation of the company was the main objective of the organisation; this was achieved by applying a controlled and structured hierarchy combined with an efficient management style; both factors were aimed at delivering high quality products. The organisation was very sensitive to changes in the external environment, especially at macroeconomic level, which resulted in an intense scanning of the marketplace but they did not analyse their competition regularly; gathered information was used to forecast future client requirements and plan resources but they did not focus on identifying new business opportunities or partners. Their marketing activities promoting the high quality of the products were very limited.

Manufacturing focused on meeting delivery deadlines, therefore capabilities such as reconfigurability of processes, short set-up times, innovation and the involvement of the suppliers were crucial for the satisfactory functioning of the department and the company. The organisation offered a good variety of products, engaging on build-to-order projects and consultancy services, nevertheless they agreed with the fact that the integration of process was not good enough and needed improving.

Partnerships were important for the company; they established trust-worthy long-term relations with closely located suppliers and allies, most of them were based on the Basque Country, which made them easier to engage with. This represented long-term supply chain relationships which were not normally revised and therefore it was rather difficult to make changes within it. The main focus of these collaborations were cost reduction, use of resources, new business opportunities, access to knowledge

or experience, use of resources, new business opportunities or providing total services. When looking for partnerships, the focus lied on having an open mentality, common objectives and using no intermediaries, while the performance of these partnerships was evaluated based on their influence to access new business opportunities and develop new contacts.

The management followed a similar approach in their relationships with employees by defining a clear set of objectives that were shared with all employees, but the management was not sure if other aspects such as the company's identity and values were as clear.

Well developed ICT systems with internal and external networks that were well utilised to enhance the service provided to the client, following work in progress, resources, aiding purchasing and data management.

**Company 20**

The direction of the company believed in an efficient management style as a means to encourage their employees making effective usage of their capabilities and owned technology as well as providing high quality products or delivering on time; technology was considered to be the primary resource for the organisation and employees were offered training activities every three months to keep up to date with it. Manufacturing processes sought process efficiency, speed of activities and the involvement of suppliers. Nevertheless, process integration needed improving if the delivery schedules were not to be affected.

The organisation was very sensitive to changes in the external environment, especially at macroeconomic level, which resulted in an intense scanning of the marketplace but they did not analyse their competition regularly; gathered information was used to get a better understanding of the future requirements of the clients, plan the necessary resources and identify new business opportunities but it was not used to acknowledge new potential business partners.

Currently collaborations were represented by medium-term supply chains where performance was evaluated on an annual basis. These relationships aimed to generate new business opportunities, reduce time to market of new products and facilitate access to advanced technology. Alliances on the

other hand aimed to improve their ability to get new business opportunities, access to advanced technology and knowledge; these relationships were based on having open mentality, common objectives and lacking intermediaries. ICT systems were well implemented and facilitated both internal and external relationships; they supported the service provided to clients, facilitated data management and followed up work in progress and resources as well as being helpful during purchasing.

Employees were motivated to learn showing a medium level of flexibility to change their current circumstances and the management believed in sharing same values & objectives, not sure about the mentality though.

**Company 21**

The main focus of this company was to generate sales and profits; this was achieved by minimising costs, prompt delivery and using advanced technology to produce high quality products. Transformation processes showed high flexibility in capabilities such as process speed and efficiency as well as innovation. Nevertheless, other activities needed revising, among them; automation, involvement of suppliers and customers or the use of prototypes. Flexibility of operation and variety of products were essential to compete in such a competitive sector, nevertheless the integration of processes was acknowledged as one of the areas that required improving.

The organisation was very sensitive to changes in the external environment, especially at macroeconomic level, which resulted in an intense scanning of the marketplace and benchmarking of the competition. They did a full usage of the market information to predict future requirements of the client, plan resources as well as identifying new business opportunities and potential partners. Their marketing activities were moderate and promoted the quality of their products.

Partnerships were important for the company; they developed a stable medium term supply chain where it was easy and cheap to plug in new suppliers or to plug out old ones. The organisation was open to collaborations and ready to take any kind of advantages that these could generate; supply chain were exploited to seek cost reduction, enhancement of the corporate image, access to new business opportunities, technology , knowledge and experience, as well as minimising time to market of the

products and providing a total service. From all proposed advances, only the reduction of risk and standardisation of processes was not marked in the questionnaire. Following the success of the supply chain, alliances showed a similar approach seeking improvements on quality, access to new business opportunities, technology and knowledge as well as increasing productivity levels. These relationships relied on developing a clear identity, maintaining open channels of communication, flexibility to react to unexpected events, and agreeing common objectives. ICT systems supported internal and external relationships efficiently by enhancing the relationship with clients, following up the work in progress and managing data; the follow up of resources and purchasing activities were not possible with these information systems.

**Company 22**

Customer satisfaction was the main driver of this company; consequently, they relied on an entrepreneurial management style, the utilisation of the capabilities of their employees and the minimisation of cost to achieve so. Employees were considered to be the main asset of the organisation but development activities were not offered unless it was required by the business.

The organisation was sensitive to industry trends and followed both the market and competitors on a regular basis; gathered information was fully used to predict customers' and resource future needs and identifying new business opportunities, but not potential partners. Their marketing activities were very moderate promoting the good value for money that their products represented. In the case of company 22, good value for money was achieved by highly flexible operations and efficiently integrated processes. They showed high flexibility levels in all eight manufacturing elements covered in the survey; this efficiency and flexibility of operations allowed the company to offer a great variety of products, customised projects and consultancy services at a minimum cost.

In this case, supply chain collaborations represented long-term relationships which were continuously revised seeking new partners and assessing current ones; these relationships which sought cost reduction, availability of resources, new business opportunities and offering of a total service. Alliances were considered as a means to access new business opportunities and reduced time to market; in order

to do so, they believed that it was necessary to have an open mentality, flexibility and common objectives.

ICT systems facilitated both internal and external data management as well as enhanced the service provided to the client, followed up of work in progress and resources as well as facilitated the purchasing process; nevertheless data accessibility was an area to improve.

Employees were considered to be multi-skilled, multifunctional, flexible and dynamic, but employees were not willing to change environment or adopt temporal jobs. Management believed that they shared same values, mentality and objectives, but they were not sure about having a clear organisational identity.

**Company 23**

Through a mentoring approach to management, the company tried to make the most of the capabilities of the employees and enhance the company's reputation by solving customer's problems and prompt delivery. Reputation was considered to be the main asset of the company. The organisation was sensitive to industry trends and consequently followed the fluctuations of the market and practices used by the competition nevertheless they did not always know how to maximise this information; gathered information was used to predict the future needs of the clients as well as to identify new business opportunities and potential partners but not for resource planning. Their marketing activities were very limited and they wanted to be known for their ability to solve problems.

Manufacturing processes were highly flexible with six high scores, one medium and one low; process efficiency and speed, reconfigurability, client and suppliers' input, short-set-up times, prototypes and innovation were among the high scores while automation was the capability with the lower score. Nevertheless, the management believed that process integration needed improving to increase the general dynamism of manufacturing and the organisation.

This company developed a solid and stable long term supply chains which allowed them to exploit those relationships effectively; cost reduction, use of resources, accessing new business opportunities,

advanced technologies and knowledge as well as reducing risks, process standardisation, improvement of image and offering total service. With regards to alliances, these collaborations were also widely used to improve quality and organisational reputation, increase productivity levels, as well as to access new business opportunities and contacts. These partnerships were developed with open channels of communication, common objectives and flexibility as main criteria. ICT infrastructure played an important role in assuring the effectiveness of the usage of information; the infrastructure helped enhance the service to the client, followed up work in progress and resources, purchasing activities and data management which it was accessible by anyone anywhere.

The company was not sure whether they shared the same values, objectives or mentality with the rest of employees. They were not sure either if the identity of the company was clear for the rest of the employees.

**Company 24**

Customer satisfaction followed by sales and profits were the main drivers of this organisation; this was achieved by utilising their employees' capabilities, R&D facilitates and company's reputation and by applying an efficient but entrepreneurial management. The main assets of the organisation were the employees, reputation and R&D activities. Personal development activities were offered on an annual basis.

The organisation was sensitive to trends of the sector and consequently followed the fluctuations of the market and practices used by the competition; nevertheless they did not always know how to maximise this information effectively; gathered information was used to plan resources as well as to identify new business opportunities and potential partners, but not to identify future needs of the clients. Their marketing activities were intense emphasising the value for money of their products, prompt delivery and their ability to solve problems.

The organisation developed highly flexible operations and efficiently integrated processes. The efficiency and flexibility of operations allowed them to offer a great variety of products, customised projects and consultancy services with a minimum cost. The management also stressed the importance

and effort put on developing long-term supply chains which tended to be re-assessed annually. The emphasis of the supply chain was to access new business opportunities and advanced technology, reduced time to market, and offering total service. Alliances followed similar considerations where members helped enhance quality, access new business opportunities, advanced technology and experience in the industry while also increasing productivity. ICT System supported and facilitated both internal and external operations which helped improve the service provided to the customers, followed up the work in progress and resources, and facilitated the purchasing process and data management. This data was available at any time for whoever needed it anywhere in the world.

The company was sure about their identity and sharing same values, objectives and mentality with all employees.

## 9.5 Analysis of Results: Cluster

In this case, the spreadsheet indicated that there were three types of companies within the Mondragon group; those companies that had organised their operations around sales and profit generation, those companies that sought customer satisfaction and those companies that were willing to take higher risk by adopting an entrepreneurial approach to business. The model showed the strategy dimension predominantly populated with capabilities coloured in pink which suggested a commitment from the cluster towards flexibility and growth but also illustrated those aspects that the cluster found challenging; responsiveness, continuous learning, integration and cooperation.

The predominant management style was the entrepreneurial or result-orientated; efficient leadership but open-minded enough to acknowledge and take advantage of new business opportunities. This dimension in the case of the aggregated cluster showed that the management had a positive attitude towards change at different levels, and encouraged new trails and experiences. Yet, the effectiveness of this management style resulted limited unless it was supported by empowered employees and it was linked to a greater authority on the tasks employees were undertaking; the emphasis was on developing more independent and balanced employees capable of making decisions. Managers also were a source of inspiration by adopting a management by example approach and having tolerant behaviour to failure.

The cultural dimension showed an entrepreneurial attitude to do business where innovation and growth were central to the way they do business and which recognised the value and potential of people and rewarded them for their contribution. Despite promoting innovation, they were having some issues related to trust and continuous learning which affected their capacity for change. The major concerns of the cluster at this moment in time were the fact that it did not have a clear identity or a vision shared by the individual cluster members; the objectives and direction of the company seemed to be the only areas well communicated.

Employees as well as technology and R&D capabilities were highlighted as the main assets of the group. Those assets were strongly linked to the philosophy of the group where social relationships and continuous development were core elements; fourteen out of the twenty four companies run training or personal development courses at least once a year. The model illustrated a flexible cultural dimension where capabilities coloured in pink were clearly dominant, in this case the dimension of people was not as dynamic; people were willing to cooperate and contribute with their work but their motivation for improvement, undertaking new responsibilities or change was not as positive. Temporality, diversity and mobility were not welcome.

When looking at the knowledge segment, it was easy to observe different attitudes towards it; some companies spent considerable amount of time and resources developing this part of the organisation, while others decided not to consider it or acquired it from outside. This dimension showed an equal number of capabilities coloured in pink and orange, this indicated the commitment of the cluster towards knowledge generation and distribution but it also demonstrated their difficulty to achieve it; cooperation, distribution and applicability were the main challenges.

The dimension associated with information indicated that the cluster invested money and effort in this dimension and it developed an information infrastructure able to facilitate, coordinate and integrate external and internal data, but the distribution and accessibility of this data was limited.

Continuous analysis of the internal operations and external environment was the general norm within the group; more than half of the companies utilised this data to satisfy clients' requirements, access new projects or plan resources. The main challenge for them was to fully exploit the information gathered

about their direct competition as only six out of fifteen managed to ever implement any industry best practices. Personalisation of best practices or general guidelines was another practice that was not considered.

The intensity of the promotional activities varied depending on the company, but the endorsed message did not differ much from one case to another; value for money and ability to solve problems were the advertised message in most cases. The marketing dimension illustrated that the group did not promote its full potential by acknowledging what they could do as a group (total service, variety of alternatives and products, future products and projects…). Affiliated marketing was a widely used practice; eighteen out of the twenty four companies admitted sharing marketing activities with suppliers or customers.

With regards to the internal structure of the companies, the majority of them understood that flexibility was a necessity in the current business environment, and consequently most of them had implemented some structural changes lately but also admitted they did have problems when trying to implement those changes.

The main objective of the manufacturing practices was quality, followed by prompt delivery and cost minimisation. In order to achieve so, process efficiency and speed were the main concern of nearly all companies (twenty one out of twenty four), closely followed by innovation and process reconfigurability. Far behind there were other activities such as suppliers and clients involvement, automation, short set-up time or prototypes. Only eight companies believed that their products were subjected to short product life cycles, which indicated that only around a third of the companies in the group were focused on traditional industries. Most of the companies acknowledged flexibility of resources and capabilities as very important for their performance and competitiveness, which translated into a good variety of product offering, engagement on build-to-order projects and provision of consultancy services. Process integration was noted by nearly half of the company as a problem that needed to be tackled.

The dimension associated with alliances was a rather confusing section with numerous capabilities coloured in pink, orange and blue; the segment showed a clear focus on the operational capabilities, but the strategic capabilities were not adopted as well as the operational ones. The main challenge was to

coordinate and control the different approaches and to transmit a shared identity that could be communicated successfully to the market place.

The supply chain dimension showed an opposite approach to the alliances with clear objectives but with difficulties at getting the most of its operations (speed, flexibility, coordination, integration, etc). Its capacity to be tailored and to incorporate or exclude partners as necessary as well as its horizontal integration and standardisation of procedures described the main weaknesses of this segment. Most supply chains were well established long-term relations with European or global suppliers which were reviewed frequently; nevertheless, the majority of the companies described the process as costly and complicated. Ten out of the twenty four companies used the ICT system to facilitate these relationships, while the rest just used them internally.

## 9.6 Conclusion

This chapter aimed to explore the dynamism of the companies within the cluster by acknowledging the flexibility level of their operations at individual and group level. The chapter covered the entire survey process from the selection and design of the questions to the collection and interpretation of results, both at individual and aggregated level.

Taking into consideration the developed framework, the survey was designed to identify what dynamic capabilities were implemented by the different companies within the cluster so it was possible to get a better idea of their individual and the cluster dynamism. The collected results were then transferred into a spreadsheet which illustrated the different types of companies. The chapter provided detailed information on the characteristics of each organisation while the cluster explained the combined and generalised version of that data.

The next chapter focused on the interpretation of this data by using the framework which also helped internally validate the model. This was the first step to answer the hypothesis.

# *Chapter 10: Questionnaire - Interpretation of Results*

## 10.1 Introduction

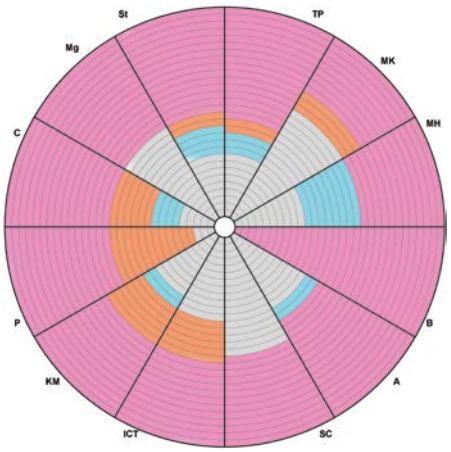
The aim of this chapter was to validate the model by interpreting the results gathered in the questionnaire and by using the developed framework (find a copy of these individual and cluster frameworks in the appendix). Questions were designed to acknowledge what capabilities represented in the framework were already actively implemented by the company, as well as the level of flexibility of those capabilities (high, medium or low. Those capabilities which were actively implemented or with high rate of flexibility were coloured as pink, those with medium range of flexibility were orange, not implemented or with low degree of flexibility were blue and those capabilities with not clear indication of their level of flexibility or not applicable to that company were coloured in grey. This influenced the way questions were designed in the survey; participants were asked to measure each response following the indicated scale of importance or rank-order scales as well as using control questions that allowed a better understanding of the reality of specific organisational practices.

This analysis facilitated a rapid overview of the responses; the full model provided detailed information about the individual capabilities, which could be beneficial for companies trying to improve a specific dimension or for identifying problems related to specific activities. Nevertheless, it lacked of an accurate representation of the corporate dynamism when viewed in its entirety. It was also difficult to compare the obtained results among the companies and against the cluster. Consequently a supporting visual model was generated to provide a visual aid as a means to simplify the framework once the results of the questionnaire were translated into it. This visual model provided a clear and rapid illustration of the level of flexibility for each of the individual segments as well as the company without giving any information about the specific capabilities included within each of the dimensions.

## 10.2 Interpretation of results; individual organisations

The interpretations of the resulting framework are as follows;

**Company 1**

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| **TP** | Transformation Processes |
| **Mk** | Marketing |
| **MH** | Material Handling |
| **B** | Benchmarking |
| **A** | Alliances |
| **SC** | Supply Chain |
| **ICT** | Information and Communication Technologies |
| **KM** | Knowledge Management |
| **P** | People |
| **C** | Culture |
| **Mng** | Management |
| **St** | Strategy |

Figure 28: visual model for company 1

This organisation exhibited a rather good overall flexibility level; nevertheless, there was still room for improvement as most of the segments revealed capabilities in blue or orange. External benchmarking, culture and people were the strongest segments while internal operations (manufacturing, marketing and material handling) showed the weakest levels in comparison to the others.

Despite showing a strong people segment, employees did not like changes. Employees could further contribute into the company if they were able to adopt an open and flexible approach to work, among the areas to improve; motivation, openness to learn, willingness to change, adoption of flexible roles, and flexibility of location. Improvements in this segment could also help other segments such as manufacturing, knowledge or strategy, but especially it should have an impact on the integration of the different dimensions.

Knowledge Management was another area to look at; knowledge was considered to be a source of competitive advantage but it was not part of the company and employees' mind-set yet. This led to problems in the assimilation, application, maintenance and distribution of in-house knowledge. External source of knowledge (marketplace, competitors, and collaborations) seemed to be more developed and better used. The section on culture was rather strong but it reflected a lack of clear identity and shared vision; this confirmed to be the source for some of the weaknesses mentioned above.

With regards to the external relationships, the alliances segment was slightly better than the supply chain fragment; both segments showed good flexibility at strategic level but required further work at the operational and tactical level to really be able to exploit the advantages and to develop new business opportunities.

**Company 2**

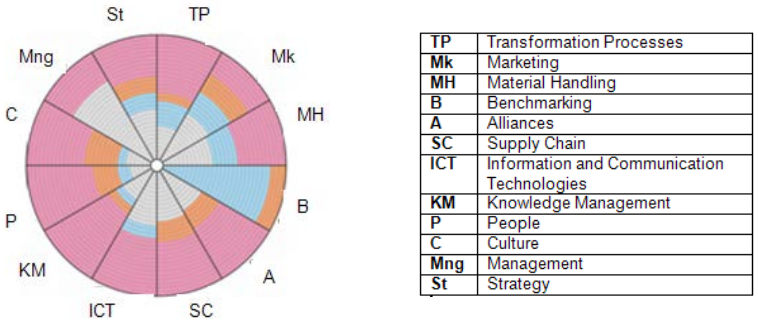


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Figure 29: visual model for company 2

This company exhibited a medium level of flexibility in those areas involving people and collaborative relationships; nevertheless, flexibility fell sharply within the dimensions representing the internal operations of the organisation. Benchmarking, which scored low levels of flexibility for all capabilities but one, was the weakest dimension while the people section could be described as the strongest one.

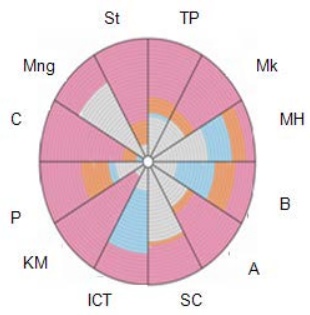
Analysis of the external environment and utilization of that data was a definite aspect to be revised as it would allow getting a better understanding of the situation of the industry, customer demands, competition and identification of new business opportunities. The management described the company as sensitive to industry trends so improvements in these two dimensions could have a significant impact not only on following the trend but integrating the different dimensions to plan better for the future.

