Synergy created by coordinating sourcing in related diversified firms

A study of the Norwegian utility industry

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Summary

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Background: The importance of sourcing activities is high in many companies and awareness of its impact on competitiveness has been increasing. Sourcing affects both the cost structure and the features of the final product. One way of increasing the performance of sourcing is to join forces and work together in order to create synergy. Synergy is the increased value by working together rather than apart. Many companies have started corporate and multinational initiatives in order to coordinate sourcing across its related diversified business units. One way of doing this is for several business units to share a common sourcing department or coordinate the sourcing processes, accumulating the sourcing volume in order to gain economies of scale. However, in order to create such synergies, some coordination mechanisms must be in place. In this thesis, the coordination by organizational structure, management control system and by process, systems and tools are investigated. The synergies that can be created are identified to have three different forms, economies of scale, economies of information and learning, and economies of process.

Research questions: The first research question is formulated as: “How is sourcing coordinated across business units in related diversified firms in the Norwegian utility industry?” And the second research question is formulated as: “What kind of synergies is created of this coordination?”
**Purpose:** The purpose of the thesis is to describe how sourcing is coordinated across business units in related diversified firms in the Norwegian utility industry, and explain what kind of synergies that is created of this coordination.

**Method:** The research was conducted as a multiple case study performing a cross-case comparison. The relationship between theory and research is deductive. The data was collected by interviews of five informants in the companies Telenor, Avinor and Statkraft in the Norwegian utility industry.

**Results, conclusions:** Sourcing is found to be coordinated across business units by centrally decided sourcing strategies defining overall goals and policy for the sourcing area. Sourcing is also coordinated by sourcing professionals and category managers operating as devised liaisons, coordinating the sourcing processes, supplier and market management horizontally across the business units. The coordination comprises pooling the sourcing needs of the business units when appropriate. The coordination is done by mutual adjustment as no decision-making power is given to the sourcing professionals. In order to coordinate the sourcing processes, coordination by joint planning and horizontally calculated cost information across business units are facilitated. Coordination also takes place by shared resources, centrally located in the sourcing department.

Synergy is created in all of the three forms identified from theory. The highest value is perceived to be the economies of information and learning that creates value by sharing of knowledge, competencies, information and skills across the business units.
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1. INTRODUCTION

The introduction presents the background from which the problem discussion is developed, recognizing the importance of synergies for related diversified firms. The problem discussion is first addressing some general aspects of coordinating business units and divisions. Then the discussion is moved to involve the different mechanisms that can be used in order to coordinate. The chapter ends with the formulation of the research question and the purpose of the thesis.

1.1 Background

Related diversified firm operates in several industries, and the business units are related to each other trough operating synergies (Anthony & Govindarajan, 2007; Simons, 2000). According to these authors, such operating synergies are created from a common set of core competencies and resources used in order to perform the operations more efficiently together than apart. Operating synergies are hereafter referred to as synergy. Sharing of resources and competencies provide the possibility to exploit the benefits of economies of scale and scope in related firms (Anthony & Govindarajan, 2007).

Collins & Montgomery (1999) describe that synergy could be created by defining the shared resources as part of the competitive advantage of the multibusiness activities. The competitive advantage is made out of the company resources that are critical for the success of its business units. According to the authors, in this situation the synergy is created when the organization is configured to leverage those resources into the business. This is supported by Anthony & Govindarajan (2007) which claims that a related diversified firm normally grows by leveraging core competencies developed in one business when diversifying into other businesses. However, internal growth typically takes place trough research and development.

Thus, synergies are created through exploitation and leveraging the core competencies and resources that makes the business units related to each other. When the relatedness is based on the products that are made and sold, such exploitation means to take benefit of the economies of scale and scope. The other possibility is to leverage the company resources that are critical for the success as stated by Collis & Montgomery (1999) above.
Such resources could be the sharing of a common sales system or use of the same distribution channel (Collins & Montgomery, 1999). The use of competencies and resources across related business units is also called a horizontal business strategy (Porter, 1998).

Many authors have pointed out that sourcing is an area where synergies and competitive advantage could be created among multiple business units (Axelsson et al, 2005; Handfield et al, 2009; Van Weele, 2010; Anthony & Govindarajan, 2007). Sourcing is the activities that are performed in order to acquire the goods and services that the company need for its business activities (Axelsson et al, 2005). However, the term and definitions of the concept has developed through the years, from the operational and transaction based view of “buying” to the more comprehensive terms of sourcing and supply management (Axelsson et al, 2005; Handfield et al, 2009; Van Weele, 2010). The concept of sourcing is also recently evolved in a more strategic direction, including make-or-buy decisions, supplier base development, supplier relationship management (SRM) and global sourcing (Axelsson et al, 2005).

For the purpose of this thesis, the following definition is used: “Sourcing is a cross-functional process, aimed at managing, developing and integrating with supplier capabilities to achieve a competitive advantage” (Axelsson et al, 2005, p. 7). This definition reflects that sourcing activities range from the strategically perspective affecting the long-term performance of the company, and down to the operational perspective of the practical arrangements when integrating with the suppliers in the supply chain.

The importance of the sourcing function is in many cases high and awareness of its impact on the competitive strength has been increasing in the later years (Van Weele, 2010; Cousins et al, 2008). Sourcing has impact both on the cost structure and the features that make their way into the final product (Handfield et al, 2009). Sourcing is contributing to competitive advantage by reduction of input cost and capital employed, reduction of quality cost, increased product standardization, supporting product design and innovation, increasing flexibility and fostering purchasing synergy (Axelsson et al, 2005).
According to the authors Goold & Campbell (1998), the word “synergy” is derived from the Greek language and means “working together”. When the term is used in business, it usually refers to the ability of two or more business units to create higher value when working together than when working apart and separately.

Corporate sourcing means that multidivisional organizations are joining forces and working together in sourcing (Axelsson et al, 2005). One way of doing this is for several business units to share a common sourcing department or coordinate the sourcing processes, exploring the benefits of economies of scale and scope when pooling sourcing needs together across business units (Anthony & Govindarajan, 2007). In cases when sourcing excellence and best practice are defined to be a critical resource representing a competitive advantage of the firm, the synergy is created by leveraging this resource represented by the skills, methods and working procedures of sourcing, amongst the business units (Hill et al, 1992). A third possible synergy is the synergy derived from increased internal efficiency of sharing common way of working, methods, policies and information technology systems (Van Weele, 2010; Axelsson et al, 2005).

Even when no corporate interdependence or corporate responsibility exists, coordination and pursuit for synergy can be found through buying consortia (Englyst et al, 2008). This indicates that synergy from coordination of sourcing can be substantial.

Thus, synergy in general and of sourcing in particular takes several forms and can be categorized in different manners. One way of categorizing synergy of sourcing is made by Faes et al (2000) and is used in the further. The synergies of sourcing are according to these authors in the form of economies of scale, economies of information and learning, and economies of process. This is described in more detail in the theory chapter.

1.2 Problem discussion

The creation of synergy across related business units in a corporate firm requires some degree of resource sharing or transfer of skills between the separate businesses as introduced in the background above. In order to achieve this, some cooperation between the business units are necessary (Hill et al, 1992). This is supported by Porter (1998) who claims that it is necessary to coordinate activities amongst business units in order to transfer skills and share resources. In a study, one of the conclusions was that firms
pursuing related diversification to realize economies of scale and scope need to adapt cooperative organizational arrangements. If not, a diversification strategy may reduce, or at least not improve, firm performance (Hill et al, 1992).

According to Rozemeijer (2000), firms increasingly recognize the need for coordination of their sourcing efforts. In the author’s opinion, this is driven by the competitive pressures and the importance of sourcing. The synergy, which is the higher value of working together than apart, is an important contributor to the competitiveness of the firm in situations where sourcing is of high strategic importance.

1.2.1 Aspects of cooperation and coordination

Cooperation and coordination requires people to work together in otherwise independent business units. A cooperative behavior is necessary, both from the participants in the cross-company initiatives taken to coordinate sourcing, and especially from the business unit managers, in order to succeed (Englyst et al, 2008; Van Weele, 2010). Also working towards common goals and establishing goal congruence across business unit’s team members is important (Englyst et al, 2008). A third and important behavioural factor is the cultural differences and distance for a good cooperative environment when having multiple business units worldwide (Hartmann et al, 2008). When coordinating sourcing in such firms, the sourcing strategy is usually referred to as a global sourcing strategy (Handfield et al, 2009; Van Weele, 2010).

Coordination of sourcing across multiple business units require to use time and effort in order to build a workable system (Faes et al, 2000). In these authors opinion, the time and effort spent will be related to the degree of decentralization and local autonomy in the business units. The higher decentralization and local autonomy, the higher time and effort will be spent. In addition, the results from the coordination initiatives will not appear at once. The reason for this is that cooperation can be regarded as ineffective by the business units, and the advantages of coordination must be proven repeatedly to them (Faes et al, 2000). There is however a need to take a balanced approach that considers both the need for problem solving capabilities close to where the problem occur, keeping cost in each business unit and maintain a close relationship with the suppliers (Gadde & Håkansson, 1994).
In addition, such cooperation and coordination involves cost, both represented by time and effort spent on the initiatives aimed at increased cooperation and coordination. Thus, it is important to deduct the cost when calculating the value of these initiatives (Goold & Campbell, 1998). The net value will represent the synergy of such initiatives.

1.2.2 How to cooperate and coordinate

The time and effort spent on getting the business units to work together is referred to as synergy initiatives, coordination mechanisms or cooperative mechanisms (Hill et al, 1992). In general, there are two generic ways that can bring two or more business units to cooperate and coordinate; the mandatory approach where the central power is forcing the cooperation, or the voluntary approach where the business units want to cooperate (Rozemeijer & Wynstra, 2005). According to these authors, factors leading to cooperation might be trust, common or congruent goals and interests, that they are complementary to each other or because cooperation is successful and leads to personal reward.

Another way of getting cooperation and coordination of otherwise independent business unit is the organizational design. According to Rozemeijer & Wynstra (2005) organizing and organizational design are of high importance when facilitating coordination of sourcing.

A definition of organizational design is given by Handfield et al (2009, p. 155): “Organizational design refers to the process of assessing and selecting the structure and formal system of communication, division of labor, coordination, control, authority, and responsibility required to achieve organizational goals and objectives, including supply management objectives”.

According to this definition, the coordination of sourcing is thus a part of the organizational design. According to Mintzberg (1991) the essential parameters of organizational design are job specialization, behavior formalization, training, indoctrination, unit grouping, unit size, planning and control system, liaison devices and decentralization.

In the further, organizational structure and management control system are chosen as the investigated organizational design features used for coordination. This will comprise both
the liaison devices and the formal structure. In addition, a common sourcing process, systems and tools is regarded as an important part of the organizational design when coordinating business units. This is a part of the behavior formalization, training and job specialization according to Mintzberg (1991). These three factors are also identified by other authors to have the significant means when working for corporate synergies (Rozemeijer et al, 2003).