Relationships with external organisations, either suppliers or group members, were confirmed to be equally developed; both associations showed signals of having a rather solid basis at strategic level but weaker implementation of the capabilities and impact at the bottom level. Higher integration of customers, suppliers and partners along the production process and strategic level also helped improve the flexibility and efficiency of some of the other dimensions, especially manufacturing, marketing, material handling, supply chain and alliances. Another area to think about was the openness and

entrepreneurial approach of the company to introduce, apply and share new ideas and knowledge, both internally and externally; openness and proactivity should have a positive impact on reducing the gap with competition and improving the internal direction of the company as well as engaging more employees and sharing objectives for a better future together.

The strategy dimension described flexibility, cooperation and integration as vital capabilities within the top level decisions, but those dimensions representing the low organisational levels showed that they were not cascading down properly into the operational dimensions. The management needed to get more proactive and encourage the rest of the staff to take ownership of the activities and collaborate as part of their daily activities.

**Company 3**

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| **St** | Strategy |

Figure 30: visual model for company 3

The visual model represented a rather unbalanced model where some of the segments such as people and knowledge were highly developed and others, ICT systems and supply chain for example, were hardly flexible. Those segments interacting with the external environment illustrated poor performance in comparison to the internal operations.

The model confirmed that the company employed resources to get a better understanding of the market place but it did not check the competition. Having a clear view of the competition could help identify the company's competitive advantage and enhance differentiation; this should also aid developing a clear company identity. The management described the company as sensitive to the industry trends so improvements in these two dimensions could have a significant impact not only on following the trend but also in integrating the different dimensions to better plan for the future.

Employees and innovation were mentioned as the main company drivers and despite showing good flexibility levels there was still plenty of room for improvement; in the case of manufacturing, a better distribution of the data supported by the ICT systems could help improving the efficiency and flexibility of this dimension. The use of teams and asking them to collaborate and share information more frequently could be a way to enhance the performance of this dimension.

When looking at both collaborative segments, it seemed that the organisation was more efficient exploiting its relationships with other members of the Mondragon Group than with its suppliers. Partners could be brought closer at operational level so the efficiency of processes could benefit from that, while the supply chain should be looking at how the whole base could benefit from working closely together and increasing its dynamism.

The dimensions representing the high levels of the organisation with the exception of the ICT systems were shown to be the most developed dimensions, consequently ICT systems was the obvious section to be reviewed as most capabilities within it were coloured in blue; the system did not allow the company sharing and managing information effectively, not internally or externally. A more adequate ICT system could be used to improve the integration of the internal processes and achieve smoother relationships with customers, suppliers and other partners.

**Company 4**

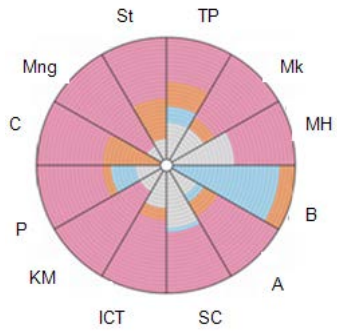


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Figure 31: visual model for company 4

This company exhibits a more balanced graph that the previous one. Benchmarking was the weakest segment but the rest of the sections were adequately developed demonstrating medium or high flexibility levels.

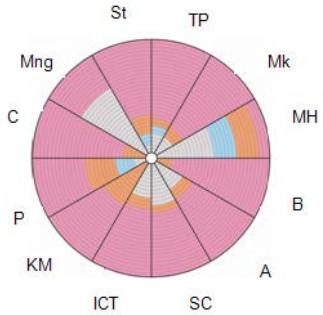
Developing those dimensions related to the market, marketing and benchmarking which were currently clearly undeveloped, would facilitate identifying future customers' need and planning the resources necessary to provide the required service and achieve customer satisfaction as this was mentioned as the company's main focus.

The transformation process dimension displayed a medium level of flexibility; the model showed that the company only contacted customers at the initial and final stages of the project. It also confirmed problems with access to the necessary information and variability of products. Developing closer relationships with their customers could enhance the efficiency of current activities as well as open the opportunity for new projects or products.

This business unit seemed to better exploit its relationships with other members of the Mondragon group than with its suppliers. In this case, partners were brought closer at operational level so the partnership seemed to be more effective. Regarding the supply chain, they should be once again looking at how the whole base could benefit from working closely together and increasing its dynamism. Customer involvement was another area to take into consideration.

Despite having a clearer identity and vision than the previous company, this division could also benefit from the benchmarking of the competition as a means to understand future threats and adopt a more proactive direction. Looking at the managerial and strategic dimensions, it could be said that the company considered flexibility when thinking about the company but it did not translate it as well as expected into the lower level dimensions.

**Company 5**

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| **B** | Benchmarking |
| **A** | Alliances |
| **SC** | Supply Chain |
| **ICT** | Information and Communication Technologies |
| **KM** | Knowledge Management |
| **P** | People |
| **C** | Culture |
| **Mng** | Management |
| **St** | Strategy |

Figure 32: visual model for company 5

In this case, all segments showed medium to high levels of flexibility with the exception of management and material handling. The management style implemented a balanced approach with self-management and commitment as main characteristics, it also agreed with new trials and experiences by adopting a tolerant behavior towards failure, nevertheless it lacked of attitudes that supported and encouraged these practices; positive attitude to change, promotion of the sense of ownership, being coaching and inspirational, etc. The material handling segment indicated that the information system also included logistics data that it was available to other dimensions of the organisation; nevertheless, they did not consider activities that increased the efficiency and productivity of this dimension like reducing lead-times, real time response, control of inventory level and procurement or the use of various distribution channels.

The rest of the dimensions showed high levels of flexibility; in the case of the employees and knowledge dimensions, a good proportion of the segment was coloured in orange, medium level. The management in the questionnaire mentioned that they were not sure how easy it would be to implement changes in the organisation; these segments indicated that employees were committed to the company and acknowledged the necessity to change in certain circumstances knowing this would involve certain effort (open to learn, proactive, willing to change, flexible roles are capabilities that were categorised as medium level), but these capabilities would be even more difficult to adopt if a change in location or temporality was required. With regards to the knowledge management segment, the company promoted and regarded the generation and accumulation of knowledge but not all employees seemed to be willing to engage with these activities or to share their knowledge.

Collaborations as well as internal operations presented highly flexible dimensions; the usage of the alliances was slightly better than interactions within the supply chain, but there was still room for improvement as integration and alignment of strategies were not as good as they could be. A similar challenge was mentioned on the supply chain relationships.

Within the internal operations and related to collaborations; marketing could strongly consider adopting combined marketing strategies that may benefit their individual profiles.

**Company 6**

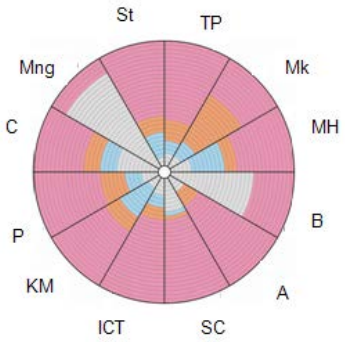


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Figure 33: visual model for company 6

This could be described as a company with medium flexibility; the management understood the importance of flexibility when competing in highly instable environments and consequently tried to put all required actions in place, but with different degree of success. The way the company handled the stock and their approach to logistics should be re-evaluated and search for more stable relationships with their suppliers and customers what would allow them to improve their response time and reduce inventory levels.

The management dimension was underdeveloped; they described their approach as seeking balance between self-management and commitment, nevertheless they did not support this view with a more practical attitude; promote ownership, encourage new trials, coaching, etc. Improving this dimension could also have a positive impact on the culture not only in participation and having a positive attitude towards change but in transmitting a clear identity and developing a shared vision.

Benchmarking was clearly weak dimension. In contrast, the ICT dimension seemed well developed as it was used to support and coordinate activities but not to store and distribute of knowledge. In addition the access to this information was limited. Having a better infrastructure could help encourage continuous learning and sharing of expertise as well as be a way to better integrate the different departments within the organisation.

With regards to the operations and collaborations, the dynamism and response time to changes were the main areas for improvement. Alliances and supply chain were well used, but the structure of the chain could be modified to become more efficient and react faster to change.

**Company 7**

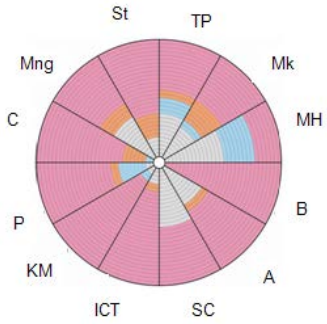


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Figure 34: visual model for company 7

According to the framework, the organisation showed good flexibility as most of the segments illustrated medium to high level of flexibility. The only exception was material handling acknowledging that flow of material could be smoother and more continuous; exploring lean approaches could help enhance the effectiveness of this operation.

Those segments containing some kind of knowledge (people, knowledge, marketing and benchmarking) were really strong in this company. Supply Chain and alliances could be further exploited in this sense; the alliances' top strategic actions seemed to be in place, but it was no clear how well they were translated in to the bottom line; no considerations of the obtained benefit or how the effectiveness of this relationship was measured. In the case of the supply chain it was a similar approach; they understood what requirements they needed to fulfill to run an effective supply chain, but it was not clear what the impact of these relationships was. Manufacturing, logistics and marketing operations would benefit from a more extensive inclusion of its suppliers within the internal and promotional activities.

Culture and people were important dimensions of the organisation; nevertheless, it appeared that the employees did not engage enough in the organisation. Employees could further contribute to the organisation if they were more proactive and participative; in order to encourage this behavior, the management could consider making the information more accessible in addition to empowering employees and teams to make decisions. It was also important to acknowledge and communicate that the learning and future potential of the organisation was linked to the result of the individual learning of its employees.

**Company 8**

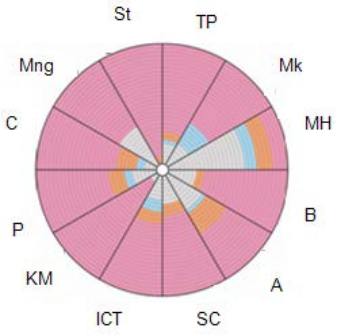


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Figure 35: visual model for company 8

The framework for this organisation showed great flexibility in most of the segments with the exception of the Material Handling dimension; greater flexibility was shown by the internal operations while those areas linking with the external environment demonstrated to be weaker.

The Material Handling dimension covered long-term and stable relationships but their performances were weak with a considerable inventory level of the final product, long lead-times and limited responsiveness; despite these challenges the organisation did not consider integrating information systems or using diverse channels of distribution. These practices were rather different to the ones implemented within the manufacturing dimension. A greater involvement with the customer and the development of ICT systems connecting the internal dimension with those clients could help improve both dimensions.

Supply chain was better developed than alliances, which suggested the need to seek a closer integration with partners to be able to exploit the bottom line activities and opportunities offered by the marketplace. The structure of this relationship should be also reconsidered aiming at making the inclusion or exclusion of members easier and cheaper. Going to the market place and marketing those products/projects together was another possibility that the company did not adopted yet.

Knowledge management was a vital dimension for company 8; therefore, they tried to cultivate it whenever possible, nevertheless the fact that employees did not share with the company the same mentality and purpose affected negatively the impact of this effort. Developing culture focused on team work would enhance the efficiency of this dimension as well as it would have a positive effect on the loyalty and trust that the employees have on the company.

**Company 9**

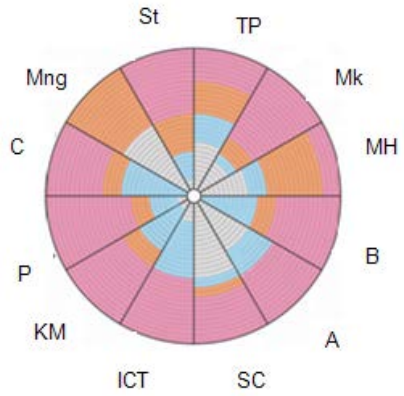


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Figure 36: visual model for company 9

This organisation displayed a medium flexibility as all areas could be further developed. Culture and ICT systems represented the segments with more activities in blue, while strategy, people, marketing and benchmarking are the better developed sections, but still far away from the flexibility level exhibited by other companies.

The questionnaire mentioned that manufacturing processes are centered on delivery, and the data on framework confirmed this approach in some way as process speed and being time effective combined with short lead-times achieved high scores; nevertheless, there were other capabilities that would support this approach like short set-up times, customer involvement, smart automation, workforce flexibility and departmental integration were not considered. Suppliers' involvement did not always occur either.

Collaborations, both supply chain and alliances within the group, illustrated rather poor segments; the company seemed to understand that collaborations could greatly benefit the company but did not establish the necessary infrastructure or define the strategy to fully exploit them. This should also have a positive impact on the transformation processes and knowledge management segment. Integration of activities within the organisation and between organisations was a weak capability in all the dimensions; the development of an ICT system supporting and facilitating that integration would have a positive impact in the overall performance of the organisation.

Despite having a clear identity, the business needed to re-evaluate the culture of the organisation in an attempt to facilitate the adoption of flexibility as part of the daily routines and overall functioning of the organisation. Other areas that also should be adjusted are knowledge management and strategy;

continuous improvement as mind-set should be widely spread among the employees becoming an essential part of the company's strategy along with day-to-day operations.

**Company 10**

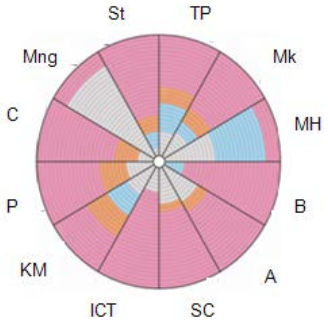


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Figure 37: visual model for company 10

It showed a complex graph where some segments were well developed while others needed upgrading; those segments linking the company with the outside world seemed to be more adaptable than the internal operations. The company demonstrated a consolidated attitude but it also presented problems in those areas directly related with human resources such as people, knowledge management or strategy.

The questionnaire mentioned that manufacturing processes are centered on quality and the data on the framework confirms this approach as they applied Total Quality Management and involve in some way their customers and suppliers. Developing a greater integration with customers and suppliers as well as adopting more advanced machinery and rapid prototyping could enhance this approach.

Another area to consider was logistics; the dimensions illustrated a noticeable low level of flexibility, this could be related to the manufacturing approach; nevertheless, enhancing some capabilities such as lead-times and having a real time response could support other capabilities within manufacturing and collaborations. Alliance and supply chain segments were some of the best developed and most flexible dimensions of the organisation. The fundamentals were in place but the implementation could be better. In the case of the supply chain they should also look at how to improve the relationships with suppliers. Improvements of the supply relationship and flow of material could also have positive impact on manufacturing and logistics. In addition, the company could look at ways to encourage learning activities on a continuous basis.

**Company 11**

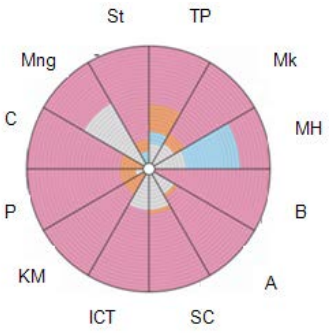


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Figure 38: visual model for company 11

This organisation displayed a really flexible framework with the exception of the material handling segment. Segments such as culture, people, knowledge management, benchmarking or strategy were fully developed, others such as marketing and alliances were really strong but there was still room for some improvement. In both cases, the use of market networks to promote their activities could help them attract new business opportunities.

Manufacturing and logistics were the only two dimensions showing some kind of weakness. The questionnaire mentioned that manufacturing processes were centered on delivery, and the data on framework confirmed this approach in some way as process speed and being time effective combined with short lead-times scored good responses; nevertheless, there were other capabilities that would support this approach like short set-up times, customer involvement, smart automation, workforce flexibility and departmental integration that were not considered. Suppliers' involvement did not always occur either. Logistics did not support this approach really well either as no just-in-time approaches nor were real-time responses implemented.

Both collaborative dimensions, supply chain and alliances, were well developed with the alliance dimension indicating a slightly greater flexibility level. In both cases, the organisation understood the basis to make these relationships work at operational level but it lacked of strategic integration; developing the strategic direction of these collaborations would help stabilised these partnerships and getting the best out of them.

**Company 12**

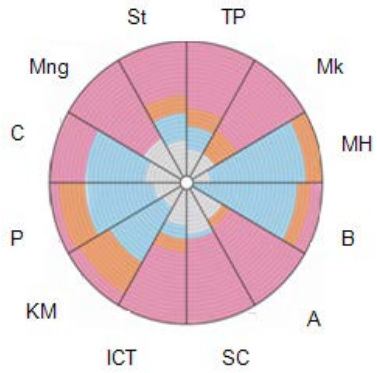


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Figure 39: visual model for company 12

The framework for this organisation illustrated dimension with great disparity between them; some fragments indicated low flexibility including numerous activities coloured in blue, among these segments; culture, people, knowledge management, logistics, benchmarking. Alternatively, sections such as management, marketing and collaboration showed rather good flexibility levels.

Improvements within how the company benchmarked the competition could help understand how the company's offering was different from the opposition; this could also aid to clarify the company's identity, identifying new business opportunities and defining future direction as well as helping the bottom line by identifying best practices or guidelines for improvements of internal operations.

Logistics was the other element that needed reviewing as all capabilities within it but one were coloured in blue; it was no clear how this dimension contributed towards the overall performance of the company as they did not follow any of the traditional approaches for this dimension: cost, efficiency or responsiveness.

Alliance and supply chain segments were some of the most developed dimensions, and consequently most flexible areas of the organisation. The fundamentals were in place; the company needed to think about how the different dimensions could be better integrated and the resources available more effectively exploited.

Culture was probably the first section to think about considering the obtained responses; the company acknowledged a lack of clear identity and common vision which cascaded down to the other sections, people and knowledge in particular. The company should be looking at how the relationship with the employees could be retaken so all parts could benefit from it. Knowledge was recognised as a source of

competitive advantage but it was not sufficiently promoted or rewarded by the company so the employees were not motivated to adopt continuous improvement as part of their daily behavior. Enhancement of the personal knowledge could lead to the adoption of flexible roles and more proactive approach to problem solving by employees. It would also be advisable to personal knowledge as means to increase efficient use of teams and processes.

**Company 13**

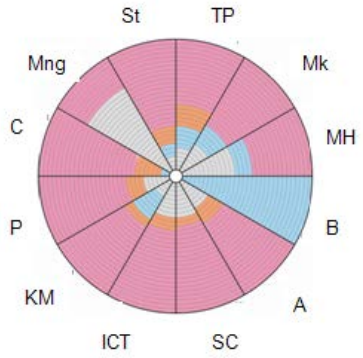


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Figure 40: visual model for company 13

The framework of this company illustrated medium level of flexibility in most of the segments with the exception of benchmarking that showed really poor performance. Culture and strategy segments were the most developed sections which might be an indication of the awareness of the importance of flexibility in such a competitive environment, but it also suggested difficulties to actually implement effective measures.

The analysis of the external environment, both the marketplace and competition, were rather limited. It appeared that the company was gathering some information about the market but did not utilise it adequately to identify new business opportunities, best practices or use it as guidelines for internal improvements.

Logistics was the other dimension that needed reviewing as all capabilities within it with the exception of one were coloured in blue; there was not clear indication of what was the contribution of this dimension on the overall performance of the company as they did not follow any of the traditional approaches: cost, efficiency or responsiveness.

Internal knowledge generation seemed to be good but it was not really well maintained and distributed. Being more open to the external environment could also help improve the openness within the internal boundaries. Rewarding employees might be another way to tackle this issue. Adopting a more proactive management style promoting ownership, encouraging new trials, etc could help support implementing change and clarifying values.

Supply chain and alliances showed good cooperation fundamentals; despite working rather well, revising the efficiency of those relationships at top level could help exploit better these associations in the long-term.

**Company 14**

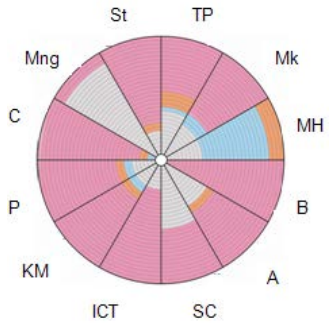


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Figure 41: visual model for company 14

The flexibility model for the organisation presented a good general overview with logistics as the only segment showing low performance; nevertheless, this could be considered a direct result of the nature of the service provided. In comparison culture, people, knowledge management and benchmarking were the most developed areas of the organisation; this was understandable considering the consultancy services provided nevertheless, the benchmarking segment could also be used to identify what made the company different from the competition and to clarify and develop the identity of the company.

The management dimension was hardly developed, they adopted a balanced approach combining self-management and commitment, but they did not support it with any other capability that may encourage change within the company. In the same way, this attitude could also encourage sharing the company's values and purpose to develop a clear identity.

Supply chain and alliances were well developed; they maintained close relationship with partners and customers so they were able to deliver the best services possible. The speed of response was something

that should be further analysed. The dimensions were developed at low level; taking into consideration strategic capabilities within these dimensions could help improve their performance. Developing combined marketing activities could also increase the possibility of winning new business opportunities that they could not access independently.

**Company 15**

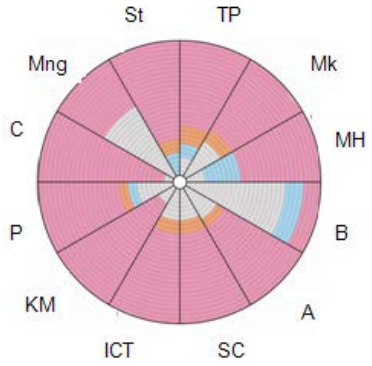


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Figure 42: visual model for company 15

This company was one of the most flexible companies within the group, but once again the benchmarking segment was considerably undeveloped. This may be because they were gathering information but did not know how to utilise it; collected data was analysed but no actions were taken as a result of it. The company did not consider collaborating with partners, customers or suppliers regarding its marketing activities, targeting niche markets or customised projects. They did not carry out any internal audit that helped them identify performance gaps between the different dimensions or against the competition.

The lack or limited integration was an organisational weakness that came across in several of the dimensions both at higher and lower organisational levels; definitely an area that needed reviewing. On the other hand when looking at the cooperative relationships maintained by the company, they seemed to be positive; a part from integration, the only aspect to mention was how easy and costly it was to include or drawback partners; the management believed that it was reasonably easy and cost effective, but it was an activity with room for improvement. Accessibility to information was another area that it was good but could be better, while getting involved in on-of-projects could be the way to grow.

Employees were committed to the company and their contribution was a powerful asset to the company. Employees were happy to undertake changes regarding roles, teams and location but not to work on a temporal basis.

**Company 16**

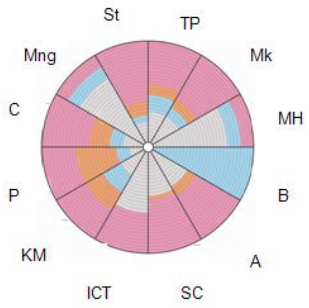


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Figure 43: visual model for company 16

The company showed a rather different graph compared to the previous company; all segments indicated low to medium flexibility; benchmarking was yet again the weakest area while the alliances fragment was the most developed dimension. The model confirmed that the company employed resources to get a better understanding of the market place but it did not look at the competition; all capabilities within the benchmarking dimension were classified as low or non-existent. Having a clear view of the competition may help identify the company's competitive advantage and enhance differentiation; this should also aid developing a clear company identity and a vision of where the company would like to be in the future. In addition, this should affect positively other segments such as people, knowledge management and strategy. In addition, understanding the gap between the company's and competitors' performance could help acknowledge areas for improvement and how to improve them.

Internal processes should be revised in association with the logistics; improvements on the flow of materials and products could aid increasing the efficiency and speed of process. This was only possible if suppliers and end customers were also involved in the process, this closer relationship could also enhance innovation. At the moment the supply chain and alliances seemed to be rather effective but the operational and tactical activities could be better exploited to get the most out of them.

The Knowledge Management segment also showed a poor performance, the company was aware of the importance on this dimension regarding their competitiveness, but the employees did not adopted learning as part of their mind-set and consequently they did not put it in to practice in a continuous basis, they also were not willing to share with the rest. This dimension was a reflection of the people and culture dimensions, which showed a committed environment where change was not an easy task; this could be the result of the uncertainty generated by not having a clear vision of the future. The management should

be looking to encourage employees to take ownership of the tasks, encourage them to engage on new trials and experiences while leading by example and showing commitment to the company and to them.

**Company 17**

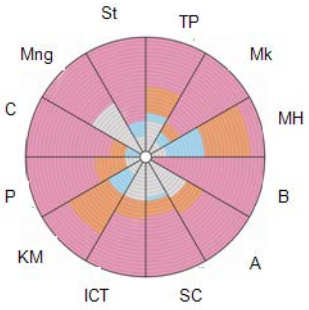


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Figure 44: visual model for company 17

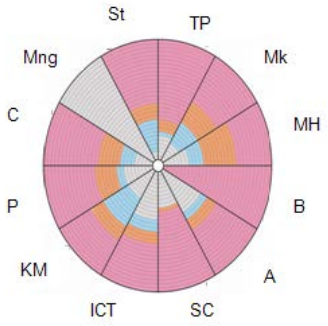
This organisation showed a well-developed chart; most of the segments indicated medium to high levels of flexibility. Logistics and knowledge management were the weakest sections while benchmarking, culture and people were the strongest. The organisation tried being responsive while providing high quality products; those capabilities related to responsiveness score medium levels of flexibility so there was still room for improvement if they were going to become a dynamic an entrepreneurial organisation.

The lack of or limited integration was an organisational weakness that it came across in several of the dimensions both at higher and lower organisational levels. It was definitely an area that needed reviewing. In contrast, collaborations were an important part of the company nevertheless the framework revealed that those relationships required further consolidation and stability; trust, integration and long-term approach were aspects that needed to be reconsidered. Another aspect to improve was the structure of those partnerships which would allow an easy and cost effective inclusion or withdrawal of members. ICT systems could be used to support these changes by developing an infrastructure that better exploited the information made available by the organisation and its partners.

The Knowledge Management segment also showed medium performance, the company was aware of the importance of this dimension regarding their competitiveness, but the employees did not adopted a clear learning approach as part of their mind-set and consequently they did not use it as part of their daily activities. They also were not willing to easily share their knowledge and experiences with the rest. This dimension was a reflection of the people and culture dimensions, which showed a committed environment

where change was not an easy task; this could be the result of the uncertainty generated by not having a clear vision of the future. The management should encourage the employees to take ownership of the tasks, and to engage on new trials and experiences while managers act as an example and show commitment to the company and to them.

**Company 18**

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| **B** | Benchmarking |
| **A** | Alliances |
| **SC** | Supply Chain |
| **ICT** | Information and Communication Technologies |
| **KM** | Knowledge Management |
| **P** | People |
| **C** | Culture |
| **Mng** | Management |
| **St** | Strategy |

Figure 45: visual model for company 18

The framework for company 18 outlined a business with good flexibility but still with room for improvement in most of the sections. Benchmarking was the most developed dimension while knowledge management and ICT systems were the obvious ones to firstly revise. Knowledge management was the segment with more activities coloured in blue; the company did not support enough the internal generation of knowledge and it seemed to prefer acquiring it from outside through benchmarking or partnerships. ICT systems did not either support the accessibility to existing knowledge as its openness was limited.

The questionnaire did not provide information regarding the managerial practices within the company, but the culture dimension showed that change was not part of the company's mentality and despite trying to encourage participation and innovation, it was still an area that required to be better disseminated; the adequate management style could facilitate the spread of this philosophy. Strategy was the other obvious dimension to consider; if employees had a clearer view of the future direction of the company, they would have a better understanding of what it was expected from them.

The supply chain section was well developed as the purchasing and transportation of food required being efficient and dynamic functions. Nevertheless, there were still other capabilities within the chain that could

be improved as the integration, coordination and synchronisation of activities, standardisation of processes and development of trust. They could also do a better use of their alliances when trying to grow the business.

**Company 19**

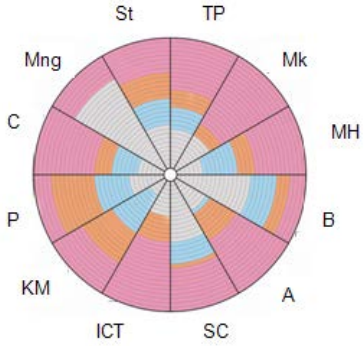


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Figure 46: visual model for company 19

This company represented a company with low to medium level of flexibility; most of segments showed a fairly distributed combination of activities coloured in pink (indicating good level of flexibility), orange (average flexibility) and blue (activities that definitely need improving). The framework showed benchmarking as the weakest segment, while ICT systems would be the strongest.

This organisation gathered data from the external environment, both market place and competitors, but in this last instance it seemed that they were not sure what to do with that data. Having a clear view of the competition might help identify the company's competitive advantage and enhance differentiation; this should also aid developing a clear company identity and a vision of where the company would like to be in the future. This should convert into positive responses from other segments such as people, knowledge management and strategy.

Knowledge was recognised as a source of competitive advantage but it was not sufficiently promoted or rewarded by the company so the employees were motivated to adopt continuous improvement and sharing their expertise as part of their daily routines. Enhancement of the personal knowledge could lead to the adoption of flexible roles and more proactive approach to problems by employees, which could also translate into a more efficient use of teams and processes.

Manufacturing should be also re-evaluated to see if the customer could be further integrated within the process and how all processes could be better coordinated and synchronized. The efficiency of processes could be improved by looking at the technology available in the marketplace.

Supply chain was another area that needed reconsidering, especially the structure and integration of its links; the chain seemed to be rather static with lack of integration and this was problematic when including or removing members from it.

**Company 20**

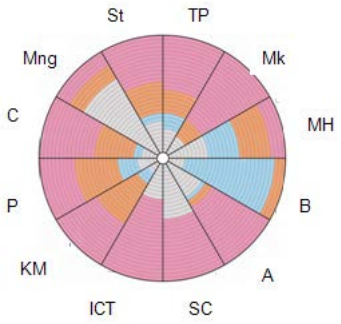


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Figure 47: visual model for company 20

The framework of this organisation showed that the internal segments were rather well developed except for the material handling and benchmarking sections; the logistics capabilities did not show a clear emphasis (efficiency, cost or responsiveness) and manufacturing was only a concern when delivering projects that required rapid response to change in a cost-effective manner. Having a clear strategy would help the other dimensions have a clear direction and improve their efficiency. Among the strongest segments, marketing and ICT systems: these segments showed a clear understanding of their function and they knew how to maximise the use of the capabilities.

Culture and people segments could not be described as weak segments, they showed a medium level of flexibility but it was noticeable that the company did not manage to fully exploit the capabilities of its employees. Employees were not fully motivated to learn or make decisions; this was influenced by an outdated culture that needed to be revised.

The knowledge management segment provided evidence on an area which was improving; the company was aware of its importance and it was trying to cultivate it, especially by using partnerships nevertheless, they did not manage to fully integrate it within the company or to effectively apply it.

Manufacturing practices should be also revised to see if the customer could be better incorporated within the process and how all other capabilities within the dimension could be better integrated. Speed of response and creativity should be also encouraged; yet again change of culture may be the answer.

With regards to the external relationships, the alliances segment was slightly better than the supply chain fragment; both segments showed good flexibility at strategic level but required further work at the operational and tactical level to really be able to exploit the advantages and develop new business opportunities.

**Company 21**

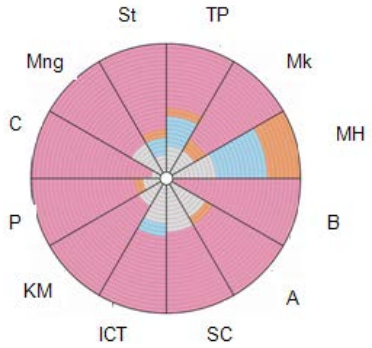


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Figure 48: visual model for company 21

This company had greatly developed all segments with the exception of the logistics dimension; the logistics dimension did not show a clear emphasis (efficiency, cost or responsiveness). In the case of manufacturing and according to the management, the manufacturing processes sought efficiency in terms of cost, quality and delivery time; nevertheless, the framework illustrated a rather mixed response with no clear focus. Having a clear strategy would help the other dimensions to have a more focus direction, concentrate on one aspect at a time and improve their efficiency.

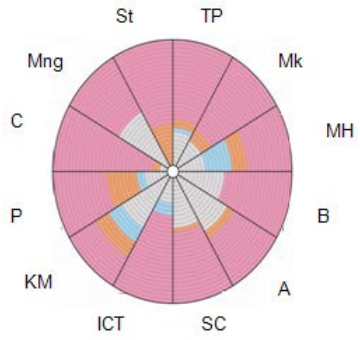
On the other hand, the divisions representing company's culture, people, knowledge management and benchmarking displayed a quasi-ideal flexibility level. The organisation and employees understood the

importance of being adaptable and continuously engage on development and innovation, the only aspect that can be highlighted within these dimensions was that the company could exploit better the cross-functional and cross-organisational teams and operations.

The supply chain and alliance segments were well developed with a greater emphasis towards inter-cluster collaborations. In both cases, the dimensions showed a greater focus on the operational aspects of the collaborations rather than strategic decisions. Developing a closer strategy could help enhance the strength and direct impact of these collaborations in the long-term by allowing a better planning of the capabilities.

Despite having really strong individual segments, the company mentioned the integration of these dimensions as a problem. A better utilization of the existing ICT infrastructure and promotion of the company's culture might help enhance the union of the company into one.

**Company 22**

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| **C** | Culture |
| **Mng** | Management |
| **St** | Strategy |

Figure 49: visual model for company 22

The chart associated with this company illustrated a good flexibility level but it was far behind compared to company 21. Having a clear view of the competition could help identify the company's competitive advantage and enhance differentiation; this should also aid in developing a clear company identity and a vision of where the company would like to be in the future. This should also convert into positive impact on other segments such as people, knowledge management and strategy.

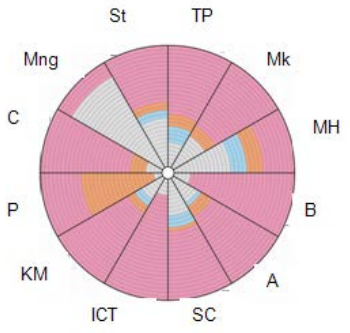
Despite showing a strong people segment, employees did not like changes. Employees could further contribute into the company if they were able to adopt an open and flexible approach to work. The willingness to change, the adoption of flexible roles, and the flexibility of location were among those

capabilities requiring improving. Improvements in this segment should also assist other dimensions such as manufacturing, knowledge or strategy, but especially it should have a positive impact on bringing the different dimensions of the organisation closer together.

Knowledge was understood to be a source of competitive advantage but it was not sufficiently promoted or rewarded by the company so the employees were motivated to adopt continuous improvement and to share their expertise as part of the daily routines. Enhancement of the personal knowledge could lead to the adoption of flexible roles and more proactive approach to problem solving, which could be translated in to more efficient use of teams and processes. Accessibility to information should be improved if this was to happen.

Departmental integration was classified as good, but responsiveness and integration with the outside was a capability to improve; this would indicate that this capability might not be as good as the company initially thought it was.

**Company 23**

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| **St** | Strategy |

Figure 50: visual model for company 23

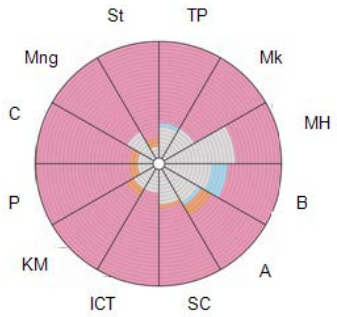
The framework for this company indicated a flexible organisation with medium to high flexible dimensions. Logistics was displayed as the weakest area while benchmarking and ICT systems were nearly perfectly developed.

The logistics dimension did not provide a clear purpose (efficiency, cost or responsiveness); manufacturing indicated that internal activities sought prompt delivery and responsiveness but the responses for the logistics dimension did not support the same objectives, so communication and integration among the different dimensions was an aspect to be addressed as the responses to other segments (the strategy dimension) confirmed.

Both collaboration segments were well developed, nevertheless they seemed to be rather static with a lack of integration and being problematic to include or remove members from it. Revising ways to improve the integration of both internal and external relations could also have a positive impact on the flow of material and information as well as responsiveness.

The culture segment suggested that the company promoted participation, knowledge management, innovation and change nevertheless, employees displayed medium levels of adaptability and willingness to change. This was an attitude that the company needed to address if it was going to adopt an entrepreneurial style; the management style should support this change by promoting ownership, encourage new trials and by adopting a positive attitude towards new ideas, people and technology as well as acting as an example. This should help define the purpose of the organisation and in developing shared values and mentality.

**Company 24**

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| **St** | Strategy |

Figure 51: visual model for company 24

This was a flexible company that could be looking at improving two segments: logistics and benchmarking. Nevertheless, in this case it was important to acknowledge the type of products produced by the company (innovative products for niche markets), and the type of projects (normally build-to-order) that would justify the shape of these dimensions; for example, it would be difficult for the company to adopt industry best practices when it was one of the pioneers in the industry.

Culture and people were the strong dimensions of the organisation; the only aspect to mention was that the company in the future could consider exploiting cross-functional and cross-organisational

relationships to enhance efficiency and new ideas to address novel problems or business opportunities. Despite being a flexible organisation in a highly dynamic environment, continuous improvement could be further promoted becoming a fundamental part of the company's strategy in the short-term and its philosophy in the long-term.

Alliances with other members of the Mondragon group were not fully exploited; the higher level fundamentals were in place but they were not being translated into actionable practices; it was required to look at how those relationships could be improved at operational and tactical level so they could really benefit from them.

## 10.3 Interpretation of results for the cluster as aggregated

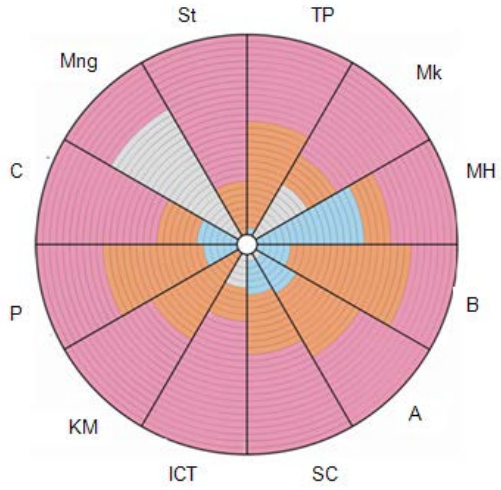


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Figure 52: visual model for the cluster

The framework for the group indicated a medium range of flexibility; this was not a surprise as the model was the result of combining some highly dynamic companies and other rather static ones. In general, the number of activities coloured in pink or blue were reduced while the number of orange activities became the norm. Culture, strategy and ICT were illustrated as the strongest segments, while benchmarking, logistics, and surprisingly alliances were among the weakest.

The manufacturing dimension denoted a responsive and innovative dimension, nevertheless the group needed to focus on how they could efficiently maximise the use of available resources and tried to bring together the various internal dimensions of the company as well as the external stakeholders.

Logistics was a definitive dimension needing improvement; the chart showed a lack of continuous flow of material and products combining with a lack of adaptability to changes in the external environment.

The group was rather good at scanning the environment and utilising the data gathered from the marketplace, nevertheless the benchmarking dimension suggested that the group as a whole did research what the competition did but it could not fully exploit the value of this data. Companies could benefit from some guidance on how to effectively use this information.

Alliances and supply chain dimensions were not as well developed as it was expected; the fundamentals of effective networks were in place but the group members showed difficulties to successfully implement them. A better understanding of the size, activities and business culture of the members could help identify and develop genuinely valuable collaborations.

The group and the companies put a great effort developing an efficient ICT infrastructure; nevertheless, a better accessibility to the information would facilitate the integration among the members.

The knowledge management segment was a rather strong segment with all the fundamentals and resources in place; the only concern in this segment was the attitude of the employees and the company towards them. Knowledge, in order to be profitable needed to be applicable; the marketplace and technology was continuously changing, and the company needed to be able to move with it if it was going to benefit from it. People also needed to be willing to engage and share their experience and expertise as part of their daily activity.

People and knowledge management were important dimensions for the effective functioning of the cluster; employees were motivated and willing to learn, nevertheless teams did not seem to be employed to their full potential; cross-functional and cross-organisational teams could enhance their empowerment and contribution.

The main concern with regards to the culture of the group was the fact that employees did not have a clear understanding of the identity of their company. This may be the result of the existence of different groups and subgroups within the cluster. Senior management should try to clarify this area and define a clear direction for their staff. This should also contribute towards their motivation and participation.

## 10.4 Conclusion

The purpose of the survey was to assess the dynamism of the organisations grouped within the Mondragon cluster by recognising the level of flexibility of their particular operations and the group as a whole.

In terms of the participation, 80 companies were invited to respond to the questionnaire with 24 of them finally returning it. All collected results were analysed in a three stage process; analysis of the spreadsheet, analysis of the framework and comparison of results by using a visual model.