1.2.2.1 Organizational structure
Organizational structure refers to where the organization places its decision making-authority (Handfield et al, 2009). There are a number of organizational barriers to achieving inter relationship in practice (Porter, 1998). A poor organization structure makes good performance impossible, no matter how good the individual managers may be (Drucker, 1954). And some authors are suggesting that some kind of centralization is needed in order to achieve coordination of business units (Child, 1984).

According to Van Weele (2005), chasing for synergy could harm the autonomy of otherwise independent business units. Of this reason, it is important to find the right balance between centralization and decentralization. However, the author now sees a trend where large corporations try to reduce the sourcing costs by combining forces across its business units. The reason for this is the synergy that can be achieved by such an effort.

1.2.2.2 Management control
The management control system is another factor influencing the coordination between business units. The purpose of the management control system is to implement strategies (Simons, 2000; Anthony & Govindarajan, 2007). As the related diversified firms chase for synergy by leveraging resources and competencies across the business units, the management control system must be designed in order to facilitate coordination of the business units.

Coordination involves making plans together and developing a structure that encourages communication. Such structures should also see to that conflicts are solved, make sure that information and communication systems are good, and arrange for a corporate identity (Rozemeijer & Wynstra, 2005).
Cost and cost recording are important input for a joint effort in sourcing by the
development of spend analysis and historical spend information (Van Weele, 2010). In
order to be able to coordinate the sourcing activities, such information must be available
and developed across the business units.

1.2.2.3 Process, systems and tools
The coordination between business units could take place by developing common
procedures, guidelines and tools. According to Handfield et al (2009) this will facilitate a
common performance towards the suppliers across the business units. This way of
working could be accompanied with training and learning programs in order to increase
the corporate competencies in this area.

Also when coordination takes place by voluntarily cooperation and coordination, the
shared values and interests should be implemented in an integrated sourcing system in
order to leverage the possible synergies (Englyst et al, 2008). However, according to
these authors, the system must at the same time give the business unit the necessary
flexibility to adjust to its own business environment. The synergy of using common
systems are supported by Van Weele (2005) who argues that modern information
technology can play an important role in facilitating cooperation and coordination across
company boarders. In these authors opinion, the modern technology allows the sourcing
process to be coordinated across subsidiaries, so that the sourcing processes can be
decentralized and thus closer to the end user.

1.3 The utility industry
The cooperation and coordination of sourcing is done in different context, both when it
comes to different industries and different companies.

The utility industry in Norway has gone through some substantial changes. From being
services provided by the public authority, there have been extensive changes in the public
delivery models in the recent years (Askim & Claes, 2011). This applies for the large
categories of telecom, the power industry, postal services and rail transportation.
According to the authors, the previous public companies have been restructured, both on
the initiative of the national governments but also from EU-regulations. The restructuring
has comprised both of market liberation giving private owned companies access to these
markets (like for instance in the power industry), but also of restructuring the services delivered. Separation of the responsibility for providing the infrastructure and for providing the services on the infrastructure is an example of such restructuring. This has been the case in rail services, where The National Railway Authority now has the responsibility for the infrastructure, and NSB has the responsibility for the passenger and freight transportation.

The interesting question is whether the companies in this restructuring process has managed to coordinate its business units, often multiple and in related businesses, in such a manner that synergy is created by coordination of sourcing? Thus, the chosen industry for this thesis is the utility industry in Norway.

The utility industry comprises both of public and private owned companies delivering utility services. There are different ways of defining such services. In the study conducted by Askim & Claes (2011), four main categories of the utility services were investigated; telecom, power industry, postal services and rail transportation.

However, according to public procurement regulations in Norway, the utility services also comprise providing, operating or distributing drinking water, electricity, gas or heating. Exploiting a geographical area for searching or extraction of oil, gas or coal, or terminal facility provided for air, sea or river operators is included. A third category is to make available or operate a grid network for public transport by bus, rail, trolley, subway or cable. Finally, post services are included as utility services.

Not all parts of the utility industry have gone through structural changes. For instance, providing infrastructure for drinking water is still the sole responsibility of the local municipalities.

1.4 Concluding the problem discussion

As discussed in the background and problem discussion, the creation of synergy from being a related diversified firm requires some cooperation and coordination mechanisms to be in place. Such cooperation and coordination can either be voluntarily and ad hoc on the initiative of the business units, or it can be forced by the central office.
In addition, there are many aspects of cooperation and coordination as described above;

- it must be supported by a cooperative behaviour and common goals and interests
- it takes time and effort.

Thus, the above problem discussion represents a broad perspective of different aspects when coordinating business units. In the further, the perspective is narrowed to address the practical arrangements, formal and informal, represented by the organizational structure, management control systems, and systems, tools and methods. These represent structural and management initiated mechanisms used to promote the coordination and cooperation.

The question is how the coordination of sourcing across business units is facilitated in order to create synergy? Is the organizational structure and management control system formed in a manner for such coordination to take place across the business units? How is the information technology used in order to promote cross-company cooperation and coordination? Is the knowledge and information shared in order to gain bargaining power when sourcing from the market? And what kind of synergy is created of this effort? And will synergy be present in the utility industry given the structural changes these businesses have gone through?

By this, the behavioural aspects like corporate culture, common set of shared values and beliefs, are left out of the research. These aspects are important implementing coordination mechanisms because they are powerful in providing focus, motivation and norms (Rozemeijer & Wynstra, 2005). However, as the focus of this thesis is on the structural and practical arrangements used in order to create synergy; these behavioural sides will not be a part of the explanation of how this is done.
The preliminary model for the thesis is presented in the figure below:

![Diagram of coordination mechanisms and synergy](image)

**Figure 1: Coordination of sourcing for creation of synergy (own creation)**

The research is conducted by investigating the mechanisms used by related diversified firms in the Norwegian utility industry in order to coordinate the sourcing among its business units. The coordination mechanisms aims at leveraging the sourcing resources of the firm, in order to create synergy in the form of economies of scale, economies of information and learning, and economies of process.

### 1.5 Research question

From the background and problem discussion, the following research question is formulated:

- How is sourcing coordinated across business units in related diversified firms in the Norwegian utility industry?
- What kind of synergies is created of this coordination?

### 1.6 Purpose

The purpose of the research is to:

- Describe how sourcing is coordinated in related diversified firms in the Norwegian utility industry.
- Explain how synergies are created from this coordination.
2. METHODOLOGY

The chapter gives an outline of the considerations done with regard to research methodology, relevant aspects that have been evaluated and the decisions that have been made. The aim of these considerations is a credible study that will be trustworthy in its conclusions and recommendations.

2.1 Research strategy and scientific perspective

The research strategy and scientific perspective is mostly concerned with the general orientation of how the research is going to be conducted. According to Bryman & Bell (2007) and Saunders et al (2009), the scientific perspective is mainly decided by epistemological considerations and the research strategy by the choice between qualitative and quantitative research.

2.1.1 Scientific perspective

There are two basic scientific foundations to consider when conducting a study of the social world; the positivism and the interpretivism (Bryman & Bell, 2007; Saunders et al, 2009).

According to Bryman & Bell (2007), positivism uses the general rules of natural science in the study of social reality. But also some other principles have been included in this term, such as the relationship between theory and research (inductive and deductive) and the clear distinction between scientific statements and normative statements. In these authors opinion, interpretivism is the opposing scientific perspective that advocates that the people and their institutions are fundamentally different than the natural science and needs other logic of research methods.

Hermeneutic is an example of the interpretivism concerned with the understanding human behavior as opposed to explain it, like in the positivism perspective (Bryman & Bell, 2007). This scientific approach looks at how individuals give meaning to a situation and act on those meanings with the underlying belief that humans play an active role in creating society (Browne, 2006).
2.1.2 Qualitative and quantitative research

Another important aspect in determining the scientific perspective and research strategy is the choice between qualitative and quantitative research (Bryman & Bell, 2007; Saunders et al, 2009). The difference between quantitative and qualitative research is not only whether or not quantitative analysis methods is used, but also different perspectives on knowledge and research objectives (Ghauri & Grønhaug, 2005).

Bryman & Bell (2007) states that quantitative research is conducted when collection and analysis of data is quantified, and there is a deductive approach to the relationship between theory and research. Also characteristic of quantitative research is the norms of the natural scientific model and of positivism in particular. According to these authors, qualitative research is a research strategy that normally uses words rather than quantification in the collection and analysis of data. This research strategy is usually followed by an inductive approach to the relationship between theory and research and emphasizes how the individuals interpret their social world (interpretivism).

2.1.3 Research strategy and scientific perspective in this thesis

The scientific perspective of this research is the positivistic perspective. The general rules of positivism are dominating as the research follows a highly structural approach starting with defining a theoretical framework before collecting the empirical data. The research tries to explain and describe the coordination mechanisms used in order to create synergy of sourcing. Thus, the research seeks to describe and explain the construct of reality, rather than understand and interpret this reality in a subjective way.

As stated above, the positivistic scientific perspective is characteristic for a quantitative research strategy. However, even if a positivistic scientific perspective is the foundation of the research, the data collection and analysis will be done in qualitative way.

2.2 Scientific approach

The scientific approach is the choice of the relationship between theory and research. There are two generic approaches; the deductive and inductive approach (Bryman & Bell, 2007; Cohen et al, 2007).
2.2.1 Deductive
The deductive approach is following the underlying assumption that “through a formal sequence of logic, from the general to the particular a valid conclusion can be deduced from a valid premise” (Cohen et al, 2007, p. 6). This represents the commonest view of the nature between the relationship between theory and research. The knowledge of a particular domain and the theoretical considerations of that domain are used in order to deduce a hypothesis. In the next step this is tested empirical by translating it into operational terms (Bryman & Bell, 2007).

2.2.2 Inductive
The inductive approach is taking the opposite approach in the order of the relationship between theory and research (Bryman & Bell, 2007). With the inductive approach, theory is the outcome of the research. According to the authors, the observations and findings of the research are used in order to build new theory and knowledge about the investigated domains.

2.2.3 Scientific approach of this thesis
The chosen scientific approach is the deductive approach. The theory is investigated in order to state the knowledge of the chosen domain which is the concept of sourcing and the coordination mechanisms used to create synergy. This forms the basis for the empiric investigation of this domain, the formulation of a research question which then will be answered by the analysis of the empirical data.

2.3 Research design
A definition of research design is formulated by Ghauri & Grønhaug (2005, p. 56): “The research design is a plan for relating the conceptual research problem to relevant and practical empirical research”. According to these authors, the research design is a framework for data collection and analysis, and reveals the type of research; exploratory, descriptive or causal.

2.3.1 Exploratory, explanatory and descriptive design
In the descriptive research, the research problem is structured and well understood (Ghauri & Grønhaug, 2005). The research question aims at portraying an event or a
situation, and could be done in combination with an explanatory research (Saunders et al, 2009).

The exploratory research is characterized by the fact that the research problem is unstructured and that the research question is not well understood (Ghauri & Grønhaug, 2005). According to Saunders et al (2009), the research is conducted in order to find out what is happening and to seek new insight in the phenomenon that is investigated. In this kind of research the researcher must be willing to change direction under the study as a result of new data appearing.