The framework provided a detailed analysis for each of the dimensions and the specific capabilities that the company could improve within them, while the visual model provided a clear overview of the flexibility for each dimension and the organisation as a whole.

Most companies involved in the survey, with some exceptions, showed medium to high level of flexibility; which was a clear indication that the companies within this cluster were aware of the importance of being adaptable in order to compete or even survive in the current marketplace; good examples of flexibility were shown by company number eight, eleven, fifteen and twenty-one. Most of the companies presented medium to high level of flexibility despite having some dimensions that were weaker and required some additional effort.

# *Chapter 11: Interviews*

## 11.1 Introduction

Chapter 9 and 10 explained and analysed the data gathered in the survey; questionnaires helped standardise the data obtained from the different sources; nevertheless, this data was limited to the number of questions and their format. In the previous chapter, it was explained that the number of questions was considerably reduced seeking to maximise the number of responses, the impact of this reduction was a constricted coverage of individual dimensions of the model and consequently it was reasonable to explore this further through interviews on the stakeholders themselves.

In order to better understand the picture illustrated by the framework, it was necessary to get more information about how the managers interpreted the collected data, especially the reasons behind those capabilities coloured in blue or grey (low flexibility capabilities or not enough information). This chapter meant to further explore the dynamism of the company by confirming the interpretation of the gathered results and getting more detailed information on these dimensions and capabilities that needed further clarification. It represented an external validation of the model.

## 11.2 Qualitative Research Interviews

Interviews as well as questionnaires and observation case studies were qualitative research methods. These methods became especially advantageous when seeking to understand how companies were managed and how managers made sense of them. More specifically, interviews allowed getting insights into particular experiences, established motives behind particular decisions and understand attitudes and behaviours (Hannabuss, 1996). The principal advantages of this method were (Hannabuss 1996 and R. Burns 2000):

- Flexibility: questions could be repeated and the meaning explained if necessary, in addition to the inclusion of new questions to get further details in specific responses.
- Lower response rate; a smaller number of participants was required to carry out a comprehensive study.

- Face-to-face interaction; where it was possible to observe non-verbal communication.
- Quality of the response; information was likely to be accurate and if there was any doubt, there was the possibility to immediately add or amend provided data.
- Interviews were a good means to extract opinions on complex and sensitive issues.
- Greater control over the process.

At the same time, there were drawbacks when using this method that should be understood (Hannabuss 1996 and R. Burns 2000):

- Time-consuming in terms of preparation, delivery and analysis of the data, and consequently only a limited number of interviews were able to be carried out.
- Respondents might need to fit their responses into a rigid schedule of questions.
- Open to bias: the conversation could become biased by the interviewer if not careful.
- Respondents might feel that are being 'put on the spot'.
- Poor reliability; especially when the researcher was looking to establish comparisons between the different data sets.

Interviews could be classified under two categories informal or structured; the first type responded to those interviews shaped to the situation and context of the individual which translated into a more casual conversation. The second type followed a predetermined and organised schedule of questions. There were also stages in between where it was possible for the interviewees to explain their answers and to provide more detailed information when necessary (D. Wilkinson, 2000).

## 11.3 Overview of the Interview Process

Four interviews were conducted among different members of the Mondragon Group in the middle of December of 2009; the interviews aimed to explore various issues that rose during the literature review, survey results and their translation into the model. The interviewed people were selected based on their interest in the subject, the company they represented and their position in it as well as the sector in which they operated. Although eight people were suggested and showed interest in the subject, the short time window only allowed for interviewing four of them. Semi-structured individualised interviews were

developed based on their returned questionnaires. The questions followed an open-ended format which aimed to get an insight on those topics that the questionnaire superficially covered.

A standard interview approach was followed and replicated in every interview; introduction to the subject and objective, session of questions and queries and conclusion. Once the four interviews were carried out, the next stage was to transcribe the interviews and identify the main topics of interest and those statements that should be highlighted during the analysis. The sections covered in the following sections of this chapter represented a summary of the interviews and not the complete dialogue; this was due to the fact that the respondents went into a great detail in certain issues that were not necessarily relevant for the study. Due to confidentiality reasons, no names of the interviewees or companies were mentioned.

## 11.4 Overview of the Results

In order to attain a good understanding of the group, it was important to approach companies or individuals with a different perspective of the role played by group and their members. The first interview aimed to gather information on the group at aggregate level, which was the reason to speak to somebody on the general council. The other three interviews targeted different size and sector-based companies within the group; a large company within the white-goods sector, a medium-sized company part of the automotive industry, and a small-sized company within the construction. The opinions of each of the respondents as expected differed considerably from one to another.

### 11.4.1 Interview 1: The Perspective of a member of the General Council

Taking into account the position of the respondent on the General Council, it was possible to get a good understanding of the functioning of the group and the role of the strategic team as well as a different point of view in some matters. The General Council was the body charged with drawing up, coordinating and applying corporate goals and strategies within the Mondragon Group. The questions were divided into six areas: overview of the group, people, as well as relationships among the members, entries and exits within the group, geographical concentration and finally dynamism.

Overview of the Group

The first matter to be highlighted was the fact that the Mondragon Group was a conglomerate characterised by high diversity and a federative structure. A federative structure meant that all members hand some strategic decision capabilities over to a collective structure while maintaining their independence and market decision power. The primary functions of the General Council were summarised into four: normative, management of the communal resources, entrepreneurial policy and communal services. The combination of these aspects allowed the group developing and implementing basic concepts such as capital contribution, sovereignty of labour, education, etc while the companies were concentrated on their market performance.

Diversification was considered to be an advantage for the group but it was also a source of complexity when identifying and implementing added value activities for all sectors. Another problem associated with diversification was a slow decision making process; the fact that there were numerous and diverse interests to be considered resulted in late or inaccurate decisions.

In addition to the central strategic team, there were other 4 areas (Finance, Industrial, Retail and Knowledge) and 5 industrial divisions (consumer goods, capital goods, industrial components, construction and enterprise services) that supported the central team during the decision making process; these intermediate structures were incorporated during the 1980s when the central team realised that they didn't have enough knowledge about the different activities and the actual industry situation. These divisions also encouraged their members to seek economies of a scale, synergies and cooperation.

People

Cooperatives were jointly owned and democratically controlled by their members who were the direct beneficiaries of the performance of the companies. Consequently, it was not difficult to understand that the prime asset and major concern of any cooperative was its human resource base. For a cooperative to be able to function, it was essential to develop a valid and open organisational and social model which reflected the general values of the society. This was especially important as all members, whoever they are or wherever they were coming from, should be able to relate to those values. The success of the group depended on the combination of two critical factors:

1. The existence of a cohesion factor that brought people and companies to work together.
2. The existence of a group factor that helped stabilise the decision making process while reducing conflicts among different members.

Relationships among the members

Cooperative companies were free to define what type of relationships they wanted to maintain with the rest of the businesses within the group; some organisations only engaged with the others through the financial resource contribution, while others joined forces together during both commercial and social projects.

Joining forces to generate economies of scale was advantageous on activities such as purchasing and product offering. The development and utilisation of technological centres was another tool used by the General Council to encourage innovation as well as enhance the distribution of knowledge and information among the same industry members. At the moment most of the joint projects were industry-specific short-term collaborations, so it was likely that the market was offering more opportunities than the ones actually maximised; that was why the strategic team was looking at grouping various cooperative members that could take advantage of emerging new business areas.

Entries and Exits

Historically, avoiding market isolation was the main reason for cooperatives to group together; nevertheless, having access to benchmarking, standardisation of procedures and stability were other benefits that were also interested in. Another aspect that it could not be forgotten was the commercial reputation and image of the group, which became increasingly relevant in the last 15 years and therefore a particular added value to those new members.

With regards to the exits, they were not strange for the group and could be categorised into two categories: cooperatives that did not agree with some of the decisions approved by the assembly or companies that felt that being part of the group did not add value to them anymore. This last case was something that they needed to be revised; being a more dynamic and flexible organisation should help identify how the group could add value on an individual basis.

Geographical Concentration

Geographical proximity was critical for the development of what they called the cohesion factor or culture. Originally, the cooperatives within the group did not collocate together following geographical criteria but seeking financial and resource stabilisation. This same method was followed by other companies based closely by, in other words, a concentric expansion of the organisation model took place; the values and behaviour adopted by the cooperatives was approved and shared by the people of Mondragon and nearby towns, and eventually becoming a highly influential and integrated organisational and social model in the region. The translation of these values became more difficult with the internationalisation of the group; taken over of companies in Poland, France and China caused major challenges when trying to successfully implement the company's culture over there.

Dynamism

The Mondragon Group used an indirect approach when seeking dynamism; they did not put into practice novel actions but selected and positioned key people and resources in those organisational areas that required an energetic push. Nevertheless, they were aware that the group as a whole needed to continuously evolve and not only the individual company members. Cooperatives could not be considered as more dynamic organisational models that other types of organisations, especially during economic growth periods. Nevertheless, it was fair to say that cooperatives were more resilient and adaptable during recessions.

The next three interviews tried to obtain a different perspective by interviewing three independent companies within the cluster, consequently the set of questions for the next three interviews differ from the first one.

### 11.4.2 Interview 2: The Perspective of a Large Organisation

This second interview concentrated on the experiences of this particular cooperative in relation to seven topics: manufacturing processes, the market place, its relationships with the suppliers, the relationships with other cooperatives within the group alliances, the level of flexibility and dynamism of the organisation, the influence of geographical collocation and their opinion with regards to the group.

Internal Regime

The organisation had production plants and subsidiaries around the world and its products were marketed in over 100 countries. Such a complex system required a central strategic team focused on providing certain coherency to the system, standardising procedures and guiding the different business areas under the same common objectives. Underneath, each business area had its own committee which looked after their business area, market and customer base.

Large organisations tended to be rather slow when taking decisions and this was not a different case; the central strategic team got involved in the development of a strategic plan for each of the business areas while seeking to maintain the group consistency, this involved the analysis of large amounts of data which did not facilitate a fast decision making process or a rapid implementation of actions. On occasion, those top-down decisions did not suit the business units' environment and they needed to be re-evaluated; implying further delays. Organisational flexibility and dynamism were therefore areas of great interest for the organisation.

The latest approach aimed to analyse the different business units in relation to their general activity and not specific products or geographical location; this helped reduce duplication while enhancing integration and coordination. Internationalisation added another type of complexity; culture translation. In this case, the organisation was not only dealing with the language, traditions and national barriers, but the adoption of the cooperative mentality by these new employees. It became a long and difficult process.

The Group

When asked about the group, the emphasis centred on the culture at different levels; the cooperatives as a philosophy and the organisational culture at business level.

The values originally developed with the first cooperatives seemed not to relate to the new generations anymore; the society and the people evolved while the original values did not. This became a relevant point of discussion during the assemblies as the group was struggling to retain and engage young generations. Young generations obtained the positions maybe too easily and they did not seem to value advantageous positions and job security; nevertheless, they were aware that this was only true if the group survived for long. The assembly understands that a review and modernisation of the current values was necessary, bringing them closer to the current society.

With regards to the values within the organisations, it was expected that the cultural differences among members were minimal as all companies were looking at maximising profits following the same fundamentals. Nevertheless, 'the way of doing business' in each organisation varied and this was also cascaded down into other activities differentiating companies even more.

Another problem was the fact that the group sometimes seemed to be too busy looking inwards and forgot about what was going on in the outside.

The Market Place

This cooperative competed on a highly mature market where the capacity to generate large economies of scale, great variety of product lines and having an international presence were obligatory factors for the survival of the company. Brand recognition was critical for the commercialisation of the products but ironically, manufacturers possessed little bargaining power as distributors remained absolutely necessary to access the final customer.

Taking into consideration the challenging environment described above it was not difficult to understand why the cooperative felt forced to diversify into other areas with less competition and greater barriers to entry where they had more control over the distribution and pricing.

Relationships with the Suppliers

The cooperative along the years developed and implemented a very comprehensive selection method which helped them select the right type of partners; the interested companies filled in an application template which was firstly checked and then audited and evaluated against predefined selection criteria.

Those successful applications were consequently homologated and included in the future production planning. The intensity of the relationship varied depending on the circumstances or particular activities of these suppliers; still cost and quality were the main decision factors with a few exceptions. In general, supply chain management was a rather efficient area but the company was aware that it did not fully exploit the potential of most relationships.

Relationships with other Cooperatives within the MCC Group

If the relationships with the suppliers were described as well-developed and consolidated, the same could not be said about its relationships with other members within the group. Being part of large group like the Mondragon Group helped reduce cost and workload in areas such as administration, technical service, purchasing, etc as they were centralized activities. Other advantages were the brand reputation or data gathered via internal benchmarking, but especially important, the access to common resources both financial and human. All these elements combined together allowed the members to have a flexibility level that it would not be achievable for them in isolation.

The most difficult part for the central team was to evaluate those business strategies that might be profitable for individual businesses but they did not fit within the overall direction of the group. The group was aware that the overall economic outcome eventually was the mere sum of the individual results; therefore, when the economic situation was favourable, it was easy for the central body to allow these cooperative to make their own decisions, but this freedom used to be restricted during economic recessions when survival and not growth was the objective.

Organisational Flexibility

When covering flexibility, it was important to make the difference between overall flexibility of the cluster, the company and the individual business units. The flexibility of the group was limited to the changes that the majority of the individual members on the assembly approved, which it would suggest a long and difficult process unless the economic circumstances really demand it. The organisation as a whole was rather static as the standardisation of processes was the norm, but this considerably differed from what happened within each individual business unit where there was more freedom and being proactive was rewarded. Another area to improve was recruiting; the son and daughters of the cooperative workers had

priority over the others, which in some cases limited the ability to choose people better qualified or more appropriate for the job.

Dynamism

Size was a constraint that has limited the agility of the organisation. Nevertheless, they were aware that in the current market environment non-dynamic organisations would struggle to survive and consequently they adopted some actions that it was expected would help improve their reaction capability and proactivity. Innovation was the key driver at the moment; those innovative and commercially successful departments pulled along and set the reference speed for the other areas. This helped increase the overall speed of the system. The results had been mixed and therefore difficult to assess. In their case, the relationships with the University provided an additional source of dynamism as it was used to encourage research in those areas and positions that the market appointing as the future direction for the industry.

The organisation was also looking at new ways of doing business; it was mentioned how difficult it was to compete as manufacturer in that sector, so they have considered the option of commercialising products produced by other manufacturers and incorporating them as part of their brand offering; lower costs and higher margins. This had been considered unacceptable some years ago but it was not considered an issue at the moment as long as the quality was maintained and the brand image protected. In other words, the focus of the organisations was shifting from production to commercialisation and marketing of the products.

Geographical Proximity

Geographical proximity was an advantage when seeking fast response from the environment you traded in; in addition, it was easier to share information and resources as well as to develop close formal and informal relationships. Yet, being too close to your supply and customer base made the company short-sighted and not vigilant to the outside environment.

### 11.4.3 Interview 3: the Perspective of a Medium Size Organisation

The third interview follows the same sequence of subjects as the previous interview.

Internal Regime

This organisation was born from a group of people committed to their environment in the early 1970s; today, it was a global company competing in the international market, despite all changes along these years people remained as the main assets of the company. Regarding the business itself, innovation and R&D were the principal drivers of the company's growth; as a result, it was not difficult to understand the central role adopted by the technological centre, even during the economic decline the investment in this area increased. The company was rather selective about the projects taken on; they look for products or processes that required high value added activities that were difficult to copy and with high margins attached.

According to the management, keeping innovation and quality standards involved a lasting investment in personal development. This aspect was well represented within company values which promoted growth at personal and professional level. The company's aim was not only to achieve customer satisfaction but also to reassure the people working for them. Consequently, management put great effort on encouraging their participation, communication and formation. The company also believed on diversity regarding people but also at a business level, that was why they diversified the business covering various industrial sectors; this action aimed to strength the survival and competitiveness of the company as well as strengthen their presence in other international markets. Acquisitions had been the other method for international expansion.

The Market Place

Most of the products produced by the company were directed to the automotive industry nevertheless, the organisation was conscious that this sector was extremely competitive and it suffered a deep decline in the last years, so they decided to diversify into other industries such as telecommunication and white goods where margins were higher. The company specialised on high added value components that required a considerable amount of work and skills, in other words, activities that were not easily replicable by the competition.

As a result of the economic downturn and their financial stability, the company had been able to secure projects in non-traditional sectors and with companies that were difficult to approach before. These new projects allowed the organisation to minimise the impact of the economic crisis and secure work for the next 3 years. These customers would not have approached them before because of their higher prices, but now their financial stability assured customers product delivery and consequently which meant that they could be trusted.

Relationships with the Suppliers

The company maintained different type of relationships with their existing suppliers depending on their position within the supply chain; their association with suppliers of raw materials was significantly important as they sought new ways to reduce costs, solve problems and enhance their products to better satisfy customers' demands. With other suppliers they were working together towards developing a greater product portfolio, testing or just following new industry trends. Nevertheless, they were many suppliers with which the relationship was limited to a mere purchase-sale activity. The company also differentiated these relationships depending on their location; they tended to maintain fluid and responsive links with companies located nearby while internationally the focus was on cost.

Relationships with other Cooperative within the MCC Group

Project-based partnerships with other cooperatives of the group were not the norm; so far only two projects could be classified under this category and both involved R&D activities in collaboration with other technology centres. Many cooperatives in the group behave as actual competitors in the marketplace; this competition had somehow been regulated by the creation of a gentlemen's agreement which stopped them from destroying each other and encouraged sharing market information and contacts. They also joined forces to take advantage of economies of scale, reduce administration costs and achieve better prices by purchasing large volumes. This behaviour was rather conventional within the automotive division where companies carried out some collaborative projects with other companies within the cluster benefiting from resource solidarity, purchasing in bulk, access and delivery of new business opportunities as well as gathering information about attractive markets or sectors. This collaborative approach was more difficult to find between distinct divisions where competition was the norm.

For them the main difference between both types of collaborations, supply chain and alliances, lies in the fact supply chain relations are a necessity for doing business while the alliances in the cluster relate more to a voluntary decision to benefit by cooperating together by sharing information and best practices.

Organisational Flexibility and Dynamism

In this case dynamism and organisational flexibility was represented by continuous improvement at different organisational levels and resource flexibility. The organisation recognised the importance of following the rapid fluctuations of the marketplace and that was why organisational changes were well accepted; any proposed action was justified in front of a representative board that would eventually be the one to approve the set of measures to be implemented in the future. Maintaining regular meetings where the real situation of the company was accurately explained to all employees was considered to be crucial for the smooth functioning of the business; 90 to 95% of employees attended these meetings as the management encouraged the staff to participate in them and an agreement was necessary before any decision was taken.

Employees accepted the need to be flexible but it came at a cost for the organisation; higher salaries were associated in most the cases with flexibility; up to 20% if a transfer was offered at national level, around 40% in Europe and up to 80% into Asia. Being part of the Mondragon Group also gave them access to other collective resources such as the University, various technology centres, market knowledge, suppliers or funding which increased the ability of the company to access new business opportunities, deliver challenging projects and stay competitive in the market place.

Geographical Proximity

They believed that being geographically close to each other in the Basque Country did not have any impact, but this was different when moving abroad; when they decided to open a factory in China, it was not easy for the employees to get used to be there for long periods of time. The fact that various cooperatives of the group decided to base their factories close by, made a real difference; people and companies developed strong informal relationships over there that would be later continued and enhanced once they were back in the Basque Country.

The Group

Being part of a large group provided stability, especially during difficult times, but when thinking about the future it was important that the strategic team searched for new business opportunities that did not exist within the current offering. Sometimes those new areas were successful and others not, but it was important to keep trying. One of the main challenges within the group was the difference in size and power among the organisations; this created high levels of stress among the members.

### 11.4.4 Interview 4: the Perspective of a Small sized Organisation

Internal Regime

The company's leadership in the market was based on their know-how and innovative capabilities; according to the management, those companies willing to enter the market needed to be ready to employ time and money in developing these capabilities. Being centred on a niche market had advantages, but it also meant that a few people knew about your product and its benefits, so it was important to spend time educating the market and encouraging them to change their behaviour. In this case, the market place defined the behaviour of the organisation; in order to tackle all the necessary aspects, the cooperative had been organised following three main business areas; internal operations, product development and commercialisation. The company encouraged and promoted knowledge development and distribution but this would not have been possible without a really involved and participative workforce. The management tried to facilitate the flow of ideas and information by adopting a flexible structure.

The management highlighted the individuals' and the company's culture as the drivers of the effective internal functioning. They expected that values such as loyalty, solidarity, ethics were a given for those employees joining the company so they had defined 4 aspects that guided the internal behaviour of the organisation;

1. Positive attitude towards work and others.
2. Professionalism when analysing and solving problems.
3. Proactive innovative approach within all business aspects.
4. Experimentation, collaboration and reflection on previous experiences.

These four aspects were reviewed every year just to ensure that they stayed current and relevant to the business or they needed to be modified to reflect more adequately the reality of the business.

The Market Place

This was one of the youngest and most innovative companies in the group which had managed to become a leader in a rather niche segment of the construction industry in a relative short period of time. The raw material used in this market was a dynamic material easily altered by the weather, temperature, etc consequently, both knowledge and testing facilities were required in order to work it properly; these aspects became important barriers to entry as any company wanting to enter the market required a considerable amount of time and money to develop the necessary know-how and financial capabilities.

Other substitute products could be found in the market but not with the same properties; the company's primary product was more expensive than its substitutes but the management did not consider this as a disadvantage. The marketing of the product supported by the sales representatives' pitch were essential to explain the benefits of the product to potential customers and to convince architects and builders that they needed to change their current materials and suppliers.

The management highlighted the importance of adopting three independent strategic units directly associated with the three different market segments they wanted to target; by doing this, they had managed to focus on the development of the product, marketing and business type that best suited the customers within each market segment. They believed that company growth and market success was due to this approach; the company started 10 years ago with 16 employees, currently they employed 234 people.

The other aspect that the management wanted to highlight was the contribution of these employees who greatly added value with their work but especially participated in the different activities and decision making process of the three strategic units as well facilitated continuous development and innovation.

Relationships with the Suppliers

The first three years were characterised by arms-length relationships with purchasing decisions as the only consideration. Nevertheless, this approach changed in posterior years and the business sought to

develop closer and more solid relationships; they were especially trying to increase their competitive advantage through research into new materials and ways to reduce costs when possible. It was important for them to establish and consolidate these partnerships but without generating deep dependencies that might limit their future business opportunities. In the last years they had been searching for alternative suppliers in case that there was any problem with current suppliers but in normal circumstances they would like to develop relationships based on loyalty as a means to ensure quality and information sharing.

Relationships with other Cooperative within the Mondragon Group

The management described this type of cooperation as limited, they believed that the group as a whole did not contribute much to them and there were only a small number of joint projects where the company was involved; they were closer to those organisations within the cluster that had similar business activities than other competing in different group divisions. The other aspect pointed out was the fact that companies within the cluster had different company and sector dynamics when doing business; different size, speed, purchasing and sale practices, bureaucracy… which made difficult to align processes and work together. The relationships with other cooperatives in the group could be describes as good but rather limited due to 3 main reasons;

1. Different business segments which did not always allow taking advantage of complementarities and synergies.
2. Different size and business culture; diverse business problems and distinct way of doing business.
3. And inwards focus.

This did not mean they were not willing to engage into partnerships; alliances within the group would be undertaken if they make business sense but not for the sake of saying that they collaborate together. Within the cluster there was a large organisation which was well recognised in Spain and at international level for their products for the construction industry; the respondent believed that being close to this specific company and its sub-units helped them position and brand their products better as well as access new business opportunities. The cluster as a whole did not influence the company as much as this other company did in terms of business growth, but being part of the cluster was beneficial during difficult

economic periods as it allowed them to group together and to face the situation as a unit pulling together resources and especially funding.

Organisational Flexibility and Dynamism

The management of the company gave great importance to the business flexibility as well as to continuous improvement and product innovation; they believed that the company was currently able to quasi-perfectly adapt to fluctuations in demand. The market opened the door to new business opportunities but the company needed to be ready to diversify and extend product lines, which in most cases required a great investment in time and money. Regarding their manufacturing operations, they continued producing as long as the orders kept coming in, even increasing the shifts or working during the weekend if necessary, but they would stop manufacturing as soon as they run out of work.

Concerning the product, they sought a continuous and incremental approach to innovation; the management acknowledged that this niche market was growing and there were plenty of opportunities to engage in new projects but they believed that currently it was not worth committing themselves to those projects that demanded significant extension of the product line and diversification resulting in considerable investment in terms of both resources and money. In their opinion, concentration of activities and resources as well as maintaining a limited size and being independent to make decisions were the key to their success.

When asked about the future, the manager recognised that a greater level diversification would be necessary in the future if they were going to keep their competitiveness and therefore they were already considering taking over a competitor in trouble which offered a different line of products; nevertheless, the idea was building on their current core business not replacing it. He highlighted innovation and especially being first in the market as critical to secure market success.

Geographical Proximity

As they were a new business trading in a very niche market, geographical concentration did not have a major effect in their performance or ability to compete in the marketplace

The Group

They believed that the group offered limited benefits to the company apart from the social cohesion and resource availability. Following this perspective, the group was viewed as a huge super-structure which did not manage to stay close enough to the bottom-line businesses. Large cooperatives always received greater attention and most policies were centred on assisting this type of businesses despite they did not represent the reality of the economy in the local area.

The management of this company believed that the fact of joining a group or collocating nearby other companies did not immediately convert into synergies; the aim of the cluster was to promote collaborations and create value together so companies within it could access more business opportunities, but in his opinion this was just a theoretical concept and did not represent reality. According to him, there was a mismatch between both realities, central body and business units; the central team does provided some information on what they believed were the main problems within the group but they did not tend to ask the various cooperatives about their actual problems, what help they required or how they could be supported by the central body. In addition, there was what he called the “readiness Vs opportunity” factor; when companies were happy and willing to engage in new projects, the opportunities wouldn’t come while on other occasion it would be the right moment to get involved in new activities but the companies were not ready.

Business size was also mentioned as another factor that it should be taken into consideration when making strategic decisions within the group and not only the business sector or division where companies compete in. Similar size companies faced similar challenges and followed similar approaches when making decisions.

## 11.5 Conclusion

This chapter meant to further explore the dynamism of the company by confirming the interpretation of the gathered results and getting more detailed information on these areas that needed further clarification. It represented an external validation of the model.

The Mondragon Group was a highly diversified group formed by cooperatives of different sizes and approaches to business. The aim of this chapter was to get a profound insight to the views and opinions of some of the representatives of these different realities within the group; interviews were carried out among a member of the General Council, a large organisation, a medium-sized company and a small-sized business. The main topics discussed were:

- Their opinions about the group and the way it functioned.
- The dynamism of the group and their particular organisation.
- The relationship with other members of the group and external suppliers.
- And the importance of geographical proximity.

The member of the General Council explained that in his opinion the success of the Mondragon Group was due to the existence of two factors; a cohesion factor that brought people and companies to work closely together, and a group factor that helped stabilise the decision making process while reducing conflicts among the various members. The cohesion factor was in some way a direct effect of the origin of the group as companies located close to each other seeking financial and human stability rather than economies of scale. The group factor grew in importance with time; an increasing number of cooperatives and industrial diversification demanded a central body looking after the interests of all members and providing consistency on the decisions. In the case of the Mondragon Group, dynamism was not achieved by implementing new processes or introducing new products but by positioning key people and resources in those areas that required an energetic push.

Large cooperatives like any other large organisations suffered from a slow decision making process, inconsistencies and duplications; these issues were being dealt through the standardisation of process as well as the integration and coordination of activities. Dissemination of the organisational culture and specially the engagement of the younger generation were other two areas that they were finding difficult; the organisation was trying to bring the company up to speed by changing the mentality (moving from being mere producers to distribute products not manufactured in-house) and increasing their links with the University and other Technological Centres. Having partners and suppliers close by facilitated a fast response.

The medium-sized organisation showed a similar approach as the emphasis was once again in innovation and R&D as source of competitive advantage. Nevertheless, this organisation relied on its own Technological Centre for the development of innovative products and solutions and there were only a few projects that took place in collaboration with other Technological Centres within the group. They managed any internal issues by holding monthly meetings where the situation of the company and future direction was discussed. In their opinion, the main benefit of being a member of the Mondragon Group was the social element which offered greater stability during difficult economic periods; the main difference between both types of collaborations, supply chain and alliances, lied in the fact that supply chain relations were a necessity for doing business while the alliances in the cluster related more to a voluntary decision to benefit from cooperating together by sharing information and best practices

The small-sized business could be described as the most dynamic of all three businesses. This was a very innovative company with an energetic and flexible approach at all levels; managerial, commercial, production and R&D, what allowed them to have a nearly perfect synchronisation with the market place. They believed that the key to their success rested on the concentration of activities and resources as well as on maintaining a limited size and their independence. In their case, the majority of the improvements were achieved in-house and in a few cases through the collaboration with external suppliers; they did not normally access central resources and they believed that the main benefit of being part of the group was the financial stability that the group provided on difficult economic periods. No cultural issues were mentioned.

In summary, it could be said that all types of organisations acknowledged of the importance of innovation and flexibility for the long-term survival of the organisation. Nevertheless, they had different ways to achieve them. The interviewed large organisation showed slow internal process and it did not hesitate to approach central resources seeking to speed-up the innovation process and access novel solutions. The use of central resources decreased with the size of the company; the smaller organisations were, the less they use them. In the last case the relationship between both of them was non-existent. Internal issues seemed to be better managed by the smaller organisations as they showed no problems in engaging their employees on the daily activities of the organisation.

For the small company, the group did not understand the individual members within the cluster; they did not seem to acknowledge that differences in practices were also related to dimensions of age and culture; looking for complementarities and especially synergies without taking these other aspects into consideration was described as a theoretical exercise far from reality.

# *Chapter 12: Discussion*

## 12.1 Introduction

This chapter discussed the research findings in relation to previously published work, any limitations and weaknesses of the research as well as how these research findings could influence the knowledge in this field.

Markets became extremely competitive and volatile in the last decades, companies could not compete on their own any more, and as a result alliances and spatial agglomerations becameone of the reference models. This contributed towards the promotion of industrial clusters as a means to upgrade the industrial structure and economic growth of these regions by regional and national Governments (Ahedo, 2006). In some instances, it was believed that the success of the MCC Group was due to the complementarities and synergies created by the geographical clustering and the interaction among its members, therefore testing the following hypothesis could provide some additional data on the subject; "*the cluster formed in the Basque Region of Spain by the geographical concentration of diverse manufacturers within the MCC Group shows a greater level of dynamism than those of the individual members*".

This research indicated that the cluster as a whole was a more dynamic system than the companies within it nevertheless, there were specific dimensions where member companies were clearly more developed than the cluster . The research also suggested that despite of the clear differences in the level of dynamism among cluster members, all companies benefited in some way from being part of the cluster; these benefits were different in nature depending on each specific members. In order to have a meaningful insight within the results, it was necessary to consider the particular characteristics of this cluster and the findings obtained by using an original model capable of measuring the dynamism of the individual organisations and the cluster at an aggregate level.

## 12.2 Contribution to Knowledge

### 12.2.1 Characteristics of the Mondragon Group; Manufacturing Cluster

Koza and Leming (1998) suggested that industries characterised by dynamic changes were more likely to engage in partnerships and consequently the formation of partnerships traditionally favoured those companies with abundant resources and well matched interest (Levine and White 1961, Pfeffer & Salancik 1978, Eisenhardt & Schoohoven 1996, Li & Atvahene-Gima 2002). This was due to the fact that strategic partnerships sought out to control their environments by protecting resources and minimising uncertainty while taking advantage of the market, acquiring knowledge and securing important resources. The origin of the Mondragon group was different as companies decided to collocate closer together and partner as a means to face the challenging external environment after the civil war and benefit from the support of the local community. This resulted in the adoption of a new business philosophy and a particular way of doing business, which was more in line with Townsend's (2003) considerations for the selection of right partners. In the 1950s, this new approach received the support of the community and was not long before other companies joined them, but in this occasion seeking financial and resource stabilisation. In addition, the economic growth and social success of these companies attracted skilled workers and suppliers for each of the different activities. At this initial stage, the cluster was no more than a "group of firms within one industry based on a particular location" (Swann & Prevezer, 1998). With the pass of the years, partners would increase their influence on the region, reducing the uncertainty about their business model, acquiring knowledge and securing important resources as employees, knowledge and finance, which followed Beverland and Breterton's (2001) view on strategic alliances.

In order to emphasise the characteristics and evolution of this specific cluster and the peculiarities of this strategic alliance, the contribution to knowledge was divided into three points:

a) Addressing the characteristics of the cluster according to the nine elements described by Andersson et al (2004), Maskell and Lorenze (2006), and Teräs (2008) in Chapter 3.
b) Determining cluster dynamics based on the interpretation of the research findings.
c) Answering the hypothesis by comparing the cluster model against the model for the individual members.

### A. Elements of the Manufacturing Cluster

Geographical Concentration

The cluster in the 1970s adopted what they called Regional Groups where the emphasis relied on the recognition of close collaborations as a better means to compete than doing so in isolation; according to Andersson et al (2004), this supported the search for new ways to achieve efficiencies and specialisation. The historical evolution of the group confirmed growth in the number of companies and the search for efficiencies not only in a specific sector but in several, forming a conglomerate.

Rosenfeld (2005) defended that the geographic borders of a cluster were determined by the distances that employees and entrepreneurs were willing to travel to attend meetings or turn up to work. In the case of the Mondragon, the pattern of expansion followed by the cluster confirmed this point of view as it started with companies located close by the Mondragon valley but soon expanded to the whole of the Basque Country and internationally during the 1990s. In addition, the member of the General Council described geographical proximity as a critical factor which helped grow and kept the group together; according to him, culture acted as the cohesion factor. This view supported Minztberg's (1983) observation; "culture is the soul of the organisation; the beliefs and values, and how they are manifested. I think of the structure as the skeleton, and as the flesh and blood. And culture is the soul that holds the thing together and gives it life together".

When asked about the importance of geographical closeness in current competitive markets, the respondent to interview 2 replied that geographical proximity was beneficial when seeking responsiveness from the environment the company traded in as well as when sharing information and resources, and developing formal and informal relationships. On the other hand, the respondent to interview 3 did not believe that being close to each other in the Basque Country was especially beneficial for them but it made a clear difference when organisations aimed to establish themselves abroad; adopting collation strategies when moving into international markets also helped maintain employees' motivation and the development of informal relationships.

The respondent of the interview 4 raised a different point; he mentioned that geographical concentration had limited implications for those businesses trading in very niche markets. In their case branding was the

only benefit. Branding and reputation were also mentioned by the large organisation as some of the direct benefits of being part of the group. These responses contested the comment made by Martin & Sunley (2003) and Wolfe & Gertler (2004) describing the value of "the cluster brand" as overestimated.

Specialisation

The good results and social support of the companies within the cluster attracted many other entrepreneurial companies that were not necessarily sector specific; instead of rewarding specialisation, the cluster welcomed diversity. This diversity made it difficult to protect individual organisations during the economic downturn of the 1980s and the group recognised the need to manage this diversity by adopting a more business-like and less sociological philosophy which had a direct impact in the cluster's structure; a federal structure based on industrial divisions was adopted with a more practical decision-making emphasis. This approach suggested that certain organisational specialisation was necessary in order to manage diversity.

Phlippen and van der Knaap (2007) considered flexible specialisation and related variety as a means to exploit complementarities and generate knowledge spill-over. Respondents to the interviews 1 and 4 considered diversity as one of the advantages of the cluster, especially during difficult economic times, but also for the generation of new business opportunities and implementing added value activities in all sectors. Among the drawbacks were a slow and not always effective decision-making process combined with a difficult alignment of processes and joint projects.

The challenge for the group was to evaluate those business strategies that could be profitable for individual members but did not always fit within the overall direction of the cluster; they believed that the overall economic outcome of the cluster resulted from the sum of the individual results and consequently every decision should be considered; spin-offs and innovative avenues were welcome during favourable cycles but this freedom was restricted during downturns (interview 2).

The latest approach within the cluster structure aimed to analyse the different business units in relation to their general activity and not specific products or geographical location; this helped reduce duplication while enhancing integration and coordination (interview 2). This put in doubt the relevance of geographical location for the future competitiveness of the cluster.

Multiple Actors

Porter (1998) and Andersson et al (2004) explained that collocation was not enough to create synergies and and it was essential to develop relationships among the members and other external entities; the cluster maintained strong relationships with the regional and local authorities as well as research centres, and even started their own university. In the case of the cluster, the social and business philosophy shared by the cluster members enhanced the relational embeddedness and trust among the members nevertheless, companies were the ones to define what type of relationships they wanted to maintain with the other businesses in it; from arms-length financial and resource contributions to joint commercial and social projects. In order to encourage collaboration and economies of scale within the group there was a high level strategic team that identified and led organisational grouping to take advantage of emerging new business opportunities (interview 1). The principal feature of the cluster relationships was solidarity (interview 1, 3 and 4), thus opportunistic behaviours were not welcome. This corrroborated Phlippen and van der Knapp's (2007) opinion on the importance of the role played by embeddedness.

Competition and Cooperation

Andersson et al (2004) explained that both cooperation and competition defined the relationship between interconnected members. The group acknowledged the importance of collaborations as a means to exploit new business opportunities but also recognised that cluster members were independent companies seeking to compete in international markets and in some cases companies might be competing for the same potential customer. During the interviews, the existance of strong internal competition was confirmed as there had been cases where the central body needed to step in to regulate this competitive behaviour and avoid cluster members destroying each other; the outcome of this intervention resulted in the development of an internal infrastructure connecting companies so they could share information and increase transparency (interview 3).

Regarding cooperation, the survey indicated that all companies were willing to engage on collaborative projects especially as a means to enhance the service provided or to access new business opportunities. Cluster members also considered joint projects if they provided them with access to new knowledge, experience in the sector, advanced technology or other resources as well as reduced time to market of their products. They believe that having common objectives, open channels of communication and using

no intermediaries facilitated this collaboration. Nevertheless, the responses obtained during the interviews suggested a different reality; the central body believed that the role of the cluster was to generate economies of scale based on purchasing and product offering. They also expected that the use of the different research centres encouraged innovation and knowledge distribution that could result in accessing new business opportunities. Nevertheless, they were aware that the market offered more opportunities than those actually exploited. The large and medium size companies enjoyed the benefits of joint economies of scale and therefore they engaged more frequently in collaborative projects, they also pointed out that cooperation was much easier within the same cluster division. In the last interview, one of the manager described three considerations that limited the effectiveness and frequency of joint projects;

1. The existence of different business segments which did not always allow taking advantage of synergies.
2. Cluster members with diverse size and business culture which resulted in distinct business problems and ways of doing business.
3. And inwards focus.

These responses contradicted Porter (1998) when he stated that clusters represented the vehicle to overcome inwards focus and rigidity as well as disagreed with Karaev et al (2007) who suggested that joining forces into a cluster would offer a direct advantage for small and medium sized businesses that strategically decided to join it; in this case, the manager of the small company had the impression that the cluster was more concerned about large companies than small businesses, but he agreed with Karaev et al about the fact that top-down strategies were not effective in most cases.

Looking at the stages presented by Boari (2001), it could be said that the cluster was in stage 3, characterised by planned vertical relationships combined with emerging horizontal relationships. Nevertheless, horizontal relationships needed further work as they were not as effective as they could be (interview 1).

Critical Mass

Porter (1998) mentioned that most successful national industries were formed by groups of companies and not isolated members, but he did not consider the significance of creating win-win relationships in the

long-term; in the case of Mondragon, there had been cases where successful companies decided to exit the group because the cluster was no longer adding value to them any more (interview 1). Critical mass could have beed considered important at initial stages of the cluster but at this moment it was not an influencial element at strategic level; the greater accumulation of common financial resources was the only case where critical mass was still important. In the last decade, culture was the element which kept the group together as one.

Long Life Cycles

Andersson et al (2004) explained that clusters were not temporal intitatives and as a result they changed and evolved by going through different stages; after 60 years of economic and social interaction, the mondragon cluster could be described as a clear case of long-term alliance; the first stage took place between the 1950s and the 1970s resulting in the accumulation of companies. The historical differentation of the subsequent stages two, three, four and five was much harder as they were still simultaneously on going; cluster members were actively seeking new business opportunities by working together, in addition the group attracted new organisation into the region interested to work with them while many of the cluster members decided to expand their activities internationally. The cluster also considered new business ventures that allowed them to stay competitive in the future. This indicated that the stages did not follow a clearly defined linear approach but concurrent methodology.