In the explanatory research, the aim is to establish or determine a causal relationship between variables (Saunders et al, 2009; Ghauri & Grønhaug, 2005). In such causal research the research problem is also structured (Ghauri & Grønhaug, 2005). However, the emphasis is to study a situation or a problem in order to explain the relationship between the variables (Saunders et al, 2009).

2.3.2 Types of research design

According to Bryman & Bell (2007), the research design should reflect the priority that is given to a number of dimensions in the research process. Such dimensions should among other things, include the importance of the causal connections between variables and the importance of generalizing to a larger group. The authors describes five different types of research design; the experimental and related design, the cross-sectional design, the longitudinal design, the case study design and the comparative design.

Similar categorizations could also be found by other authors, like for instance categorization in experiments, survey, case study and action research (Saunders et al, 2009). However, according to Yin (2003), it is not important what label that is attached to a particular design, but rather if it will provide an answer to the research question and meet the objectives of the study.

In this study a real life phenomenon is going to be investigated and according to theory the most suitable research designs are cross-sectional (survey) or case study (Bryman & Bell, 2007). According to these authors, the cross-sectional design is defined by the researcher’s interest in variation and the data are collected at a single point in time with
quantitative or quantifiable data. The design is used to examine relationship between variables, but not with a time order of the events.

The case study entails the detailed exploration of a specific case, which could be a community, organization, or a person (Dul, 2008). When performing a case study, the cases in their real life context are selected and the data from the cases are analyzed in a qualitative manner. According to Dul (2008), what separates the case study from the experiment is that there is no manipulation in the data collection process.

The closeness to the real-world situation aims to produce a deep understanding of the cases that results in a new learning about real-world behavior and its meaning (Yin, 2012). According to the author, the case study assumes that examining the context and conditions related to the case are necessary to understand the cases. A case study design could consist of either one or multiple cases. Choosing multiple cases is suitable when there is a need to establish whether the findings occur in other cases as well as in the first. A consequence of this will be a need to generalize from these findings (Yin, 2003).

According to Bryman & Bell (2007), multiple case study and cross-sectional design resembles each other. In their opinion, what distinguishes them is the focus of the research. If the focus is on generalization and the sample of cases, the research design is cross-sectional. If the focus is on the case and the individual context of the case, the research design is a multiple case study. Yin (2012) makes a clear distinction by stating that the cross-sectional design is concerned with statistical generalization where a conclusion is made about a population on the basis of the empirical data that is collected from that population. This is opposed to analytic generalizations where a previously developed theory is used as a template for comparison of the empirical results of the case study.

2.3.3 Research design in this thesis
In this study, the research question is both descriptive and explanatory. First, the concept of sourcing and how sourcing can be coordinated are described. Thus, this is a descriptive research question. Next, coordination of the sourcing activities creates synergy in one or several of the three forms identified from theory. This leads to a causal effect between the
scope and nature of the coordination of sourcing, and the value of the synergy. Thus, the second research question is of explanatory nature.

The focus in the research is the cases and their context rather than the sample of the cases. A comparison between the cases is done on the basis on previously developed theory, thus according to Yin (2012) the research design is a multiple case study.

2.4 Sampling method

According to Bryman & Bell, sample concerns the segment of the population that is selected for research. Sampling method thus involves how the case companies and the respondents were selected in the research.

The research is performed in the Norwegian utility industry, thus representing the population of this research. Also, the research is conducted in firms comprising related diversified business units. This excludes a fraction of the utility industry; the water- and sewage companies in the municipalities, responsible for the supply of drinking water. These companies are operating in one industry and in the smallest municipalities they are only represented by a department in the municipality administration. Thus the population consists of a handful of large companies with multiple business units in different (but related) industries.

The sample was identified by searching for the largest companies in the utility industry, anticipating that these would be organized as a diversified related firm. The sampling is done by asking the largest companies within the different sectors in the utility areas; electricity/power generation, post services, oil, terminal for air transport operators and telecom. Thus, the sampling is done by systematic judgment (Ghauri & Grønhaug, 2005).

The number of three case companies was selected in order to be able to draw analytical conclusions from the sample. In case of divergent answers between two cases, a third case provides a determinant position of the matter in question.
The following companies were asked to participate in the research:

<table>
<thead>
<tr>
<th>Company</th>
<th>Response</th>
<th>Utility area</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Norwegian Post</td>
<td>No</td>
<td>Postal services</td>
</tr>
<tr>
<td>Avinor</td>
<td>Yes</td>
<td>Provider of terminal infrastructure for air operators</td>
</tr>
<tr>
<td>Statkraft</td>
<td>Yes</td>
<td>Power industry</td>
</tr>
<tr>
<td>Telenor</td>
<td>Yes</td>
<td>Provider of telecom and data network services</td>
</tr>
<tr>
<td>Statoil</td>
<td>No</td>
<td>Producer of oil and gas</td>
</tr>
</tbody>
</table>

*Table 1: Requested case companies*

In the case companies, the respondents were selected on the basis of their knowledge of how coordination of sourcing is done at a corporate level. Thus, personnel in corporate sourcing department were asked to be the respondents. The companies were asked to provide interviewees with knowledge about the organizational structure, the management control system, and processes, systems and tools. The companies decided themselves how many respondents that were necessary to interview in order to get answers in these areas.

The name and position of respondents are presented in the table below:

<table>
<thead>
<tr>
<th>Name</th>
<th>Category Position</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ivar Brynhildsvoll</td>
<td>Category manager Civil</td>
<td>Statkraft</td>
</tr>
<tr>
<td>Margit Granheim</td>
<td>Manager, Procurement Systems and tools</td>
<td>Statkraft</td>
</tr>
<tr>
<td>Gunn-Solvi Arveschoug</td>
<td>Purchasing Manager</td>
<td>Avinor</td>
</tr>
<tr>
<td>Runar Stalsberg-Endresen</td>
<td>Sourcing Director (CPO)</td>
<td>Telenor</td>
</tr>
<tr>
<td>Asbjørn Wetlesen</td>
<td>Manager of Sourcing IT Applications</td>
<td>Telenor</td>
</tr>
</tbody>
</table>

*Table 2: Name and position of respondents*
2.5 Data collection or research method

A research method is simply a technique for collecting data (Bryman & Bell, 2007; Ghauri & Grønhaug, 2005). Data is usually divided in primary and secondary data distinguished from whether they come from primary or secondary sources (Walliman, 2005).

2.5.1 Collection of primary data

Primary sources are described by Walliman (2005, p. 242): “Primary sources are sources from those which the researcher can gain data by direct, detached observation or measurement of phenomena in the real world, undisturbed by any intermediary interpreter.”

There are several ways of collecting primary data. It can be done by an instrument, such as a questionnaire or a structured interview schedule, or observation where the researcher listen and watch others (Bryman & Bell, 2007). According to Yin (2012) data collection in qualitative research involves interviewing, observing, collecting and examining and feeling. This means having a plan, for instance for sampling the observation moments by a predetermined schedule and to determine the nature of the data collection instrument.

An interview is a purposeful discussion between two or more people and can be done either by structured, semi-structured or unstructured interviews (Saunders et al, 2009; Bryman & Bell, 2007).

According to these authors, structured interviews use questionnaires based on a predetermined and standardized set of questions, often with the use of pre-coded answers. Semi-structured interviews are usually conducted with a list of themes and questions to be covered, although these may vary from interview to interview. According to these authors, this means that some questions only is raised when a specific organizational context occur. Also, the order of the questions may vary. Unstructured interviews are informal and used when the researcher want to explore in depth a general idea. In this case, there is no predetermined list of questions but some ideas about the aspect or event that is explored.
2.5.2 Collection of primary data in this thesis

In this study the primary data is collected by the use of semi-structured interviews and conversations with the respondents. During the interviews, following a certain structure was emphasized in order to be able to compare among the cases (Bryman & Bell, 2007). An interview guide was developed, covering all necessary topics in order to answer the research questions.

However, the order and depth to each topic was allowed to vary from case to case. Also, the interview guide had open questions allowing the respondents to describe the actual construct in their own words.

The interview guide that was used for the collection of the primary data is enclosed in Appendix 1. Also, a scheme used to structure the information given by the respondents on the organizational topics was made in order to capture the data in a correct manner. This scheme is enclosed in Appendix 2.

2.5.3 Secondary data

Secondary data is described by Walliman (2005, p. 242) as: “Where data have been subjected to interpretation they are referred to as coming from secondary sources.”

According to Saunders et al (2009), secondary data includes both raw data and published summaries. Raw data is unpublished data usually provided from the inside of the company. Also relevant as secondary data is the documentary secondary data which include written materials such as notices, correspondence (including e-mails), minutes of meetings, reports to shareholders, diaries, transcript of speeches and administrative and public records.

2.5.4 Secondary data in this thesis

In this thesis, the secondary data used is primarily the literature used for the theoretical framework searched from credible databases. In addition, primary sources are also used for the short introduction of the case companies, mainly using the Annual Reports from each of them. In addition, some written material like organizational charts, expenditure figures and presentations was handed over during the interviews.
2.6 Data analysis

2.6.1 Data analysis techniques

Qualitative data are meanings expressed by words resulting in data requiring classifications into categories and analysis through the use of conceptualism (Saunders et al, 2009). The analysis of qualitative data is through the creation of a conceptual framework. This may be developed before, during or after the data collection is done according to Saunders et al (2009). The data analysis of case study qualitative data begin with a systematically organizing the data into hierarchical relationships, matrices, or other arrays.

According to Yin (2003), there are five different analytical techniques for conducting qualitative data analysis. The five techniques are:

<table>
<thead>
<tr>
<th>Analytical technique</th>
<th>Short description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern matching</td>
<td>An empirical based pattern is compared with a predicted pattern (or with several predictions).</td>
</tr>
<tr>
<td>Explanation building</td>
<td>This is a variant of the pattern matching but where the goal is to analyze the case study data by building an explanation about the case. The method is usually used for explanatory studies and normally involves iterations in the analysis.</td>
</tr>
<tr>
<td>Time-series analysis</td>
<td>Is also used in experiments and quasi-experiments and is analysing data from time-series. Such analysis can follow many intricate patterns and there may be only one single dependent variable.</td>
</tr>
<tr>
<td>Logical models</td>
<td>This model stipulates a complex chain of events over an extended period of time. The events are staged in repeated cause-effect-cause-effect patterns, where a dependent variable at an earlier stage becomes the independent variable for the next stage.</td>
</tr>
<tr>
<td>Cross-cases synthesis</td>
<td>The technique is relevant when having multiple cases. The technique does not differ from other research syntheses and are aggregating findings across a series of individual cases.</td>
</tr>
</tbody>
</table>

Table 3: Five analytical techniques (adapted from Yin, 2003)
2.6.2 Data analysis in this thesis

In this thesis, qualitative data is collected, meaning non-numeric data or data that have not yet been quantified.

The thesis is conducted as a multiple case study, and the data analysis is performed as a cross-case synthesis according to Yin (2003). The conceptual framework is the basis for the analysis and the qualitative data is structured in accordance with this. Further, tables are used in order to compare the data across the cases for each theoretical element.