The response provided by the representative of the central body during the first interview, explained how the emphasis of the group changed in the last 15 years, moving away from market isolation towards benchmarking, standardisation of procedures and stability, and finally to branding and reputation. During the life time of the cluster, many companies decided to enter and exit the group; these exits were tipically due to a lack of agreement on the strategic direction of the group or because they felt that the cluster no longer added value. This last reason intensified the significance of dynamism and therefore, the cluster should be aiming to be a more dynamic and flexible entity capable of understanding how to add value to the cluster members on an individual basis. These responses confirmed the change in benefits and emphasis of clusters along the years (Andersson et al 2004) and the necessity to better understand the current dynamism of the cluster and how it could be used to enhance the value provided to individual members.

Knowledge Creation and Innovation

Knowledge creation and innovation were considered to be the more efficient means to develop competitive advantage (Andersson et al 2004); following this view, knowledge was one the four strategic areas identified by the cluster (interview 1). The questionnaire results denoted R&D as one of the main assets of the organisation together with the employees; fourteen out of twenty four companies run training or personal development courses at least once per year to encourage the creation and sharing of new knowledge. Nevertheless, the knowledge dimension of the cluster model illustrated a different attitude; there was a commitment from the central body towards knowledge generation and distribution but it did not achieve full effectiveness on doing so due to the different attitudes shown by the individual members towards it; cooperation, distribution and applicability were the main challenges. Collaborative projects involving research centres were the most common types of joint project (interview 1 and 3).

Social Capital and Trust

Mintzberg (1983), Porter (1998), Maskell and Lorenze (2006) and Teräs (2008) agreed on the importance of local and institutional culture for the normal functioning of organisations and clusters; the representative of the cetral body aggreed with this view and explained that the success of the group was the result of the combination of two critical factors;

1. the existence of a cohesion factor that brought people and companies to work together and
2. the existence of a group factor that helped stabilise the decision making process while reducing conflicts among the different members.

Yet, the results of the survey and the opinions of other managers indicated that the group identity and values were not clear; the survey showed that two thirds of the cluster members revealed having doubts about sharing the same values and mentality with their employees. They were not sure either whether the identity of the company was clear to the rest or not. The manager of the large organisation believed that the values originally developed with the first cooperatives did not to relate to the new generations anymore; the society and the people evolved while the original values did not. This became a relevant point of discussion during the assemblies as the group was struggling to retain and engage young generations. Young generations obtained the positions too easily and did not seem to value the advantageous position and job security. Nevertheless, they should be aware that this was only true if the

group survived thus a review was necessary seeking the modernisation of the current values and bringing them closer to the current society. With regards to the values within the organisations, it was expected that the cultural differences among members were minimal as all companies sought to maximise profits following the same fundamentals. Nevertheless, 'the way of doing business' in each organisation varied and this had a direct impact onto other lower level dimensions differentiating the various members even more.

Internal and external linkages

Maskell and Lorenze (2006) and Teräs (2008) believed that a cluster needed to be aware of what the competition was doing and what products were available in the market; the survey showed that the cluster audited the internal operations and the external environment on a continuous basis but the main challenge for them was to fully exploit the information gathered about their direct competition as only six out of fifteen managed to ever implement any industry best practice. The manager of the large companies believed that sometimes the group was too busy looking inwards and forgot about what happened outside.

With regards to the links with external organisations, the results from the questionnaire suggested that alliance relationships were better developed than the relationships with its suppliers. This seemed logical considering the nature of the group and the benefits of belonging to it. Most supply chains were well established long-term relations with European or global suppliers which were reviewed frequently nevertheless, the majority of the companies described this process as costly and complicated. The cooperative employed a comprehensive method for supplier selection but the group did not manage to fully profit from most relationships yet.

According to the manager of the medium sized enterprise, the main difference between both types of collaborations, supply chain and alliances, lied in the fact that supply chain relations were a necessity for doing business while the alliances related more to a voluntary decision to benefit by cooperating together, sharing information and identifying best practices.

**B. The Manufacturing Cluster; Current Dynamics**

Within the long-life cycle element it was acknowledged that it was necessary to better understand the current dynamism of the cluster and how it could be used to enhance the value provided to individual members. This consideration was directly related to the hypothesis and so it became even more relevant for this research. Following the social and institutional approach to clusters (Cortright, 2006), the research focused on the business organisations elements within it as a means to determine the overall characteristics and location of the cluster: the result was the development of and original framework covering the different higher and lower dimensions of an organisations. This model aimed to measure the dynamism of the cluster and member organisations by assessing the dynamic capabilities presented within each of the twelve organisational dimensions identified during the literature review. Acknowledging what dynamic capabilities were currently implemented by the organisation provided an insight into the overall flexibility of the specific dimensions and the organisation as a whole. The aggregation of the individual results determined the dynamism of the entire cluster.

The outcomes of the cluster model indicated a medium range of flexibility with culture, strategy and ICT as the strongest segments, while benchmarking, logistics, and surprisingly alliances were among the weakest. In order to better understand these results, each dimension was individually analysed;

Strategy

The results of the survey showed that the cluster was formed by both traditional and conservative organisations as well as customer driven and entrepreneurial businesses. Taking into consideration Hodbeche's (1994) characteristics, the results denoted diversity to business approaches and organisational speeds; this outcome was confirmed by the manager of the small company during interview 4 when they described it as one of the reasons for a limited cooperation. This diversity might not always be a disadvantage as it limited the risks adopted by the group and provided a greater stability to the system; the cluster just needed to be conscious to continuously seek new business opportunities and look for emerging sectors so the cluster did not get stagnated.

According to van Hoek et al (2001) the strategy implemented by these organisations sought to enrich customer experience, cooperate and compete and master change and uncertainty also at operational

levels. The model showed the strategy dimension predominantly populated with capabilities coloured in pink which suggested a customer driven approach where flexibility played an important role. Capabilities such as cooperation, integration, continuous learning, and responsiveness were not so well developed which indicated that the cluster had problems transferring this dynamic approach into the lower organisational levels.

Management

The results for this dimension mirrored the strategy segment with two clearly differentiated management styles; an entrepreneurial or result-orientated and efficient leader, but still open-minded enough to acknowledge and take advantage of new business opportunities. The results for this dimension supported the views of Black and Porter (2000) and Cooksey's (2003), as it showed managers with a positive attitude towards change at different levels who encouraged new trails and experiences. However, this cluster might not achieve the expected results as this attitude was not always supported by empowered employees with greater authority on the tasks so they were more independent and balanced individuals capable of making decisions (Dixon 1998, Jamali et al 2006). In order to have a positive impact on the attitude of the rest of employees (Burnes & James, 1994) managers also needed to be a source of inspiration by adopting a management by example approach and having tolerant behaviour to failure (O'Brien, 1998) which was something that the group lacked or it was not well communicated at this moment in time.

Culture

The culture dimension showed an entrepreneurial attitude to do business where innovation and growth were central to the way they did business, and which recognised the value and potential of people and rewarded them for their contribution. Despite promoting innovation, there were challenges regarding trust and continuous learning which affected the capacity for change. The cluster at this moment in time suffered from a lack of shared vision and clear identity; a view that was shared by the cluster members. This was clearly a major concern for the cluster as it negatively influenced other dimensions; this supported Kaplan's view (2005) about how strategy was directly influenced by the harmonic integration among three 'hard Ss' (strategy, structure and systems) and four 'soft Ss' (skills, staff, style and shared values). In other words, all elements were interrelated and pursued common goals.

The three managers interviewed (interview 2, 3 and 4) recognised that the values of the cluster represented the society no more and needed to be reviewed; these statements supported Kootter and Heskett's (1992) view about organisations and static attitudes. They believed that cultures should be centred on trust and that proactive environment was keen on embracing change and making the most out of it. The fact that the cluster was formed by cooperatives successfully working together under the same group umbrella for more than 60 years should ease this transaction.

Not having a clear vision, identity and shared values could also be influencing the competitiveness of the group as they were not able to clearly differentiate themselves in the market place (Harris & Ogbonna, 1997); following Wilson's (2001) observation, previously mentioned diversity was affecting individual internal norms and values which were transferred into the cluster creating confusion. During interview 4, it was suggested that the cluster should reconsider the organisational structure of the cluster by actually including this diversity within the system.

People

Meredith and Francis (2000) described the ideal employee as a multi-skilled, flexible individual who was able to exploit his/her knowledge, judgement, experience and intelligence to his/her full potential to evaluate new initiatives, develop opportunities and make decisions. Following this definition and the employee characteristics compiled by Sherehiy et al (2007), employees of this cluster could not be classified as dynamic resources. The survey identified employees as one of the main assets of the group due to their contribution, commitment and skills; in order to maintain and enhance their value, personal development activities (Kaplan & Norton 2001, Ho & McKay 2002, He 2008) were frequently developed. In addition, it was expected that these activities would help and encourage staff to take ownership of tasks and adopt entrepreneurial initiatives (Lingle and Schiemann 1996, Breu et al 2002, Johnston et al 2002 and Franco and Bourne 2003). In this case, despite employees being willing to cooperate and contribute with their work and motivation for improvement (Kidd 1995, Hormozi 2001), undertaking new responsibilities or change (Sheridan 1996, Fliedner & Vokurka 1997, Gunasekaran 19999, Sharp et al 1999, Yusuf et al 1999, Zhang & Sharifi 2000) did not have as positive response as expected, even temporality, diversity and mobility were not welcome which contradicted the views' of Gehani (1995), Sahin (2000), Jin-Hai et al (2003). During the interview with one of the managers (interview 2), he also

expressed his concern about the lack of participation and passiveness of some of their employees, but he started seeing a change towards a more positive attitude after the economic downturn.

Regarding the link between empowerment, team-working and decision-making ability (Hormozi, 2001), the survey highlighted another important reason for the limited proactivity of the companies; active cross-functional and cross-organisational relationships (Gehani 1995, Fliedner & Vokurka 1997, Gunasekaran 1999a, Sharp et al 1999, Meredith & Francis 2000) were not typically used. Their use could enhance people's ability to make sound decisions and provide fast responses to unexpected events (Plonka, 1997) as well as increase the effectiveness of collaborations (Denison 2000, Van Oyen et al 2001). Experimenting with a diverse range of activities and methodologies was suggested as a means to accustom employees to a more dynamic working style (Dawis & Lofquist, 1984)

Knowledge

On the words of Senge (1990) companies could generate competitive advantage by exploiting both individual and collective learning; in order to make this possible, people needed to disregard their old ways of thinking or mental models and be open to work with others (personal mastery). This required comprehending how organisations actually worked (system thinking) and developing a plan together (shared vision) that would allowed them achieving that vision (team learning). The answers to the questionnaire indicated a clear and determined mind-set (Starkey et al 2004); the cluster understood that organisational learning was the result of a group of individuals that worked and learnt together towards common goals and therefore as Hitt (1996) pointed out, it could also act as a bridge to reduce the gap with rivals or even provide an advantage over them. Consequently, companies needed to it promote and reward the creation and distribution of knowledge as Al-Alawi et al (2007) suggested.

According to Lustri et al (2007) knowledge responded to market forces which implied dealing with uncertainty and change. This demanded the development of the right context for organisational knowledge creation and management achieved through the analysis of the external environment and relationships. When looking at the knowledge dimension within the cluster model, it was easy to observe different attitudes towards it; some companies had spent a considerable amount of time and resources developing this part of the organisation while others decided not to do sot or acquired it from outside. This

dimension showed an equal number of capabilities coloured in pink and orange, which indicated the commitment of the cluster towards knowledge generation and distribution but also the lack of effectiveness in achieving it; cooperation (Al-Alawi et al 2007), distribution (Lustri, 2007) and applicability were the main challenges. The applicability of the generated knowledge (Spender 1994, Grant 1996, Demarest 1997) was another aspect that they had not managed to master yet; in some instances like during interview 2 and 3, it was mentioned the importance of research centres for joint projects and innovation while in other cases (interview 4), all studies carried out by the University and the research centres were not applicable. This highlighted the fact that some of the industrial divisions in the group were getting a lot from those knowledge-based centres while others did not know how they could take advantage of them or how to do so; knowledge generation might be considered too narrow and focused.

ICT Systems

The information systems were designed to communicate and integrate cluster members together by connecting internal processes, systems and people (Galbraith & Kazanjian, 1986) and also by linking them to the external environment; as Ciborra (1997) stated, this was critical if the cluster was going to have the required speed and flexibility to make decisions and take advantage of existing business opportunities while satisfying customer demands, responding to possible changes and maintaining costs at a competitive level (Huang et al, 2000). The model showed that the information systems could be better used if a greater distribution and availability of data was encouraged; according to Brown and Ross (1996), this would;

- Enable data sharing across function and divisions supporting cross-functional decision making and allowing organisations acting more globally.
- Facilitate the standardisation of platforms and common application which accelerated the development of business applications.

The system, as Hendriks (2001) suggested, was designed so it facilitated the absorption of information, its storage, management and posterior distribution. Nevertheless, Colman & Han (2005) stressed that dynamic systems had to be easy to use, reorganise-able and reconfigure-able in response to changes in the environment or modifications of its own goals, resources or capabilities. To obtain re-composition, the infrastructure of the system had to be flexible. In the same way, flexibility implied accessing the

information from non-office based locations, with no time constraints and being accessible by anybody that required that data in the appropriate format (Newell et al 2002). This was an aspect requiring further consideration.

Transformation Processes

Quality was the main objective of the manufacturing practices, followed by prompt delivery and cost minimisation. In order to achieve so, process efficiency and speed were the main concerns for nearly all companies (twenty one out of twenty four) closely followed by innovation and process reconfigurability. These production drivers supported the key considerations mentioned by Dove (1993), Burgess (1994), Spearmann and Hopp (1996), van Assen (2000) and Hormozi (2001). This last scholar listed the objectives of dynamic organisations; he stated that this type of organisation sought the elimination of any waste while offering great variety. In order to do so high levels of communication integration and cooperation were necessary within and between companies; in the case of the cluster, waste elimination was not a priority and consequently the associated capabilities were not exploited to their potential. Only eight companies believed that their products were subjected to short product life cycles, which indicated that around a third of the companies in the group were focused on traditional industrial sectors. Most of the companies acknowledged flexibility of resources and capabilities as very important for their performance and competitiveness, which denoted a good variety in product offering, engagement on build-to-order projects and provision of consultancy service. Process integration was noted a problem that needed being tackled by nearly half of the companies.

Agile manufacturing processes were considered to be based on lean approaches (Goldman & Nagel 1993, Kidd 1995, Parkinson 1999, Hormozi 2001, Gunasekaran & Ngai 2004); according to the developed framework, the emphasis of the cluster centred on cost and delivery effectiveness while producing high quality products and satisfying customers specific needs (Meredith & Francis, 2000) which fitted with lean philosophy. Nevertheless, the companies did not fully implement the required processes to make this philosophy work properly and as result the outcomes were not as effective as they could be. The cluster made good use of smart automation and advanced technology without being excessive; nevertheless, the limited flexibility of their human associates was an aspect to be highlighted (Parkinson, 1999).

Marketing

Webster (1992) acknowledged the evolution within the role of marketing activities and how dynamic organisations exploited this activity by aligning the internal and external processes. The member of the central body during interview 1 confirmed this view by explaining how branding and market research had become important assets to the organisation. Nevertheless, the model suggested that companies did not appreciate the cluster identity or take advantage of potential market networks. Marketing was used in a more traditional way to scan the environment, promote services and to connect with customers (Venkatesh et al 2000, Maklan & Knox 2009). The intensity of the promotional activities varied depending on the company, but the endorsed message did not differ much from one case to another: value for money and their ability to solve problems were the advertised message in most cases. The marketing dimension illustrated that the group did not promote its full potential by acknowledging what they could offer as a group (total service, variety of alternatives and products, future products and projects…). Affiliated marketing was a widely used practice; eighteen out of the twenty four companies admitted sharing marketing activities with their suppliers or customers.

Benchmarking

Benchmarking was a business dimension to be considered for those companies aiming at being competitive in dynamic environments (Zairi, 1994). Taking into consideration that growth was one of the main driver of companies within the cluster, continuous analysis of the internal operations and external environment was a frequent practice within the group; more than half of the companies utilised this data to satisfy clients' requirements, access new projects or resource planning. The challenge for them was to fully exploit the information gathered about their direct competition as only six out of fifteen had managed to ever implement any industry best practice. This indicated that benchmarking practices were effective but not a source of competitive advantage (Zairi, 1994); Fernandez et al (2001) believed that to take a full advantage of these practices, companies had to consider altering internal practices. Personalisation of best practices or general guidelines was another practice not considered as Meredith and Francis (2000) suggested; yet, this could be due to the particularities of the cluster that made it a unique case and therefore non-comparable to any other cluster.

Alliances

The responses obtained in the survey indicated that some companies within the cluster sought internal growth by exploiting the partnership, which confirmed Druckers' (1996) opinion on strategic alliances, but this was not the only reason and as Todeka and Knoke pointed out realisation of market potential, reputation and brand recognition were other answers provided in the questionnaire. Granovetter (1985), Larson (1992) and Uzzi (1996) believed that for these alliances to work effectively it was necessary to develop embeddedness at higher and lower organisational levels; the dimension associated with alliances was rather confusing with numerous capabilities coloured in pink, orange and blue. The segment showed a clear focus on the operational capabilities, but the strategic capabilities had not been adopted as well developed as the operational ones; when asked about the dynamic capabilities of the group during the interviews, the answers explained that the central team identified those areas that needed a push and then they selected and positioned key people and resources in those specific areas. In other instances, commercially successful departments were set as a reference and pull forward other areas aiming at increasing the overall speed of the system which explained why the results showed a misalignment between the higher and lower levels. In addition the central body was accused of forgetting the importance of member independence and not including them in the decision making process. The other aspects influencing this misalignment were diversity and difference in speed (interview 4). This misalignment could risk the survival of the company without the adequate enablers (Elmuti & Katwala, 2001) and support from the central body. Other means available to the cluster to enhance its dynamism were resource flexibility, innovation and diversification. These options entailed other challenges such as coordination and control of the different approaches while transmitting a shared identity that could be communicated successfully into the market place.

Suppliers

The cluster understood that efficient collaborations were based on mutual trust, openness, shared risk and rewards (Hogarth-Scott 1999, Golici and Mentzer 2006); nevertheless, it struggled to transform these collaborations into dynamic networks able to identify changes and rapidly respond to them (Sharp et al 1999, Christopher 2000, Giachetti et al 2003, van Hoek 2005). The supply chain dimension of the model showed an opposite approach to the alliances' dimension where the group had a clear understanding of

what they wanted to get from these relationships but they were not so effective at getting the most out of its operations (speed, flexibility, coordination, integration, etc) which were highlighted by Christopher (2000) as key determinants of dynamic networks. Among the weaknesses of this dimension were its capacity to be tailored to specific customers and incorporate or exclude links as necessary as well as its horizontal integration and standardisation of procedures and capacity to plug in and out members; all of them were capabilities pointed out by Jan et al (1999), Ismail and Sharafi (2005).

Most supply chains were well established long-term relations with European or global suppliers which were frequently reviewed; nevertheless, the majority of the companies described the process as costly and complicated. This was due to the limited flow of information and use of virtual systems in opposition to what scholars such as Christopher (2000), Mahontra et al (2005) and Lin et al (2006) suggested; only ten out of the twenty four companies used the ICT systems to facilitate these relationships, while the rest only used them internally. Taking into consideration that supply chain relationships were a necessity (interview 3), companies needed to consider developing more effective networks so they could maximise them. The supply chain dimension showed good considerations regarding the higher level requirements where companies within the cluster were having difficulties to implement them. In contrast, the alliance dimension worked well at operational level but strategic alignment was an issue. It seemed that companies achieved from the supply chain dimension what they could not obtain from the alliances and vice versa, both dimensions complemented each other.