The data analysis has made it possible to examine similarities and contradictions across the cases.

2.7 Scientific credibility

The scientific credibility concerns whether or not the results of the research can be trusted. There are two important measures that must be considered when conducting research (Bryman & Bell, 2007; Yin, 2003).

2.7.1 Reliability

2.7.1.1 External and internal reliability
Reliability is concerned with the question of whether the results of the research are repeatable. In other words, would the result have been the same repeating the study under the same circumstances? According to Bryman & Bell (2007), this means that the measures that are used in order to operationalize the concepts that are investigated should be consistent in order to be reliable. This is supported by Yin (2003) who states that a research will be reliable when it is possible to repeat the study, in the same context and with the same informants, and find the same result.

According to Bryman & Bell (2007), in qualitative research, reliability is either external reliability or internal reliability. The external reliability refers to whether or not the study can be replicated. Replication is difficult when performing qualitative research as the social context will be hard to copy. The internal reliability in a qualitative research refers to whether or not the members of the team agrees on what they see and hear (Bryman & Bell, 2007).
2.7.1.2  Reliability in this thesis
In order to secure the external reliability of the thesis the steps of the data collection process was documented by transcript of interviews and the establishment of the database of tables where the data was structured. The interview guide is documenting the topics that are covered and the usual order they appear in. In this way, measures are taken in order for the study to be repeated by other researchers with the same result. As there has been only one researcher in this thesis, the internal reliability according to the definition of Bryman & Bell (2007) is not relevant.

2.7.2 Validity
Validity concerns the integrity of the conclusions and whether or not the results of the research could be generalized to include a greater setting than the investigated one. For example if the results could be applicable for other organizations (Bryman & Bell, 2007).

2.7.2.1 Types of validity
According to Bryman & Bell (2007) there are several types of validity; measurement validity (to what extent the measures represent the concept), internal validity (whether or not the causal relationship is holding water), external validity (whether the results can be generalized) and ecological validity (whether or not the findings are applicable to peoples everyday settings).

Yin (2003) describes several tests measures can be taken in order to secure validity. These are presented in the following table:

<table>
<thead>
<tr>
<th>Tests</th>
<th>Case study tactic</th>
<th>Phase of research in which tactic occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct validity</td>
<td>Use multiple sources of evidence and establish a chain of evidence. Have key informants review draft of case study report.</td>
<td>Data collection and composition</td>
</tr>
<tr>
<td>Internal validity</td>
<td>Use data analysis techniques</td>
<td>Data analysis</td>
</tr>
<tr>
<td>External validity</td>
<td>Use replication logic in multiple case studies</td>
<td>Research design</td>
</tr>
</tbody>
</table>

Table 4: Validity tests (Yin, 2003)
2.7.2.2 Validity in this thesis

Construct validity is the ability to develop operational measures (Yin, 2003). To ensure that the measures were the right ones, definitions of the most important concepts were enclosed in the interview guide. The interview guide was sent to the informants a couple of days before the interview. In addition, the concepts were clarified during the interviews. The informants had insight into the concepts of coordinating sourcing activities, thus did not have to be explained the basic underlying theory.

After the interview, a transcript of the interview was sent to the informants in order to be sure that the right opinion was expressed in the written documentation. To be able to follow the informants in their descriptions of the company, an empty organizational chart was filled out during the interview. The data collected is checked for errors and also checked against other sources, like company presentation, organizational charts and from other documentation provided by the company. In addition, two of the cases companies provided more than one informant giving the thesis multiple source of evidence.

The internal validity is related to whether or not the causal relationship is holding water. The analysis model was briefly discussed with informants, and the causal relationship of coordinating business units in order to create synergy was carefully established by theory.

The external validity concerns whether or not the results can be generalized, thus if the results and conclusion of the thesis could be generalized to apply beyond the case companies (Bryman & Bell). According to Yin (2003) such analytic generalizations can be done where a previously developed theory is used as a template for comparison of the empirical results of the case study. Thus, if the findings are in accordance with the theoretical framework, the findings could be generalized to a larger population. With the use of systematic data collection and analysis procedures, the findings can be generalized to other situations through analytic generalization as described above.
## 2.8 Summary of research methodology decisions

A summary of the decisions and considerations that are made with regard to the research methodology of the thesis is summarized in the table below:

<table>
<thead>
<tr>
<th>Methodology considerations</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research strategy and scientific perspective</td>
<td>Positivistic</td>
</tr>
<tr>
<td>Scientific approach</td>
<td>Deductive</td>
</tr>
<tr>
<td>Research design</td>
<td>Descriptive and explanatory, multiple case study design</td>
</tr>
<tr>
<td>Sampling method</td>
<td>Systematic judgmental</td>
</tr>
<tr>
<td>Data collection method</td>
<td>Both primary and secondary data sources. Semi-structured interviews.</td>
</tr>
<tr>
<td>Data analysis</td>
<td>Cross-case synthesis, cross-case comparison</td>
</tr>
<tr>
<td>Reliability and validity</td>
<td>Internal and external reliability. Construct validity, internal and external validity.</td>
</tr>
</tbody>
</table>

Table 5: Summary of methodology considerations
3. THEORETICAL FRAMEWORK

The theoretical framework is developed to provide a frame of reference for answering the research questions. The theory part is divided into three parts; the concept of sourcing, the coordination mechanism and synergy.

To answer the research question of how sourcing is coordinated across business unit, two theory parts are used. The first theory part is giving a more substantial description of the concept of sourcing by discussing different definitions and elaborating the content of the concept. The second theory part is describing the three chosen coordination mechanisms; organizational structure, management control and standardization by process, systems and tools. In this part, the coordination mechanisms are related to the sourcing activities described in the first part. Answers to the research question will by this include a description of which coordination mechanisms that can be used and in what part of sourcing they are applied.

Synergy is presented in the third theory part in order to give answers to the second research question. The concept is described first in a more general term and secondly more specific for sourcing. Synergy of sourcing is operationalized at the end in order to answer what kind of synergies that is created of the coordination mechanisms of sourcing.

From chapter 1 the theoretical framework is illustrated as follows:
At the end of the chapter, the model for analysis is put together from the theory elements presented. This is the basis for the analysis that is conducted taking the theoretical framework and the empirical collected data into account.

3.1 Sourcing

3.1.1 Sourcing definitions

Sourcing is the activities that are performed in order to acquire the goods and services that the company need for its business activities (Axelsson et al, 2005; Van Weele, 2010). A more precise definition of sourcing is provided by Axelsson et al (2005, p. 7): “Sourcing is a cross-functional process, aimed at managing, developing and integrating with supplier capabilities to achieve a competitive advantage”.

This definition reflects that sourcing activities range from the strategically perspective affecting the long-term performance of the company and its competitive advantage, and down to the tactical perspective of the practical arrangements when integrating with the suppliers. Also, the definition indicates that the sourcing is a cross-functional process, thus horizontal rather than vertical oriented. This definition do not emphasize the operational terms of “buying”, meaning getting the right product at the right time, but rather the identification and selection of suppliers and their capabilities.

The definitions resembles the definition of “supply management” made by Handfield & al (2009, p. 8): “Supply management is a strategic approach to planning for and acquiring the organization’s current and future needs trough effectively managing the supply base, utilizing a process orientation in conjunction with cross-functional teams to achieve the organizational mission.”

This definition has more emphasis on the strategic aspect and is also focusing on planning of needs in conjunction to a supply base. In the definitions made by Axelsson et al (2005) the focus is more on the supplier capabilities, both managing, developing and integrating it with own operations. This is a wider perspective than the one presented by Handfield et al (2009). However, both emphasizes the fact that sourcing and supply management is a process performed in a cross-functional manner, and that the activities are done in order to achieve the overall goals of the company.
Other authors like van Weele (2010) leaves out the determination of the specifications in the sourcing concept. By this, the sourcing process is limited to the selection of suppliers and the contracting phase. Also some differences can be seen when defining the activities that are surrounding the sourcing process, like the choice of organization structure, the use of information technology, determining the corporate strategy and policies. The author van Weele (2010) is using the term *sourcing management* while Handfield et al (2009) is including this in supply management.

For the purpose of this research, both the facilitating and surrounding management activities and the sourcing process (also sometimes referred to as strategic sourcing) are included in the concept of sourcing. Due to the similarities of the concepts, “sourcing” and “supply management” both are used in the further. This is reasonable as even the authors Handfield et al (2009) are using the terms “strategic sourcing” and “supply management” interchangeably. The term purchasing also may appear, but is usually representing a more narrow and operational concept than sourcing and supply management (Axelsson et al, 2005; Handfield et al, 2009).

The sourcing function is represented by those who are involved in buying, purchasing, sourcing or supplying in one way or another (Axelsson et al, 2005). The focus of this research is the sourcing professionals, thus the sourcing activities rather than the sourcing function.

### 3.1.2 Sourcing strategies

The concept of sourcing comprises development of overall sourcing strategies. These kinds of strategies are not defined for a specific commodity or category, but made in conjunction to the overall spend of the company. Overall strategy is contingent to many different factors, such as the importance of sourcing to competitiveness of the company (Cousins et al, 2008). For development of sourcing strategies, the portfolio matrix originally developed by Kraljic (1993) is widely used (Van Weele, 2010; Cousins et al, 2008). In the portfolio matrix the overall spend of the company is categorized in segments based on the supply risk in the supply market and the impact on business imposed by the specific spend category. Such categorization gives important guidance to the strategy of the spend category, such as make-or-buy decisions, what relationship to
develop with the supplier and what ICT to use in the relation (Van Weele, 2010; Cousins et al, 2008).

3.1.3 Category and supplier management

From the definitions of sourcing and supply management, the concept of sourcing includes management and development of supplier capabilities. These activities is also done in connection to a specific sourcing process (as described below) but also in connection to categories, suppliers and markets (Van Weele, 2010).

Supply base management is one of such activities which is aimed at defining how many and which suppliers to maintain a relationship with. Normally the goal is to reduce the number of suppliers (Cousins et al, 2008). This involves analysis of the supply base to ensure that only the most capable suppliers are kept in the supply base (Handfield et al, 2009).

Supplier relationship management means to monitor the performance of the supplier, both when it comes to overall performance and when it comes to a specific item or sourcing process (Van Weele, 2010). According to Handfield et al (2009) supplier development and performance measures identifies areas in need for improvement, and defines what activities that should be performed towards the specific supplier. Supplier relationship management also includes determining how often to meet with the supplier and at what executive level the meetings should take place.

Category management is the third sourcing activity in category and supplier management. A category or commodity group refers to a specific family of products or services (Van Weele, 2010; Handfield et al, 2009). Category management often involves using spend analysis in order to identify categories to coordinate by a common sourcing process across divisions or business units. But also categories could be managed by a single business unit themselves (Handfield et al, 2009). According to Englyst et al (2008) and Van Weele (2010) the category teams are often centrally coordinated, and develop and implement company-wide strategies for a given commodity. Spend and market analyses are important input when developing such strategies (Handfield et al, 2009). Category management and category sourcing teams are usually used for pooling and negotiation of standard market or homogeneity commodity.
According to Handfield et al (2009) the category strategy can contribute to objectives of cost reduction, supply base reduction, supply assurance and quality.

3.1.4 The sourcing process

The sourcing process is defined differently by authors as discussed above, but for the purpose of this research, the process defined by Handfield, et al (2009) is used:

![Figure 2: The strategic sourcing process (Handfield et al, 2009)](image)

The first step comprise building of a team, usually a cross-functional team, that is appointed from the departments or the relevant business units when cross-organization sourcing. Creation of successful teams requires considerations of many factors in order to get the sourcing process to result in its planned performance (Driedonks et al, 2010; Handfield et al, 2009). Also this phase consists of development of plans like the scope of work and progress plans. The base line is developed along with the goals of performance (Handfield et al, 2009). Also the basis for the baseline calculations, or the spend analysis, is elaborated. Sharing of such information between business units will be an important coordination mechanism when it comes to creation of synergy from pooling sourcing needs.

When the initial phase is concluded, the market research is the next activity. In this phase, different market research techniques are used in order to identify the suppliers, understand the market, its capacity and structure.

When this is finished the information is used to develop a sourcing strategy. Other input for the strategy development is the use of portfolio matrix and forecast of spend (Handfield et al, 2009; Van Weele, 2010) as described above. The sourcing strategy will determine the choice of single or multiple suppliers, local or global sourcing, partnership or arms-length relationship, buying on contract or buying on spot, price agreements versus performance agreements (Handfield et al, 2009; Van Weele, 2010).
Contract negotiations will take place after a selection process with one or several suppliers. In order to have successful negotiations it is important to have a proper negotiation plan and an evaluation tool. This phase is finished when the contract is signed. When this is done, the relationship with the supplier needs to be managed. Agreed performance is measured and a plan for supplier development and communication is made (Handfield et al, 2009).

3.1.5 The concept of sourcing

As described above, the concept of sourcing has several layers which are illustrated in the figure below:

![Figure 3: The concept of sourcing (own creation)](image)

What are termed “sourcing management” are the surrounding management tasks. For instance making the decisions on the proper organizational structure, plan and prioritize the budget and personnel resources, develop and maintain systems and tools used in the sourcing organization. From the figure it is obvious that the coordination mechanisms that are chosen, in fact are a part of sourcing management as it is defined in this thesis.
As sourcing management is included in the concept of sourcing, also the coordination mechanisms are a part of the concept.

The other part is the “sourcing activities” connected to determining strategy and relationship towards supplier and markets, and perform the sourcing processes that are identified as necessary. The distinct line that is drawn between the three levels of sourcing is not as strict as the figure indicates. Development of strategy, category management, supplier relationship management and supply base management are all connected to the sourcing processes, defining the strategy and context of each process. Also, supplier relationship management is taking place both in connection to a specific delivery of a specific item, thus in a specific sourcing process. Supplier relationship management is also done in connection to the suppliers’ total business in the firm. This could comprise managing the relationship towards this supplier on the behalf of several contracted deliveries, in one or several of the firm’s business units. To summarize, the same activities are performed on the different levels but with a different scope and context in question.

### 3.2 Coordination mechanisms

The coordination mechanisms are used in order to practically arrange for coordination of sourcing activities in order to create synergy as described in the introduction chapter.

The mechanisms should be used contingent to the organizational design of the company (Rozemeijer, 2000). As an example, the author state that the mechanisms used to realize synergy in advanced network organizations should be different from the traditional large-scale organizations. In his opinion, centrally controlled mechanisms applied in network organization will result in high complexity and coordination costs. Thus, this will reduce the total synergy of the coordination mechanism.

The mechanisms for coordinating sourcing are the organizational structure, management control system and process, systems and tools.

#### 3.2.1 Organizational structure

According to Handfield et al (2009), organizational structure refers to where the organization places its decision-making authority. If the sourcing executive at corporate
headquarter has the authority for the majority of the company’s expenditure, there is a centralized authority structure. On the contrary, if the authority for the majority of purchase expenditure is at the business unit level, then there is a decentralized decision-making authority. However, the authors claim that few companies lie in extremes, but are rather having grades of centralization and decentralization. This could vary with the task (strategic tasks centralized and operational tasks decentralized) or by the expenditure level (capital expenditure centralized while others decentralized). Organizational structure about the location of the personnel performing specific tasks often showed in organizational charts (Anthony & Govindarajan, 2007).

Coordination defines how the firm communicates and integrates decision making processes across the groups and business units (Handfield et al, 2009). This is a part of the formal organization structure of the firm along with the assignment of work and the authority that comes with the specific responsibility.

Mintzberg (1991) present six basic coordinating mechanisms, functioning like glue and holding the organization together. The coordination mechanisms used in relation to the organizational structure are direct mutual adjustment and direct supervision (Mintzberg, 1991). Direct mutual adjustment involves coordination of work by a simple process of informal communication. People who do the work interact with each other to coordinate. This is done by devised liaisons; positions, temporary taskforces or standing committees, integrating managers with formal authority and matrix structure. The other coordination mechanism related to organizational structure is direct supervision. The coordination is done by one person giving orders and instructions to others. This often is needed when a certain number (15 is indicated) have to work together. For example, this may be a corporate sourcing team leader, responsible for coordinating the work done by his or her team members.

3.2.1.1 Centralization

Centralized sourcing structure means that all sourcing activities are managed by a central sourcing group (Rozemeijer & Wynstra, 2005; Handfield et al, 2009; Van Weele, 2010). Thus, the coordination is done by direct supervision according to Mintzberg (1991).
In a situation with multiple business units, the centralized sourcing department is operating both at the strategic and tactical level (Van Weele, 2010). This department takes decisions regarding supplier selection, and negotiates and prepares contracts with suppliers. According to the author, decisions of product specifications also often are made centrally, in cooperation with centrally placed engineering and research departments.

Such an organization structure provides many advantages. It facilitates coordination of sourcing activities and thus leverages the possibilities for economies of scale from pooling the sourcing needs. The synergy value will be represented by better conditions due to accumulated volumes and quality from suppliers (Van Weele, 2010; Handfield et al, 2009).

Handfield et al (2009) presents another advantage of a centrally led sourcing department. It can develop a more standardized and uniform consistent performance across all business units, and have the ability to develop specialized knowledge. According to the authors, also reducing duplication of effort amongst business units is facilitated by a central sourcing department. The centralized organization also has a position that makes it easier to provide the business units with companywide information systems and to develop and implement companywide change programs.

Both Van Weele (2010) and Handfield et al (2009) recognize that this organizational structure suffers from major disadvantages. The main disadvantage is the limited responsibilities of sourcing decisions for the business unit manager. This harms the business unit manager’s autonomy and will gradually undermine the position of the corporate sourcing department. However, this structure is appropriate in cases where several business units buy the same products, which at the same time are of strategic importance to them (Van Weele, 2010).

3.2.1.2 Decentralization

Decentralization means that the management in the business unit or division is fully responsible for all sourcing activities where the business unit manager is responsible for the financial result (Van Weele, 2010). Thus, in this case, no coordination of sourcing by organizational structure is made.
Handfield et al (2009) points to several advantages of such organizational structure. It can respond more quickly when business unit needs are changing. The sourcing personnel will also have a more in depth understanding and appreciation of the actual operating requirements, thus more familiar with the products, processes, business practice and customers of the business unit. By this, they will be more capable to assist new-product development.

The author Van Weele (2010), points at the disadvantages of this structure. Business units operating independently may be negotiating with the same supplier for the same products, and as a result arrive at different prices and conditions. When supplier capacity is tight, business units can operate as real competitors to each other and fight for the same supplier capacity.

3.2.1.3 Hybrid organization structure

Several authors agree that both the centralized and decentralized organization structure suffers from major disadvantages (Handfield et al, 2009; Van Weele, 2010; Rozemeijer & Wynstra, 2005). According to Handfield et al (2009), the centralized sourcing department should not emphasize strict control over all activities and processes, but rather focus on support, integration and coordination of common needs across the business units. However, the challenge is to know what activities to coordinate and what to leave with the business unit. Another challenge is how to conduct this coordination, taking the benefit of both the centralized and decentralized structure.

The hybrid structure represents a combination of the previous two organizational structures as it is neither totally centralized nor totally decentralized (Van Weele, 2010). In a hybrid structure, the authority for some tasks lies with a centrally led group whereas the authority for other tasks remains at the business unit level (Handfield et al, 2009). This organization structure makes the benefit of a centrally led group but remains responsive to business unit specific needs and requirements.

Hybrid organizations can take many forms and be called by many different names, hybrid pooling or co-ordination is also used (Van Weele, 2010). According to the author, these concepts relate to the effort of combining common sourcing needs across two or more operating units with the objective to improve the leverage of the company as a whole.
Thus, this structure both is taken the direct supervision coordination and the mutual adjustment coordination defined by Mintzberg (1991).

According to Handfield et al (2009), Rozemeijer & Wynstra (2005) and Van Weele (2010), some of the more common structures include:

1) **Lead division buying**
A group of operating units buy common items together where the lead division has the largest expenditure and leads the sourcing process and supplier negotiations. This business unit collects all relevant data from all other units and negotiates with the supplier. Each individual business unit periodically releases orders directly to the supplier referring to the appropriate contract conditions. In this situation, the sourcing processes are the only sourcing activities that are coordinated.

2) **Lead design concept**
The sourcing process is coordinated by the operating division or business unit who is responsible for the design of the specific product or component. Also in this situation, the sourcing processes are the only activities that are coordinated.

3) **Regional buying groups**
This appears when particular geographic regions join forces to negotiate with local and regional sources of common commodities. Only the sourcing processes are coordinated.

4) **Global buying committees**
When a key commodity is purchased by many major business units, a joint global strategy is beneficial. A centrally corporate headquarter leads the committee, and every major buyer is represented. This is also called centre-led action networks (CLAN) where all actual sourcing is taking place in fully empowered decentralized units, but with accountability and functional excellence managed from the corporate centre. This structure combines user control and responsiveness to local needs but with the ability to capture corporate synergy by using cross-unit coordination mechanisms. In this situation, the corporate centre could provide coordination of the strategic and tactical sourcing activities as well as coordinating the sourcing processes.
5) Corporate sourcing council

Corporate sourcing council comprises a small centrally led corporate staff supplemented by sourcing personnel at the business unit level. The sourcing personnel at business unit level are lower when having the centrally led corporate staff. The sourcing council provides a way to share expertise and develop common sourcing strategies. A purchasing council is comprised of a group of buyers who purchase similar items at various locations. This structure is also called federal organization of purchasing (FOP). The main characteristics are the autonomy of the business units and the sourcing specialist’s reports only internally. The federal unit exists in a small central core that supports and coordinates the sourcing units. Such voluntary coordination consists of a considerable exchange of information that takes place between the central core and the business units. Based on this data every business unit is free to decide whether to take part in a corporate contract or to operate individually.