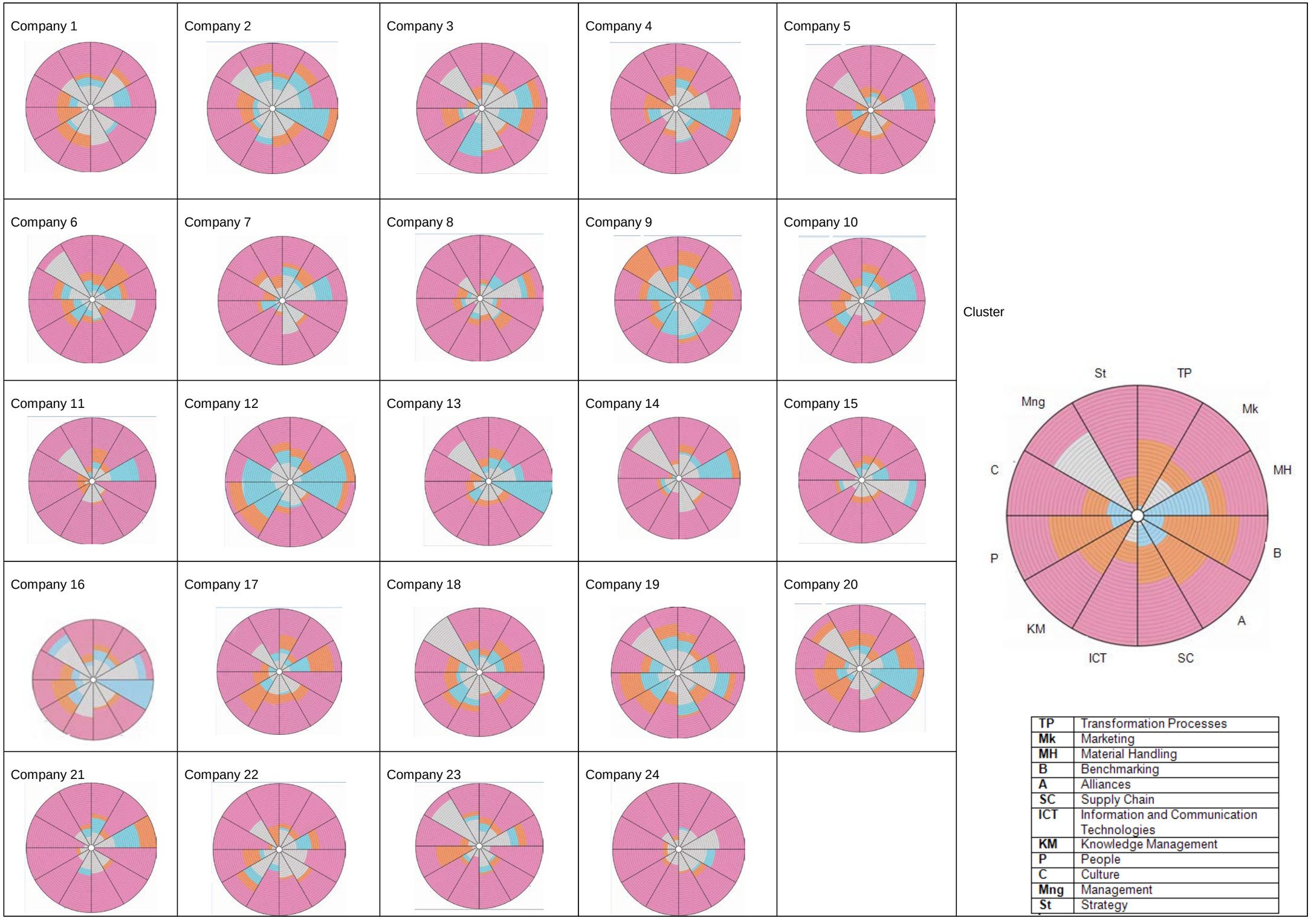
### 12.2.2 Dynamics of the cluster in comparison to the individual members' dynamics

This section answered the hypothesis by using the visual models to compare the dynamism of the individual members against the cluster dynamic capabilities (see Figure 53). The table below indicated which of the entities, the company (Com) or the cluster (CL), demonstrated greater dynamism for each of the dimensions according to the developed visual model. The evaluation was carried out considering the number of pink and orange capabilities displayed in the visual model for each dimension; note that there were cases where the combined number of capabilities coloured in pink and orange for the cluster was greater than those showed by the company, nevertheless in those case where the majority of these capabilities if not all, were highly dynamic capabilities and the number of capabilities considered was similar, the dynamism level of the company for that dimension was considered higher.

Table 24: comparison table between individual members and the cluster following the developed visual model

| Company | TP | Mk | B | L | All | SC | ICT | KM | P | C | Mng | St |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CL | CL | CL | C1 | C1 | CL | CL | CL | C1 | CL | C1 | CL |
| 2 | CL | CL | CL | CL | CL | CL | CL | CL | CL | CL | C2 | CL |
| 3 | CL | CL | CL | CL | C3 | CL | CL | C3 | CL | C3 | C3 | C3 |
| 4 | CL | C4 | C4 | CL | C4 | CL | CL | C4 | C4 | C4 | C4 | C4 |
| 5 | C5 | C5 | CL | C5 | C5 | CL | CL | C5 | CL | C5 | C5 | CL |
| 6 | CL | C6 | C6 | CL | C6 | C6 | CL | C6 | C6 | CL | CL | CL |
| 7 | CL | C7 | CL | C7 | CL | CL | C7 | C7 | C7 | C7 | C7 | CL |
| 8 | C8 | CL | CL | CL | CL | C8 | CL | C8 | C8 | C8 | C8 | C8 |
| 9 | CL | C9 | C9 | CL | CL | CL | CL | CL | CL | CL | CL | CL |
| 10 | CL | C10 | CL | C10 | C10 | C10 | C10 | CL | C10 | C10 | CL | CL |
| 11 | CL | C11 | CL | C11 | C11 | C11 | CL | C11 | C11 | C11 | C11 | C11 |
| 12 | CL | C12 | CL | CL | C12 | CL | CL | CL | CL | CL | CL | C12 |
| 13 | CL | CL | CL | CL | C13 | C13 | C13 | CL | C13 | C13 | C13 | CL |
| 14 | CL | C14 | CL | C14 | CL | CL | C14 | CL | C14 | C14 | CL | CL |
| 15 | C15 | C15 | C15 | CL | C15 | C15 | C15 | C15 | CL | C15 | C15 | CL |
| 16 | CL | CL | CL | CL | CL | CL | CL | CL | CL | CL | CL | CL |
| 17 | CL | C17 | CL | C17 | CL | CL | CL | CL | C17 | C17 | C17 | CL |
| 18 | C18 | C18 | C18 | C18 | CL | C18 | CL | CL | CL | CL | CL | CL |
| 19 | CL | C19 | C19 | CL | CL | CL | CL | CL | CL | CL | CL | CL |
| 20 | CL | C20 | C20 | CL | CL | CL | CL | CL | CL | CL | CL | CL |
| 21 | CL | C21 | CL | C21 | C21 | C21 | CL | C21 | C21 | C21 | C21 | CL |
| 22 | C22 | C22 | C22 | C22 | CL | CL | CL | CL | CL | C22 | C22 | C22 |
| 23 | CL | C23 | CL | C23 | C23 | CL | C23 | CL | C23 | C23 | CL | CL |
| 24 | C24 | C24 | C24 | CL | CL | C24 | C24 | CL | C24 | C24 | C24 | C24 |
| **Overall** | **CL** | **Com** | **CL** | **CL** | **CL=C** | **CL** | **CL** | **CL** | **CL=C** | **Com** | **Com** | **CL** |

| | |
|---|---|
| **TP** | Transformation Processes |
| **Mk** | Marketing |
| **MH** | Material Handling |
| **B** | Benchmarking |
| **A** | Alliances |
| **SC** | Supply Chain |
| **ICT** | Information and Communication Technologies |
| **KM** | Knowledge Management |
| **P** | People |
| **C** | Culture |
| **Mng** | Management |
| **St** | Strategy |




| | |
|---|---|
| **TP** | Transformation Processes |
| **Mk** | Marketing |
| **MH** | Material Handling |
| **B** | Benchmarking |
| **A** | Alliances |
| **SC** | Supply Chain |
| **ICT** | Information and Communication Technologies |
| **KM** | Knowledge Management |
| **P** | People |
| **C** | Culture |
| **Mng** | Management |
| **St** | Strategy |

Figure 53: Comparison of the individual members and the cluster's visual model

Table 24 summarised the outcomes obtained via the visual model for each of the organisation and compare each of these dimensions against the results displayed by the cluster. Then the results were compared identifying which of them, the company or the cluster, was more dynamic for each of these dimensions. Table 24 clearly indicated that the cluster was clearly more dynamic than the member companies in 7 out of the 12 dimensions, 2 dimensions showed equal dynamism for both organisms, while member companies were more dynamic in three of the considered dimensions. Taking into consideration these results it could be concluded that the cluster was a more dynamic organism than the member companies within it.

## 12.3 Importance of the Research

The research confirmed the complementarities of the cluster still applied in the current economic environment and consequently Governments should be supporting these initiatives to encourage economic growth. In addition, the model could be useful for clusters to get an insight on the cluster dynamism as well as its individual members; this would be useful to identify weaker dimensions and the capabilities of the members and assess how the cluster might help overcome those weaknesses and add value to their members with individualised support. This could be a way to show the commitment of the cluster and avoid the exit of successful companies.

## 12.4 Limitations and Weaknesses of the Research

Taking into consideration the critical literature review and research methodology the following weakenesses and limitation were ackowledged in this research;

1 Porter (2000a) warned that the mere collocation of companies, suppliers and institutions, did not imply the realisation of the full potential of economic value generation as social bond attached the cluster together and initiated the value creation process; competitive advantage of the firms within the cluster greatly depended on the free flow of information, value-adding exchanges or transactions, the motivation to coordinate agendas and work across various organisations. Following this view, social relationships were not included in the model and required to be further analysed.

2 Another aspect that had not been addressed in the research was the influence of the public sector and local governments (McDonald & Vertova, 2001) in the survival and success of clusters, therefore another aspect to be consider in the future.

3 Taking into consideration the list of cluster elements provided by Andersson et al (2004), specialisation was a distinctive characteristic of clusters. Nevertheless, the Mondragon cluster encompassed different industries, sectors and activities (distribution, financial sector, training, …) that were not considered in this study and consequenlty this research provided a partial view of the cluster.

4 The model showed the level of dynamism in a specific period of time; performing the same analysis should provide a detailed view of how the cluster changed and adapted according to the environment (longitudinal analysis)

5 Maskell and Lorenze (2006) and Teräs (2008) defended that not all regions had the same characteristics, neither did clusters - therefore it would be necessary to carry out the same research in a different cluster to compare results.

6 The model was complex and with a great number of capabilities to be assessed which made the process dense and time consuming.

7 With regards to the research methodology; it would be advisable to refine the questionnaire to extract more detailed information as the limited number of questions suggested by the advisor made it rather complicated to cover all capabilities included in the model.

8 Despite managing to gather representative opinions from all involved parties, it would be advisable to carry out a greater number of interviews.

## 12.5 Conclusion

This chapter discussed the research findings in relation to previously published work, it also discussed any limitations and weaknesses of the research as well as it explained how these research findings could influence the knowledge in this field. This chapter also answered the hypothesis proposed at the beginning of the research; "*the cluster formed in the Basque Region of Spain by the geographical concentration of diverse manufacturers within the MCC Group shows a greater level of dynamism than those of the individual members*".

This research indicated that the cluster as a whole was a more dynamic system than the companies within it . Nevertheless, there were specific dimensions where companies were clearly more developed than the cluster . The research also suggested that despite the clear differences in the dynamism level

among cluster members, all companies benefit in some way from being part of the cluster. These benefits were different in nature depending on each specific company. In addition, the model was useful for clusters as a means to have an insight into the cluster dynamism as well as its individual members; this could be useful to identify weaker dimensions and capabilities of the members and to assess how the cluster might help overcome those weaknesses and add value to their members with individualised support. This could be a way to show the commitment of the cluster and avoid the exit of successful companies. The chapter also covered the weakenesses and limitations of the research; eight different concerns were identified as additional considerations for future studies.

# *Chapter 13: Conclusion & Further Work*

The study was set out to explore the dynamics of clusters in the Basque region of Spain; the significant contribution of this cluster to the economic development of the region and the increasing pressure of rapidly changing environments recommended the analysis and measurement of real dynamism of the cluster in comparison to the companies within it. In order to achieve this, the following objectives were proposed;

1. Understand the different organisational structures with special interest in collaborative structures and clusters.
2. Understand what dynamism really means within the field of organisational behaviour.
3. Develop a model capable of;
    a. Providing a complete view of the dynamism of the cluster as a whole.
    b. Providing a complete view of the dynamism of each of the member.
    c. Comparing the results and acknowledging the commonalities and disparities among the obtained results.
4. Validation of results.

Chapter three to seven represented the critical literature review covering previous work on clusters, organisational dynamics and the analysis of the higher and lower organisational levels within dynamic organisations. This data was used to develop a model that allowed measuring the dynamism of individual organisations as well as the cluster (Chapter eight). Chapter nine to eleven collected and interpreted the primary data that was used to validate the purpose of the model and the data collected through it.

Internal validity refered to the legitimacy of the research design and it made sure that the framework and obtained results measured what was originally set up to do: the dynamism of companies, dimesions and capabilities. While external validity sought the genralisation of outcomes: this was done by interviewing companies of all sizes and a representative of the group so all different types of members were included.

Chapter 12 provided a discussion of the obtained results against the existing literature review as well as a comparison between the results for individual models and the cluster's model. This comparison helped answer the initial hypothesis: "*the cluster formed in the Basque Region of Spain by the geographical concentration of diverse manufacturers within the MCC Group shows a greater level of dynamism than those of the individual members*".

The comparison of the individual outcomes against the cluster illustrated that the cluster was clearly more dynamic than the member companies in 7 out of the 12 dimensions, 2 dimensions showed equal dynamism for both organisms, while member companies were more dynamic in three of the considered dimensions. The findings of the research concluded that the cluster as a whole was more dynamic than the individual members; nevertheless, the model suggested that there were considerable differences in speed among the cluster members. These differences on speed were determined by the size of the company and their performance in dimensions such as marketing, culture and management.

The model also suggested that culture and internal relationships among cluster members were not as clear and well developed as were initially thought; the group needed to discuss and decide on the group values and to develop a shared view of values and identity; this should help enhance trust and embeddedness within their members, attract and retain highly skilled employees as well as increase the effectiveness of branding and take advantage of market networks.

Marketing was another dimension in which companies were more dynamic than the cluster, this might be due to the fact that they were dealing with great diversity but it also suggested that they were more inward focused and not as market centred as initially thought. Getting direct information from the organisation without needing to duplicate all research and without the adoption of a coordinator or project management role by the central team when new business opportunities arise helped them increase the number of joint projects and acquired business opportunities.

In the research it was also suggested that the cluster did not acknowledge the differences in speed, size or organisational culture when addressing their members; the model helped understand these differences and acted as a starting point to discuss how the cluster could contribute and add value to its members by supporting those weaker dimension or working with other members to better exploit specific capabilities.

The research confirmed the complementarities of the cluster still applied in the current economic environment and consequently Governments should be supporting these initiatives to encourage economic growth. In addition, the model could be useful for clusters to get an insight on the cluster dynamism as well as its individual members; this would be useful to identify weaker dimensions and the capabilities of the members and assess how the cluster might help overcome those weaknesses and add value to their members with individualised support. This could be a way to show the commitment of the cluster and avoid the exit of successful companies.

Despite much being discussed about the organisational and cluster dynamics within this research study, there were other aspects critical to clusters that had not been considered in this study; social relationships and the interaction with the public sector. These two aspects were suspected to act as parallel layers that interacted with the organisational layer influencing the dynamics of the organisation and consequently the cluster; in order to prove this interaction, future research should analyse the importance of social relationships and interactions within the business environment and determine whether and how these relationships could enhance or influence the dynamics of the organisation. In the same way, there was room for further research on how clusters interacted with the local and regional Governments and established if and how these relationships affected the performance of the cluster. The combination of the three layers at a specific moment in time could provide an accurate and complete view of the actual on going dynamics in the cluster at that specific moment in time.

The three layer analysis despite providing a complete view of the cluster, represented a static view of the considered entity; a snapshot of the dynamism of the organisation or cluster at specific moment in time. Therefore a longitudinal analysis would be advisable to get a lively picture of how the cluster changes and adapts along the years. This analysis could help identify what capabilities changed and even the impact and interaction over the different capabilities.

Another of the limitations of this research was that it focused on a specific division of the Mondragon cluster, industry, and consequently did not provide an accurate representation of the group. In the future, the other three divisions (finance, distribution and knowledge) should be included; including the full

spectrum of activities within the cluster should help achieve a better representation of the reality of the complementarities and synergies.

Following the same approach, it would be beneficial to involve as many companies as possible as the obtained data will provide a more complete view of the cluster; it could be especially beneficial to group interviews according to company size and check whether there was a connection between size, organisational culture and dynamics that the cluster should take into consideration during restructuring, when developing strategies, identifying and allocating new business opportunities for the group members, exploiting branding, as well as understanding the specific challenges they are facing and how they can add value to them.

As it was explained before, these findings are limited to a specific cluster in the Basque Country. It would be beneficial to analyse the behaviour of other clusters in the Basque Region to identify if there are communalities or best practices that characterise the region. In the same way, this research could distinguish those clusters which are adaptable and therefore have a greater possibility of being competitive in the long term, from those clusters that find it difficult to change and follow fluctuating markets, and consequently, it may be advisable to monitor them in case they require local support in the future. At a later stage, the research can be transferred into national and international level which should be beneficial to identify region or nation-based characteristics as well as in some instances even sources of competitive advantage.

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QUESTIONNAIRE –SPANISH VERSION

1. ***Indique la opción que mejor describa su organización:***

a. Dinámica y emprendedora
b. Controlada y estructurada
c. Énfasis en el crecimiento de ventas y beneficios
d. Determinada en conseguir la satisfacción de nuestros clientes

2. ***En su opinión, cual de los siguientes activos aporta una mayor ventaja para su organización?***

-trabajadores -recursos -tecnología -reputación -contactos -I+D

3. ***La empresa tiene definida su misión, visión y objetivos; en el proceso participaron desde la alta dirección hasta el personal de base. Todo trabajador puede revisarlos si lo desea***

- totalmente de acuerdo -de acuerdo -en desacuerdo -totalmente en desacuerdo

4. ***Por favor evalúe las siguientes afirmaciones*** *(totalmente de acuerdo,…., totalmente en* desacuerdo)

a. Las ideas y practicas innovadoras son bienvenidas en nuestro organización
b. La empresa reconoce y recompensa las personas que se esfuerzan por mejorar
c. La empresa brinda la oportunidad de aprender y crecer en el trabajo
d. Nuestra organización se caracteriza por la lealtad y confianza entre sus empleados
e. La dirección de nuestra organización se preocupa del bienestar de sus empleados
f. El desarrollo de la organización comienza con el desarrollo de las habilidades de nuestros empleados
g. La variedad en áreas de conocimiento y capacidades es fuente de ventaja competitiva

5. ***La organización contempla los cambios en el condiciones de mercado como una puerta abierta a nuevas oportunidades de negocio***

-totalmente de acuerdo -de acuerdo en cierto modo –en cierto modo en desacuerdo

6. ***Es fácil implementar cambios en nuestra organización***

-totalmente de acuerdo -de acuerdo en cierto modo –en cierto modo en desacuerdo

7. ***Existe un programa de formación continua dirigida a todo el personal independientemente de su posición en el organigrama de la organización?***

-si -no -depende de la posición

8. ***Con que frecuencia se realizan o atienden sus empleados cursos de formación?***

-semanalmente -quincenalmente -mensualmente -cada 3 meses -cuando es necesario

9. ***Señale cual de las siguientes cualidades describen de manera mas exacta o mejor el estilo de dirección de su organización***

a. Mentor, facilitador, promotor
b. Decidido a conseguir los resultados preestablecidos
c. Coordinador, organizador, énfasis un la eficacia operativa
d. Innovador, emprendedor, capaz de tomar riesgos
e. Énfasis en seguir las reglas y procedimientos

10. ***La organización recopila información del mercado de forma regular y la analiza para estimar el impacto de posibles eventos inesperados***…….Si/No

11. ***Alguna vez han implantado sistemas operativos previamente empleados por sus competidores?*** ……..Si/No/No podría decir

12. ***La organización realiza auditorias internas de forma habitual*** ……Si/No

13. ***Como se emplea la información (externa & interna) obtenida?*** *por favor marque todas las que correspondan*

a. Énfasis en la existente cartera de clientes y en sus futuras necesidades/ordenes
b. Acceso a nuevos mercados
c. Establecer alianzas estratégicas e involucrarse en nuevas actividades o líneas de negocio
d. Predecir el nivel de trabajo y los recursos necesarios para los próximos meses
e. Ninguno de los anteriores

14. ***Ha habido una reorganización en la estructura de su empresa en los últimos meses/ años****?* …… Si/No

15. ***Son frecuentes en su organización proyectos únicos y personalizados?*** …..Si/No

***16. Como clasificaría la flexibilidad de recursos y procesos en su organización?***
-1.intranscendente -2. 3. 4. 5.primordial