6) Corporate steering committees

Corporate steering committees are similar to corporate purchasing councils, but tend to be more advisory in nature. The steering committees usually discuss strategy on the company’s major commodities.

Besides this six different hybrid structures, there is also the distinction between the line and the staff (Handfield et al, 2009; Van Weele, 2010). This could comprise a centrally placed corporate sourcing department responsible for procedures and guidelines, information systems and support for the business units. The business unit on the other hand conduct all tactic and strategic sourcing with own resources. According to the authors, this typically can be found in large organizations.

The trend today is to move away from a vertical focus, where work and information are managed up and down within functional groups, toward a horizontal focus, where work and information are managed across groups and between organizations (Mattson, 2000). The horizontal organization largely eliminates hierarchy and functional or departmental boundaries. In the horizontal organizations the work is done according to a process and performed by teams of different types (Handfield et al, 2009; Van Weele, 2010)
3.2.1.4 Sourcing teams

As showed by the coordination mechanism of Mintzberg (1991) coordination by mutual adjustment could be done by task force and liaison devices. In sourcing, the use of cross-functional and cross-company sourcing teams is an example of such task forces.

Sourcing teams (also referred to as category or commodity teams) are assigned the task of finding, selecting, and managing suppliers for a category of products or services across businesses, functions, and disciplines and are representing different functional background (Driedonks et al, 2010).

According to Handfield et al (2009), cross-functional sourcing team is appropriate when facing complex large-scale business decisions such as new product development, locating a new production facility or developing a category strategy. The reason for using cross-functional teams in such decisions is the broad set of skills and competence from different aspects and perspectives that are needed when making such decisions. These teams can be arranged with part-time personnel or full-time personnel, and on project basis or on a continuous basis.

According to Driedonks et al (2010) the idea of the cross-functional sourcing team is that the personnel from the different functions provide different knowledge and competence required for the specific sourcing task. These teams therefore have a complex boundary and spanning role, as they have to deal with a wide range of internal and external stakeholders.

Van Weele (2010) explain that the sourcing team represents a kind of pooling structures that are invisible in most organization charts, as they build upon the existing hierarchy or line organization, but join people together in, for example, teams and committees, or distribute responsibilities through lead buyer assignments. Thus, the sourcing teams are pooling the sourcing needs of several business units in order to achieve economies of scale. In a study conducted by Trent (2004) the coordination by the use of centrally coordinated sourcing teams was ranked by sourcing managers as one of the organizational structure that contributed the most to reaching the objectives of sourcing and supply management.
Handfield et al (2009) presents some of the other advantages of using sourcing teams; reduced time to complete the task, increased innovation, joint ownership of decisions, enhanced communication between functions and organizations, realized synergies by combining individuals and functions and better identification and resolution of problems. The synergy is achieved by the possible new and creative ways of looking at a problem from different perspectives and aspects brought in by the team members.

3.2.1.5 The choice of organization structure

According to Van Weele (2010), the following factors or criteria are commonly used when deciding to adopt centralization, decentralizations or hybrid organizations for sourcing activities:

- Commonality of purchase requirement; where homogenous requirements across the business units will favor for a centralized or hybrid organization structure securing coordination of sourcing needs.
- Geographic location; where cultural differences and distance that make coordination difficult speaks in favor of a decentralized organizational structure
- Supply market structure; where the power-balance between customer and supplier determines whether or not it is necessary to arrange for better negotiating position. If not, a decentralized structure is preferred.
- Savings potential; where the market and suppliers respond to high volume when offering a price. When the market is sensitive to volume, the pooling of negotiation power trough some coordination of the business units needs will lead to savings.
- Special expertise; when sourcing requires a specific expertise such as high-technology expertise; centralization could be favored in order to utilize that expertise across business units.
- Price fluctuations, if commodity prices are highly sensitive to the political and economic climate, a centralized purchasing approach is favored.
- Customer demands; in certain situations the customer dictates to manufacturers what component or product to buy for the end product. This will favor a decentralized structure as pooling of such needs to the manufacturers/business units market will not be possible.
3.2.2 Management control system

The management control system is defined by Anthony & Govindarajan (2007, p. 6) as: “the process by which managers influence other members of the organization in order to implement organizational strategy”. Other definitions point to the mechanisms that must be in place in order to conduct the management control activities, like routines and procedures (Simons, 2000).

These authors describe the management control activities to include planning of what the organization should do, coordinating the activities of several parts of the organization, communication information, deciding what actions that should be taken and influencing people to change their behavior. Thus, the management control system involves coordination of activities among different parts of the organization.

In the further, the elements of the management control system that is of importance for coordinating sourcing activities are included. Mainly, this involves the planning function and cost recording and accounting.

3.2.2.1 Planning

The main device for financial planning is the budget (Anthony & Govindarajan, 2007). The budget represents the planned expenditure for the companies, and is thus representing a plan for the sourcing needs and requirement for the coming year.

The sourcing strategy must be aligned with these budgeted activities and plans (Cousins et al, 2008; Handfield et al, 2009). And in terms of sourcing coordination, this alignment must exist for across business units. The coordination of the budget process should thus not only be coordinated on the financial aspect of the planning process, but the sourcing functions should also be permitted to coordinate sourcing needs and requirements as a part of this planning process. A sourcing plan based on the budgets for all business units will provide an overview of the categories that are going to be sourced, how much of each category that is planned to be sourced and at what time. This can result in a category plan involving one or several business units (Van Weele, 2010).

Thus, the information provided by a coordinated planning process can be used in order to plan a joint effort towards the market, pooling sourcing needs and plan the work of possible standardized requirements.
3.2.2.2 Cost recording and accounting

Spend analysis involves using systems technology to identify items purchased in common among divisions or business units (Handfield et al., 2009).

Sophisticated ERP-systems, e-purchasing systems and data warehouses are increasingly important. In order to provide the category teams and the sourcing specialists with the baseline information and an overview of the cross-company expenditure, the systems must be provided with centrally control or requirements (Handfield et al., 2009).

The spend analysis is an important input factor of making a solid business case and category sourcing strategy. If this spend data is not available or possible retrieved from the information systems, it can be time-consuming and costly to gather the detailed information necessary for strategy planning and decision-making (Driedonks et al., 2010).

In order to facilitate an accurate spend analysis, it is important to have a good procure-to-pay process that is capturing the necessary spend information (Handfield et al., 2009).

The spend analysis is presented by the so-called spend cube where analyses of the company’s sourcing spend per type of category, per supplier and per budget holder or business unit is done (Van Weele, 2010). This analysis allows the company to set up a category tree, indicating the companies most important spend categories or spend segments. It shows the most important direct and indirect spend categories which are defined as a coherent group of products or services, bought from the suppliers. The spend analysis is at the next stage used to assess the cost savings potential of the actual spend category.

Figure 4: The purchasing spend cube (Van Weele, 2010)
Whether or not spend information is provided in a horizontal manner, e.g. for all business units will be crucial for having the accurate information for developing a category strategy and the possible synergy of coordinating the sourcing process. In this sense, the cost recording and accounting principles of the business units must be harmonized. If not, at least some capture of transactions in data warehouses must be provided.

3.2.3 Process, systems and tools

Coordination can also be done by standards that predetermine what people should do to ensure that coordination is accomplished (Mintzberg, 1991). From the totally six coordination mechanisms presented by this author, the four remaining coordination mechanisms are in this category.

According to Mintzberg (1991), coordination could be accomplished by standardization of work processes meaning that the content of the work is specified or programmed by procedures and instructions. Also coordination could take place by standardization of output of the work by specifications of the results of the work (saving target). The third coordination mechanism is standardization of knowledge and skills that serve as input to the work, meaning that it is the person that does the work that is standardized. By this, coordination is achieved by various employees having learned what to expect from each other, each knows exactly what the other will do and can coordinate accordingly. The last coordination mechanism presented by Mintzberg (1991) is standardization of norms that more generally guide the work. The workers share a set of common beliefs and can achieve coordination based on these, for instance been given guidance of what to prioritize in certain situations.

In the opinion of Rozemeijer & Wynstra (2005), the mechanisms provided by Mintzberg (1991) are some of the most significant coordinating mechanisms and could be combined in many different ways. They provide some important choices when trying to coordinate sourcing activities.

In this category standardization of the sourcing process and systems and tools used in the sourcing process is chosen.

Coordination by process is done by determining what activities and what sequence of these activities that should be applied when performing sourcing processes (Mattson,
In the opinion of the author the business process can be defined as an interrelated series of activities that convert business inputs into business outputs. The most typical characteristic for business processes is that they reach across functional boundaries. Mattson (2000) state that process management is based on the simple fact that products and services are created by the joint effort of various functional resources in the company, and not by individual functions and departments in isolation. This is supported by Rozemeijer & Wynstra (2005) who claims that the process structure is based on a complete flow of work such as the sourcing process. The process is conducted by personnel that is gathered to work on their different activities in the process, and should be given an end-to-end responsibility for the overall process.

To share common tools, procedures and methods is a way to develop best practice performance among the business units (Rozemeijer, 2000). Both because for instance a common process and methods will make the sourcing processes more homogenous and standardized across the business units, but also to facilitate communication between business unit members.

Another way of coordinating the sourcing process is to share information, communicate, and provide the sourcing specialists with common guidelines, is the use of information technology. The different use of information technology in sourcing is the transactional processing and decision support.

Handfield et al (2009) present e-sourcing or e-tools to be information technology that supports process steps and decision making. Most common and known system of this type is the reversed auction tools. Such e-tools are used by sourcing specialists to communicate within and outside the organization with suppliers. Such information sharing with the suppliers consist of product specifications, submission of a bid, acceptance of the contract, and inspection and receiving documents associated with the shipment. According the author, e-sourcing tools are defined as a set of tools employed by supply managers to streamline processes and leverage technology in order to meet the needs of the organization.

E-sourcing is a term that refers to the use of internet-enabled applications and decision support tools that “facilitate competitive and collaborative interactions among buyers
and suppliers through the use of online negotiations, reverse (decreasing bid) auctions, and other related tools” (Engelbreth-Wiggans & Katok, 2006, p. 581).

Also so-called supplier relation management systems (SRM-systems) have been developed in the recent years. A set of SRM sourcing modules act as an interactive system designed to support purchasing managers in making effective decisions concerning supplier selection, contract management and contract compliance (Handfield et al, 2009).

A common sourcing process, sharing of systems and tools will facilitate cross-company communication and information sharing as stated above. The result is a more uniform sourcing process across companies, which will increase the efficiency of the process and increase sharing of know-how and skills across the business units. This is resulting in synergy of process which is presented below.

The use of a common sourcing system will reduce the coordination cost, thus making the total synergy effect larger. Also synergy is derived from the benefit of common working methods and sharing of information through the system. Such working methods could for instance be guidelines for supplier selection, templates to use for the bidding process and framework for calculating base line.

3.3 Synergy

According to the authors Goold and Campbell (1998) the word synergy is derived from the Greek word synergos, which means” working together”.

When the term is used in business, it usually refers to the ability of two or more business units or divisions to create higher value when working together than when working apart and separately (Goold & Campbell, 1998). According to the authors, synergy can take six different forms:

- **Shared intangible resources (know-how)** mean that synergy can be created from leveraging competencies and best practice and insights from a specific area, function or process. Such know-how may be written in manuals or procedures or could exist without formal and written documentation. Increased value could also be made just by making people with different background, skills and insight work
together with a problem, getting results that are better than when working separately when seeing the problem from new angles.

- **Coordinated strategies** mean that synergy is created from dividing up markets between units, coordination of competitor responses and reducing inter-unit competition.

- **Shared tangible resources** mean that synergy is created by sharing physical assets and resources. For instance, economies of scale can be reached by sharing a manufacturing facility or a laboratory. This could lead to higher capacity utilization rate, reduced fixed costs and reduced duplicated effort could be gained from such sharing of tangible resources.

- **Vertical integration** means that synergy is created by coordinating the flow of products and services from one unit to another. Such effort can reduce inventory costs, speed product development, increase capacity utilization and improve market access.

- **Pooled negotiating power** means that synergy is created by combining purchases in order to get better price, quality and terms with suppliers. Such negotiating power could also be used towards customers, governments and others.

- **Combined business creation** means that synergy is created by facilitating new businesses by combined know-how from different units, extracting certain and activities from various business units and combining them in a new unit.

This is a more general way of creating synergy out of business strategies of related businesses and not all is relevant for sourcing. Four of the six forms are treated more specifically for sourcing by the author Rozemeijer (2000).

The **vertical integration** is already specifically treated for sourcing and supply chain management by Goold & Campbell (1998) and Rozemeijer (2000) is not adding anything her. As supply chain management is not in scope of this research, such synergy is not treated in the further. As well for **combined business creation** no additional remarks is made by Rozemeijer (2000). The creation of new businesses is also regarded to be out of scope of the concept of sourcing and is not treated in the further.
For the *shared intangible resources*, Rozemeijer (2000) state that the business units can improve their results by pooling their insights into a particular process (by formulating sourcing strategies, applying state-of-the-art sourcing tools and techniques, developing skills and competencies and gaining access to world-class suppliers), function, or geographic area. Value is created by exposing one set of people to another. Sharing of intangible resources also can improve the sharing of information about product specifications, suppliers, purchasing procedures and supply market developments.

The *coordinated strategies* are in Rozemeijer’ (2000) opinion hard to reach. Aligning the strategies of two or more business units can be important source of synergy but it is not easy to get the right balance between corporate intervention and business unit autonomy.

*Shared tangible resources* can provide economies of scale and avoid duplicated effort by pooling sourcing specialists, purchasing information and communication systems, a corporate management group representing overhead, and/or office space and other facilities.

For *pooling negotiation power* Rozemeijer (2000) supplement the description of Goold & Campbell (1998) by stating that this is reached by combining the sourcing needs of several business units. In this way, the single business unit can gain greater leverage over the suppliers, reducing the cost or improving the quality of the deliveries.

By this discussion, Rozemeijer (2000, p. 7) arrives at a definition: *"purchasing synergy can be defined as the value that is added when two or more business units (or purchasing departments) join their forces (e.g. combined buying) and/or share resources, information, and/or knowledge in the area of purchasing"*. 

The definition is highlighting the more specific synergy forms of sourcing compared to the more general six forms elaborated by Goold & Campbell (1998). The synergy can by this be created by joined forces, shared resources, information and/or knowledge. This represents the initiatives that are taken to achieve the synergy as described in the chapter of coordination mechanism. For instance, shared resources will appear in the organizational structure and shared information will appear in process, systems and tools.
The synergy of the coordination is represented by the higher value achieved when working together rather than apart. The results can be classified into three categories according to Faes et al, (2000):

- **Economies of scale** which is a lower unit price, lower cost by standardization, better quality and lower overhead (Faes et al, 2000; Arnold, 1997). The economies of scale also include shared tangible resources represented by shared (pooled) sourcing specialists resulting in making use of less human resources.

- **Economies of information and learning** which is result of higher quality and plans (Goold & Campbell, 1998). This related to sharing the intangible resources as described by the authors above. This means sharing knowledge on suppliers, new technology, markets, internal users, applications and preventing incompatible negotiation strategies (Faes et al, 2000). In addition, this synergy involves less duplicated effort by for instance joint planning and pooling of insights.

- **Economies of process** which is the higher value created by a common way of working, sharing procedures and systems, making the work more efficient and standardized (Rozemeijer, 2000; Van Weele, 2010). This also involves benchmarking procedures and results, and joint training and development (Faes et al, 2000).

### 3.4 Summary of theoretical framework and model for analysis

The theory chapter has provided the research with a theoretical reference framework. The framework consists of the concepts of sourcing, coordination mechanisms and synergy. The theory part of sourcing and coordination mechanism are used in order to answer the first research question of how sourcing is coordinated in related diversified firms. The theory has established that the coordination mechanisms in fact are a part of the sourcing concept, described as sourcing management. These mechanisms thus are a part of the management surrounding the sourcing activities.

Sourcing activities are divided into three categories; sourcing strategies, category and supplier management, and sourcing processes. There is no distinct line between these
categories, but rather the same activates are often done in different context.

A sourcing strategy could be made for the overall expenditure of the related diversified firm, for the business unit level, for the category level and finally for the specific item involved in a sourcing process. The same applies for supply base management and supplier relationship management.

Coordination mechanisms presented are organizational structure, management control system and process, systems and tools. Organizational structure is operationalized to include centralization, decentralization, hybrid organizational structure and sourcing teams. Management control system is operationalized to include planning, and cost and accounting. The last is operationalized to address sourcing process, systems and tools used in the sourcing process and department.

Synergy is described in general and more specifically for sourcing. Three forms of synergy are identified; economies of scale, economies of information and learning and economies of process.

The analysis will compare the empirical findings with the theoretical framework to address the research questions of how sourcing is coordinated in order to create synergy. The empiric will reveal what coordination mechanisms in each category that are used, what combinations of coordination mechanisms that are used, if they are voluntarily based or based on giving decision-authority to a liaison or formal department. From the empiric, the type of synergy and the strength of this synergy are assessed by the case companies. This will provide the answer to the second research question of what kind of synergy that is created from the coordination.
The research is conducted in accordance with the following model for analysis:

**Figure 5: Model for analysis (own creation)**
4. EMPIRIC FINDINGS

The empirical data collection was done in three case companies. The data is presented per company starting with a short introduction, then describing the sourcing activities, organizational structure, management control and process, systems and tools. Finally, the case companies’ assessment of the value of the synergy is presented.

In the following the empirical findings in the three case companies are presented. Case company 1 is Telenor Norway, case company 2 is Avinor and case company 3 is Statkraft. All the case companies are operating in the utility industry in Norway.

4.1 Case company 1: Telenor Norway

4.1.1 Short introduction of Telenor

Telenor Norway is a part of the Telenor ASA Group, a worldwide company operating in the telecom industry. According to the Annual Report (2011), main operations of the Group’s are concentrated in three geographic regions: The Nordics, Central and Eastern Europe, and Asia. In these regions, the Group has mobile operations in 11 countries. In addition, the Telenor Group has an economic stake of 31.7% in VimpelCom Ltd., which operates in 19 markets. The operations in Norway, Sweden and Denmark offer fixed telecommunication services in addition to mobile services. The third core business includes Telenor Broadcast operating in the Nordic market for TV services and satellite broadcasting. In the Annual Report (2011), it is stated that Telenor ASA had total revenue of 98.5 billion NOK (Norwegian kroner), with an operating profit of 10.4 billion NOK in 2011. Total spend in the Telenor Group is 35 billion NOK. Telenor Norway is situated in Oslo and is running the Norwegian operations of the Group. The business unit has approximately 4800 employees.

4.1.2 Sourcing in Telenor

According to the Sourcing Director (2012), Telenor Norway has a high expenditure of 11 billion NOK and has been focusing on maximising the value of this expenditure. The sourcing activities are continuously developed, and are even planned to be taken into the next step in the near future. The latest development is directing the focus from purchasing to sourcing, meaning for instance focusing more on supplier management and
development. This means that supplier relationship management is now performed across the business unit and divisions. The Sourcing Director (2012) state that the performance of the supplier is now measured with regards to the total expenditure including all divisions at a single point of contact. The sourcing professionals are conducting the meetings with the suppliers, coordinating the follow-up on behalf of all business units. Also analysis of what supplier to use for specific categories and how much they should be used are developed. In addition, more strategic considerations are done by involving the sourcing specialists, like decision support for make-or-buy decisions. The sourcing professionals have been selling their services with success which has given access to a broader and more strategic way of working with sourcing. A third initiative in a more strategic focus is increased use of collaboration models with the suppliers in order to share profit and losses.

Telenor ASA Group is also at the moment considering a corporate model that consists of all the Telenor operations world-wide (Sourcing Director, 2012). If this decision is taken, all of the sourcing professionals in Telenor Norway will report directly to the corporate sourcing director. They will still remain as one unit serving the Norwegian expenditure, but some categories of spend will be lifted and controlled globally.

When considering what categories to source globally, both local market conditions, homogeneity of specifications and needs are considered (Sourcing Director, 2012). These categories will be developed with global sourcing strategies executed by resources across the countries. Still, the implementation and ordering is going to be performed locally. In order to succeed with a global sourcing strategy, the technology resources must be enforced in order to be able to harmonize specifications across the units and standardization has to be done.

A decision of global sourcing will provide the sourcing team with more authority connected to specifications (technology) by reporting to the sourcing director rather than the division director. Also more understanding of how the other countries are sourcing a specific category and the gain of pooling volume will be achieved (Sourcing Director, 2012).
4.1.3 Organizational structure in Telenor

Telenor Norway is organized in divisions, having responsibility of different segments of the market in Norway. The organization chart is drawn as follows:

![Telenor Norway organizational chart](image)

The sourcing department is situated in the technology division. This division is responsible for long-term and strategic planning and development of the company’s services, platform, networks and information system structures. The division is also responsible for safety related to technology, solutions and supply chains. The division has 1100 employees (Annual Report, 2011).

According to the sourcing director, the organizational position of the sourcing department was the result of a restructuring initiative of the sourcing activities one year ago. The need to be closer to the technical resources and thus the providers of specifications was the background for the change. Sourcing of ICT was included in the sourcing department during this restructuring process.

In the sourcing department there are 50 employees, which are divided in four different areas shown below (Sourcing Director, 2012):

![Telenor sourcing department](image)
The department is controlling approximately 5-6 billion NOK of the total spend of approximately 11 billion NOK in Telenor Norway. Of the remaining spend, approximately 2.5 NOK is roaming which is a non-controllable spend. The rest is spend that is sourced locally at other divisions (Sourcing Director, 2012).

The sourcing professionals are mainly located in the centrally located sourcing department, but some sourcing professionals are even located in business units. In the future, also the sourcing professionals of the remaining companies and divisions will be brought and centralized into the sourcing department.