***17. Cual de las siguientes opciones refleja mejor el sistema productivo de su organización?***

a. Elevado volumen de producción y elevada variedad de productos
b. Elevada volumen y escasa variedad
c. Reducido volumen y elevada variedad
d. Reducido volumen y escasa variedad

***18. Identifique el principal énfasis de su organización durante la fabricación de los productos:***

a. mínimo coste
b. Alta calidad
c. Reducción de los plazos de entrega
d. Mínimos niveles de inventario
e. Respuesta en tiempo real ante cambios/eventos inesperados

***19. En caso de mejora en cualquiera de las siguientes actividades, valore el impacto sobre la productividad ****intranscendente……..primordial******

a. Mejora de la eficacia y la rapidez de los procesos
b. Automoción de los procesos
c. Flexibilidad y reconfiguracion de los procesos
d. incorporación de los clientes en los procesos
e. incorporar los proveedores en los procesos
f. reducción de los tiempos de preparación
g. construcción de prototipos
h. capacidad para innovar

*20.* ***Su organización esporádicamente actúa como "consultor"; las habilidades y conocimiento de nuestros empleados representan otra fuente de ingresos para la organización***
**-**totalmente de acuerdo -de acuerdo -en desacuerdo -totalmente en desacuerdo

*21.* ***El ciclo de vida de los productos en nuestra industria es corto, lo que tiene un fuerte impacto en nuestra organización***
-totalmente de acuerdo -de acuerdo -en desacuerdo -totalmente en desacuerdo

*22.* ***Como describiría la cooperación/integración de los distinto departamentos de su organización?***
-muy eficiente -eficiente -necesita mejorar -ineficiente

23. ***Tiene su organización procedimientos implantados para evaluar las principales actividades de la empresa y sus futuras necesidades?***.....Yes/No

24. ***Si tuviese que analizar su organización y los productos que esta fabrica, como la describiría*****?** *por favor marque todas las que correspondan*

-sensitiva a las variaciones en la demanda
-sensitiva a la situación macroeconómica del país
-sensitiva a las condiciones del sector
-ninguna de las anteriores

***25. Describa el grado de promoción/publicidad realizado por su organización en el ultimo año***
-intenso-moderado -limitado -mínimo -nulo

***26. Cual seria el mensaje central de su presentación si quisiera promocionar su organización:***

- precio
- Excelente calidad de nuestro productos
- Relación calidad-precio
- Cumplimiento de los plazos de entrega
- Capacidad para resolver problemas/realizar proyectos complejos
- Habilidad para innovar // I+D

27. **Evalúe el nivel de inventario de sus recursos (inputs**)
-elevado -moderado -reducido -inexistente

s**us productos (outputs)**
-elevado -moderado -reducido -inexistente

**28. En su opinión, los trabajadores de la organización:**

-están dispuestos a asumir responsabilidades (siempre, a menudo, de vez en cuando, nunca)
-son capaces de tomar decisiones y explotar nuevas oportunidades
-son capaces de decidir por si mismo como realizar sus tareas
-están dispuestos a rotar puestos y departamentos
-están dispuestos a reubicarse
-están dispuestos a trabajar de forma temporal
-están dispuestos a rotar equipos y cambiar compañeros de trabajo

29. **El trabajo en equipo es parte del funcionamiento normal de la organización** Yes/No

30. **En caso afirmativo, cuales serian las características de estos equipos? * por favor marque todas las que correspondan***

-Multidisciplinarios -Dinámicos -en función del proyecto
-Multifuncionales -Flexibles -ninguno de los anteriores
-Crosfuncionales -Temporales

**31. Cada equipo tiene una considerable independencia y libertad sobre como realizar las tareas, lo que se traduce en la reducción del necesario numero de mandos intermedios**
**-**totalmente de acuerdo -de acuerdo -en desacuerdo -totalmente en desacuerdo

**32. En esta organización las experiencias, tanto positivas como negativas, son utilizadas como fuente de aprendizaje**
**-**totalmente de acuerdo -de acuerdo -en desacuerdo -totalmente en desacuerdo

33. **Como valoraría :** (1.pobre,…..,5.excelente)

-el compromiso por parte de los trabajadores hacia la empresa
-la contribución del personal al crecimiento de la empresa
-la motivación del personal hacia el desarrollo de su conocimiento y habilidades
-la difusión de los conocimiento adquiridos entre el resto del personal

34. ***Posee su organización ALGUN procesos/ sistemas de información y de desarrollo que permitan:*** (tantos como aplicables)

-la recogida, almacenamiento y difusión periódica de la información externa
-el desarrollo y distribución del conocimiento entre nuestro empleados
-el acceso a determinada información por parte de los empleados, proveedores y clientes
-la identificación y análisis de la competencia y su comportamiento
-el uso de la información obtenida (interna+externa) en la planificación del futuro
-implementación de nuevos modelos organizativos

*35.* ***Los miembros de nuestra organización****:*

-compartimos los mismos valores (totalmente de acuerdo, de acuerdo, no podría decir…)
-compartimos la misma mentalidad
-no tenemos dudas de la identidad de la organización
-tenemos los mismos objetivos que la dirección de empresa

***36. La innovación de procesos y la formación de nuestro personal son fuentes de ventaja competitiva***
**-**totalmente de acuerdo -de acuerdo -en desacuerdo -totalmente en desacuerdo

***37. Pequeñas mejoras son tan importantes como considerable avances …***
**-**totalmente de acuerdo -de acuerdo -en desacuerdo -totalmente en desacuerdo

38. ***Identifique los motivos para constituir alianzas/colaboraciones con otras empresas*** **por favor marque todas las que correspondan**

- reducción en costes y la utilización de recursos y equipos no disponibles en nuestra organización
- acometer proyectos de mayor envergadura y alcance
- reducción del tiempo de introducción del producto en el mercado y de los avances tecnológicos
- aprovechar su conocimiento y experiencia para mejorar la calidad de nuestros productos
- mejorar la imagen de nuestra empresa
- reducción de los riesgos y estandarización de los procesos. Búsqueda de relaciones a largo plazo
- ofrecer un servicio completo a nuestros clientes

39. ***Señale las razones que otras empresas pueden tener para querer formar alianzas con nuestra organización*** *por favor marque todas las que correspondan*

- nosotros somos los mejores en lo que hacemos
- reducción en costes y la utilización de recursos y equipos no disponibles en sus facilidades
- acometer proyectos de mayor envergadura y alcance
- reducción del tiempo de introducción del producto en el mercado y de los avances tecnológicos
- aprovechar nuestro conocimiento y experiencia para mejorar la calidad de sus productos
- mejorar la imagen de su empresa
- reducción de los riesgos y estandarización de los procesos. Búsqueda de relaciones a largo plazo
- ofrecer un servicio completo a sus clientes

***40. Que tipo de actividades subcontrata a otras empresas?***

-ninguna, la totalidad de las actividades se realizan en nuestras facilidades
-actividades complicadas y de gran valor añadido
-actividades con poco valor añadido
-nosotros solo distribuimos los productos

***41. Donde se encuentran sus proveedores?***
-todos en Euskadi -España -Europa -En varios continentes

***42. Durante cuanto tiempo ha mantenido la misma base de proveedores/alianzas?***
- menos de 1 año -1/2 años -3/4 años -5 o mas años

***43. Con que frecuencia suele revisar sus proveedores y recurrir a nuevos?***
- cada año -1/2 años -3/4 años -5 o mas años

***44. La organización comparte actividades promociónales con sus proveedores/clientes/ /colaboradores***
-siempre -de forma habitual -esporádicamente -nunca

***45. Nuestros proveedores son capaces de ofrecer servicios adicionales que aumentan el valor de nuestros productos***
**-**totalmente de acuerdo -de acuerdo -en desacuerdo -totalmente en desacuerdo

***46. Nosotros tomamos en consideración nuestros proveedores/colaboradores clientes y su situación cuando definimos nuestra estrategia de futuro***
**-**totalmente de acuerdo -de acuerdo -en desacuerdo -totalmente en desacuerdo

***47. Sus base de proveedores/colaboraciones tiene la habilidad para incluir/excluir miembros rápidamente:***

**-**si, sin problema
-depende del caso
-normalmente no es fácil y tarda tiempo
-muy complicado
-no sabría decir

48. ***Es necesario incurrir en considerables costes para hacerlo?*** ….. Si/No

***49. Como describiría la interdependencia entre su organización y aquellas empresas con las que colabora?***
-intensa -moderada -limitada -nula -no sabría decir

***50. Que tres criterios mencionaría para describir una alianza duradera?***

-tener una identidad clara, tanto individual como colectiva
-tener objetivos comunes
-flexibilidad para adecuar las decisiones y acciones a la situación de mercado
-confianza en los otros
-mentalidad abierta para detectar nuevas oportunidades
-estandarización y coordinación de las actividades
-comunicación: frecuente y transparente
-relaciones directas, sin intermediarios
-sinergias en producción

51. ***Que indicadores emplea para evaluar los resultados de sus colaboraciones con otras empresas?*** por favor marque todas las que correspondan
    - mejoras en la calidad
    - nuevos contactos
    - mayor experiencia en el sector
    - acceso a nuevos mercados / proyectos
    - adquisición de tecnología o/y conocimiento en cierta área
    - aumento de la productividad
    - aumento en los beneficios
    - reducción en los plazos de entrega
    - mejora de la reputación
    - otros

***52. Que tipo de tecnología de la información utilizan?***
-Internet -Intranet -Extranet -Varios de los anteriores -ninguna de ellos

***53. Que función tienen estas herramientas?*** por favor marque todas las que correspondan

-ventas y seguimiento de la cartera de clientes
-compras y seguimiento del material
-seguimiento de los procesos de producción y posibles incidencias
-servicios informativos y de atención al cliente
-seguimiento de los indicadores financieros
-gestión de datos
-otros

**54. Cuales son las mayores ventajas de estas herramientas?** por favor marque todas las que correspondan

-facilitan y agilizan la comunicación
-su capacidad para integrar sistemas/procesos
-favorecen la coordinación/sincronización de actividades
-control sobre el progreso de las actividades
-ninguna de las anteriores

**55. Existe una plataforma de base de datos donde**

-cualquiera que necesite información puede acceder a ella …….SI/No
-done quiera que este
-en cualquier momento
-en el formato adecuado

QUESTIONNAIRE –ENGLISH VERSION

1. ***Please, select the option that would best describe the organisation:***

a. Dynamic and entrepreneurial
b. Hierarchical
c. Focused on sales and profit generation
d. Focused on customer satisfaction

2. ***In your opinion, what of the following options better describes the core element of your organisation?***

-Employees -Resources -Technology -Reputation -Contacts -R&D

3. ***Assess the following statement: "The company has clearly established its mission, vision and values; all staff layers were considered during the process and contributed to their development. All employees could revise them if they wish".***

- Strongly aggreed -agreed -disagreed -strongly disagreed

4. ***Please, assess the following statements*** *(strongly agreed,…., strongly disagreed*)

a. New and innovative ideas are welcome in our organisation
b. Our organisation recognises and rewards those individuals trying to develop themselves
c. Our company offers the opportunity to learn and grow at work
d. Our organisation is based on loyalty and trust
e. The management of the organisation looks after the employees
f. The development and improvement of the organisation starts with the development of our employees
g. Knowledge and Flexibility of resources can be a source of competitive advantage

5. ***Changes in the market place represent opportunities to engage in new business activities***

-Strongly agreed -agreed –neither agreed or disagreed -disagreed -strongly disagreed

6. ***It is easy to implement changes within the organisation***

- Strongly agreed -agreed –neither agreed or disagreed -disagreed -strongly disagreed

7. ***The organisation provides the possibility to engage on personal development activities to everybody in the organisation independently of their position***

-YES -NO -Depending on the position

8. ***How frequently do the employees attend personal development activities?***

-weekly -every fortnight -monthly -every 3 months -when necessary

9. ***Please, identify what of the following styles best describe the management approach within the organisation***

a. Mentor, facilitator, promoter
b. Determine to achieve previously define objectives
c. Coordinator, organisator, with focus on productivity and efficiency
d. Innovative, entrepreneurial, risk-taker
e. Focus on following rules and procedures

10. **The organisation regularly gathers and analyses information on the market as a means to predict and evaluate possible unexpected events** …….YES/NO

11. ***Has the organisation ever implemented industry best practices?*** ……..Yes/No/I don't know

12. ***The organisation carries out internal audits on a regular basis*** …….Yes/No

13. ***How does the organisation utilise the gathered information?, both from the internal and external analysis*** *please identify all responses that apply*

a. Satisfying the current and future needs of existing customers
b. Accessing new markets
c. Developing new strategic alliances so the company can engage on new business opportunities
d. Forecasting and planning the resources required for future activities
e. None of the previous one

14. ***Has the organisation gone through any structural change lately****?* …… Yes/No

15. ***Does the organisation engage on build-to-order or customised projects?*** …..Yes/No

***16. How would you classify the flexibility level the organisation's resources and processes?***

1. Unnecessary 2. 3. 4. 5. Essential

***17. Which of the following options do they reflect better the production system of the organisation?***

a. High volumen, High variety
b. High volumen, Low variety
c. Low volumen, High variety
d. Low volumen, Low variety

***18. Identify the main emphasis of the organisation during the transformation processes:***

a. Cost minimisation
b. High Quality
c. Short delivery times
d. Low inventory levels
e. Real time responses to unexpected events

***19. If you were able to improve any of the following aspects of the organisation, please evaluate the impact that it would have on the organisation ****none……..essential*******

a. Improvements on the efficiency and speed of processes
b. Automation of certain activities
c. Flexibility and reconfigurability of processes
d. Involvement of customers within the project
e. Involvement of suppliers within the project
f. Reduction of set up times
g. Developing prototypes
h. Ability to innovate

*20.* ***Please assess the following statement: " Our company has the ability to act as a consultant; the abilities and knowledge of our employees represent an additional source of income"***

**-**Strongly agreed -agreed -disagreed -strongly disagreed

*21.* ***Our products have a short Product Life Cycle which directly affects the behaviour of the organisation,***

-strongly agreed -agreed -disagreed -strongly disagreed

*22.* ***How would you describe the integration and coordination of the different functions of the organisation?***

-very efficient -efficient -needs improving -inefficient

23. ***Does your organisation has any procedure in place able to assess the flexibility of current functions and their future needs?****.....* Yes/No

24. ***If you needed to describe the organisation and the products manufactured in it, which one of the following statements would you use?*** *Please mark as many as they apply*

-Sensitive to changes in the demand
-Sensitive to changes in the macro environment
-Sensitive to changes in the micro environment
-None of them

***25. Please assess your promotional activities during the last year***

-intense -moderate -limited -minimum -none

***26. How would you promote your products? Based on:***

- Price
- Excellence of Quality
- Good value for money
- Fulfilment of delivery time
- Problem solving ability
- Ability to innovate (R&D)

27. **Assess the inventory level of your inputs**

-High -moderate -limited -non-existent

**Assess the inventory level of your outputs**

-High -moderate -limited -non-existent

**28. In your opinion, employees: (always, sometimes, never)**

-they are always willing to accept responsibilities
-they are capable of making decisions and take advantage of new opportunities
-they can self-manage and deliver predefined tasks
-they are willing to change teams and positions
-they are willing to move into other locations
-they are willing to work on a temporal basis

29. **Teamworking is a usual practice within the organisation** Yes/No

30. **If the previous answer was yes, could you describe the characteristics of these teams?** * please mark as many as apply*

-Cross-organisational -Dynamics -Depending on the project
-Multifunctional -Flexible -none of previous ones
-Cross-funcional -Temporal

**31. Please assess the statement; "Each team has been empowered to be able to make decisions and be self-managed, which has made possible to reduce the necessary number of middle-managers".**

**-**Strongly agreed -agreed -disagreed -strongly disagreed

**32. In our organisation, industrial experiences both positives and negatives are considered to be a source of knowledge**

**-**strongly agreed -agreed -disagreed -strongly disagreed

33. **How would you assess the following statements:** (1.poor,…..,5.excelent)

-The commitment of the employees towards the company
-The contribution of the employees towards the company's growth
-The motivation of the employees towards personal development and continuous improvement
-The sharing and distribution of knowledge with the rest of the employees

34. ***Does your organisation exploit any ICT system that allows them to:*** (please mark as many as apply)

-gather, store and distribute information with external sources
-create and distribution knowledge internally
-access to specific information by employees, suppliers and customers
-Identify and analyse competitors and their behaviour
-use the collected data, internally and externally, to plan for the future
-implementation of new business models

*35.* ***All members of the organisation****:* (strongly agreed, agreed, disagreed, strongly disagreed, I don't know…)

- share the same values
- share the same mentality
- don't have doubts about the company's identity
- have the same objectives as the management

36. ***Innovation and personal development are sources of competitive advantage***

**-**strongly agreed -agreed -disagreed -strongly disagreed

37. ***Small continuous improvements are as important as sky blue development***

-Strongly agreed -agreed -disagreed -strongly disagreed

38. ***Please, identify the principal motives of your organisation when seeking new partnerships with other organisations*** **please mark as many as apply **

- cost reduction and the usage of resources and teams that are not available in our organisation
- engage in projects that would not be approachable in isolation
- time reduction on the market launch of new products and acknowledgement of technological developments
- benefit from the knowledge and expertise of others to improve the quality of our products
- improve the image of our organisation
- risk reduction and standardisation of processes. Search for long-term partnerships
- offering a total service to our clients

39. ***Please, Indicate the reasons for other organisation to engage in business with your organisation*** *please mark as many as apply*

- we are the best at what we are doing
- cost reduction and the usage of resources and facilities not available to them
- engage on new business opportunities that they couldn't embrace in solation
- reduction of the time taken to launch new products into the market and keeping update with new technological developments
- take advantage of our knowledge and experience in the industry to improve the quality of their products
- improve the image of their organisation
- risk reduction and standardisation of processes. Search for long-term business relationships
- Offer a total service to their clients

***40. What kind of activities does your company outsource to third-parties?***

-none, all activities are carried out in our facilities
-complex and high value adding activities
-low value adding activities
-we don't produce, only distribute the product

***41. Where are your suppliers based?***

-all in the Basque Country -All in Spain -in the European Union -Globally

***42. When was the last time that a change was implemented in your supply chain?***

- less tan a year ago -1 to 2 years ago -3 to 4 years ago -5 or more years ago

***43. How often is your supply chain revised and new members considered?***

- annually -1 to 2 years -3 to 4 years -5 plus

***44. The organisation shares marketing activities with its partners/suppliers/customers***

-always -sometimes -never

***45. Our suppliers are capable of offering additional services that enhance the value of the products we offer***

**-**strongly agreed -agreed -disagreed -strongly disagreed

***46. We are taking into consideration our suppliers and customer when developing our strategies for the future***

**-**strongly agreed -agreed -disagreed -strongly disagreed

***47. Your supply chain can include new members or withdraw them easily and rapidly***

**-**yes, this is not a problem
-it depends on the specific case
-it is not easy and it normally takes time
-it is complicated
-I don't know

48. ***Is it costly to implement these changes?*** ….. Yes/No

49. ***How would you describe the relationship with your partners?***

-intense -moderate -limited -non-existent -I don't know

***50. What three criteria would you mention as the basis for a stable and long lasting partnership?***

-having a clear identity, both individual and as a group
-having common objectives
-flexibility to adjust to changes in the market
-trust
-having an open mentality to identify new business opportunities
-standardisation and coordination of activities
-frequent and open communication
-direct relationships without intermediaries
-synergies

51. ***What measures does your company employ to assess these relationships?*** (please mark as many as apply)

- Quality improvements
- Access to new customers
- Access to expertise in the sector
- Access to new business opportunities or new market segments
- Access to advanced technology and knowledge
- Productivity improvements
- Increase of benefits
- Reduction in the delivery times
- Reputation improvements
- Other

***52. What kind of ICT system do you employ?***

-Internet -Intranet -Extranet -More tan one -None of them

***53. What is the use of this ICT system?*** (please apply as many as possible)

-sales and management of customer accounts
-procurement of materials and resources
-following WIP and other possible problems during the process
-informing the customer and help with customer service
-Following the financial data
-Management of internal data
-Others

**54. What are the advantages of using this tool?** (please mark as many as apply)

-they facilitate and speed activities
-integration of processes and systems
-coordination/synchronisation of activities
-monitoring the progress of on-going activities
-none of previous

**55. The ICT systems allows (YES/NO)**

-to access the information to anybody who needs it
-wherever they may be
-Whenever
-with the right format

The remainder of the appendices have not been included in the electronic version due to data protection and commercial sensitivity of information. The unabridged version of the thesis can be viewed at the Lanchester Library, Coventry University.