The sourcing strategy and policy is both provided from the group Telenor ASA and from Telenor Norway. Group sourcing is described as one of the most important areas in increasing the operational excellence according the Group CEO Baksaaas (2012). The policy of Telenor Norway is providing general principles of how to perform the sourcing processes, which systems that should be used and the decision authority (Sourcing Director, 2012).

4.1.4 Management control in Telenor

According to the Sourcing Director (2012), the sourcing department is involved in the planning and budgeting process of the sourcing processes planned for the coming year. The sourcing department is to be consulted for all planned sourcing activities over 1.5 million NOK. In some cases, the sourcing process is left to the division and in other situations the sourcing department is serving the divisions with sourcing professionals. The prioritizing and selection is done by the Sourcing Director. In order to be more informed about needs and priorities, the Sourcing Director participates in the executive meetings in the divisions.

According to the Manager of Sourcing IT Applications (2012), the ERP-systems are mostly standardized in Telenor Norway and are providing a common spend cube for the corporate expenditure. However, the chart of accounts is complicated and has developed over many years. In order to develop the spend cube for the corporate level, hundreds of rules are developed to categorize spend into the right category.
4.1.5 Process, systems and tools in Telenor

Telenor Norway does not provide the business units and divisions with a common sourcing system (Manager Sourcing IT Applications, 2012). However, a common contract system is used across the businesses. This is only used as an archive system and not as decision support system. The system is mandatory to use by policy statement for the divisions. The sourcing practice is shared through a common sourcing portal on the Telenor Intranet. This portal provides guidance, policies and framework of how to perform the sourcing activities (Manager Sourcing IT Applications, 2012). In this way, the sourcing professionals across the divisions perform the sourcing activities in the same manner. For instance, a common rule is to ask at least 3 suppliers to participate in tender competitions.

4.1.6 Synergy in Telenor

The synergy is measured on a scale from 0 to 4; where 0 is no synergy, 1 is low value, 2 is medium low value, 3 is medium high value and 4 is high value. In the following table, the answers from Telenor are presented:

<table>
<thead>
<tr>
<th>Synergy category</th>
<th>Description</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economies of scale</td>
<td>Pooling negotiation power by performing sourcing together getting lower unit price, increased quality or increased standardization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Economies of information and learning</td>
<td>Sharing of know-how taking benefit of cross-company competencies and knowledge of suppliers and markets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Economies of process</td>
<td>Process synergy by sharing common way of working, using common developed templates and IT-systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Economies of scale</td>
<td>Shared resources making use of less human resources in total across business units</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Economies of information and learning</td>
<td>Reducing duplicated effort thus reduced time on sourcing activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Table 6: Synergies in Telenor
4.2 Case company 2: Avinor

4.2.1 Short introduction of Avinor

According to the Annual Report (2011), Avinor has two primary business areas. First there is the operation of a nationwide network of airports and second the national air navigation service for civilian and military aviation. This comprises 46 airports, 12 control towers, control centers and other technical infrastructure for safe flight navigation. The goal of the company is to facilitate safe, environmentally friendly and efficient aviation in all parts of the country. The corporate model is to manage the business units and divisions financially as a single unit, which means that the profitable airports are financing the unprofitable airports. The company also tries to generate revenue from surrounding services like airport hotels, car parks, duty free shops, food and beverage services and other services for air passengers. The air navigation service is self-financed through fixed pricing for its services. The company is fully owned by the Norwegian State.

4.2.2 Sourcing in Avinor

According to the Purchasing Manager, sourcing activities are important for Avinor. The total spend of approximately 4 billion NOK is both important for the profit but also for safety issues. A third important corporate issue is the reputation risk of sourcing activities both in terms of the risk of financial irregularities, non-appliance with public rules and issues regarding environment, human and labor rights in low cost countries. Of this reason, sourcing is a part of the corporate strategy. In Avinor there is a strong culture regarding safety and this is governing and giving premises for the overall strategies and governance in the corporation.

The expenditure is divided into 16 categories which is mostly common amongst the divisions. The exception is air safety which is bought mainly by the air safety division and represents the second largest spend category. According to the Purchasing Manager, the total expenditure in 2010 was 4178 MNOK.
In the table below, the largest categories of the total spend of 2010 is presented:

<table>
<thead>
<tr>
<th>Spend categories</th>
<th>MNOK</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>2099</td>
<td>50</td>
</tr>
<tr>
<td>Airport safety</td>
<td>859</td>
<td>21</td>
</tr>
<tr>
<td>Air safety equipment</td>
<td>276</td>
<td>7</td>
</tr>
<tr>
<td>ICT and telecom</td>
<td>176</td>
<td>4</td>
</tr>
<tr>
<td>Other services (terminal services, operating services)</td>
<td>138</td>
<td>3</td>
</tr>
<tr>
<td>Rolling stock</td>
<td>137</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 7: Avinor spend categories in 2010

According to the Purchasing Manager (2012), each of the 16 categories is managed by a category manager located in the sourcing department. The category manager is responsible for knowing the market inside this category and performs market analysis. They are required to know the user environment and maintain a relation towards the users. In addition, they should know the products involved and develop category strategies on the basis of their knowledge of market structure, needs, suppliers and products.

4.2.3 Organizational structure in Avinor

The Annual Report (2011) state that Avinor consists of 5 divisions where 3 of them comprise different number and types of airports. OSL is established as a limited company under the mother Avinor Group. The other two airport divisions are the divisions for large airport (3) and the division for regional and local airports (42). Oslo Airport (OSL) is accountable for 50% of the total revenue and a significant portion of the profit and is a key source of funding the rest of the airport structure (Avinor, 2011).

The Avinor organizational structure is presented in the figure below:

Figure 8: Avinor organizational structure
The sourcing department is located in the competence centre where all common used competencies like sourcing, ICT, legal and administrative services are gathered. The competence centre manager is reporting to the CFO in corporate staff (Purchasing Manager 2012).

In addition to the Purchasing Manager, the sourcing department comprise 6 sourcing specialists who also operate as category managers. These sourcing professionals are the shared resources of two of the divisions; the large airport division and the division of regional and small airports. The air safety division has its own sourcing professionals and so has Oslo Airport (OSL). Sourcing professionals in the competence centre are handling the corporate sourcing processes of the whole group, and in addition serving the two airport divisions with sourcing specialists for local and single-occasion sourcing needs (like investments). The two other divisions are voluntarily joining the corporate agreements as it suites them.

The sourcing policies and procedures are made by decisions in the executive board. However, even if these policies are made from corporate level they are regarded as voluntarily to follow by the business units. The central sourcing department and general management are working to increase the loyalty and compliance of these policies (Purchasing Manager, 2012).

Sourcing decisions and authority is decentralized, meaning that besides the central negotiated framework agreements, the sourcing decisions are taken locally. The frameworks agreements are made mainly on indirect spend like office supply, cleaning and work wear. The two divisions with shared sourcing professionals decide when to include them in their local sourcing processes, and no joint sourcing processes are performed of such needs.

The centrally coordinated sourcing processes are performed with cross-functional and cross-company teams (Purchasing Manager, 2012). The responsibility of the different participants is defined by roles. The final decision on which supplier to conclude the agreement with is not clearly stated. However, the public tendering process gives limited possibility to decide this as the award matrix defines the best offer at the end of the sourcing process. The exception from this practice is the ICT sourcing decisions where
the ICT department have decision authority. For the other, a suggestion is made for the budget owner who makes the decision.

The central sourcing department is managing this portfolio of agreements and is making sure that they are renewed and sourced by coordinating the cross-functional and cross-company sourcing teams. The sourcing department is having service level agreements with its internal customers stating what kind of services and response time that could be expected. According to the Purchasing Manager, the sourcing professionals are included on request and the resources are scaled after the demand they see. Normally, such requests should be posed 10 weeks before the sourcing processes commence but this is not adapted in practice. Rather the sourcing professionals are included at short notice and late in the process.

4.2.4 Management control in Avinor
The divisions have a corporate budget process where the budgets are proposed and prepared locally, then decided at corporate level. Also investments are treated in this manner. For short-term planning of the sourcing activities (sourcing processes) there is a shared plan managed by the sourcing department for the central negotiated agreements. The plan is showing the agreements that expires during the year and who are the responsible sourcing professional.

A common ordering (purchasing) and invoicing system is implemented. This system would provide a spend cube if all orders are made through the system. That is not the case so the spend cube must be developed with a large amount of rules categorizing spend from the accounting system and other sources (Purchasing Manager, 2012).

4.2.5 Process, systems and tools in Avinor
Avinor has implemented a common and standardized sourcing process for all divisions. All the methods and framework used to conduct the sourcing process is provided to the divisions through a purchasing handbook containing all guidelines and methods. This is done in order to standardize the way of working and to learn from best practice.

Avinor has not implemented a common sourcing system to facilitate and provide decision support in the sourcing process. To share the contracts that are negotiated a module in the archive system is used across the divisions. To access the contracts permission must be
granted on individual level. The corporate agreements are presented on the sourcing portal on the Intranet.

The common developed procedures, guidelines, methods and framework is implemented when suitable for the divisions not served by the central sourcing department.

4.2.6 Synergy in Avinor

The synergy is measured on a scale from 0 to 4; where 0 is no value, 1 is low value, 2 is medium low value, 3 is medium high value and 4 is high value. In the following table, the answers from Avinor are presented:

<table>
<thead>
<tr>
<th>Synergy category</th>
<th>Description</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economies of scale</td>
<td>Pooling negotiation power by performing sourcing together getting lower unit price, increased quality or increased standardization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
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<td>Sharing of know-how taking benefit of cross-company competencies and knowledge of suppliers and markets</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Economies of information and learning</td>
<td>Reducing duplicated effort thus reduced time on sourcing activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Table 8: Synergies in Avinor

With the corporate coordination of sourcing processes the negotiation power is increased through higher volume offered to the market. In Avinor the economies of scale of such pooling is not measured in the past, but in the future budgets and action plans this is planned to account for total savings of 40-50 million NOK.
This is the reason that Avinor is evaluating the economies of scale by pooling negotiating power to be high (by assessment, not by concrete measurement). Included in this is also the benefit of reduced internal transaction costs by handling several suppliers across the divisions for the same commodities (Purchasing Manager, 2012).

The economy of information and learning is assessed high in Avinor. The centrally located sourcing department facilitates for sharing knowledge, best practice and increases the quality of the sourcing processes. Another important effect of a central sourcing team is that it is much easier to implement actions to develop and implement improvement programs in the sourcing activities.

When it comes to the economies of process, a high value cannot be seen in this area. Even if a common sourcing process along with working methods is developed by the central sourcing department, this is not implemented and taken into use in a broad scale. According to the Purchasing Manager (2012), such synergy is thus not seen fully yet.

The sourcing professionals are not able to handle the entire requests and are not having the resources to serve all the needs of the divisions of large and regional/local airports. Of this reason, the sourcing professional could not be reduced even though common sourcing processes are conducted on the indirect spend at the corporate level. The synergy of less human resources in sourcing is thus not present.

4.3 Case company 3: Statkraft

4.3.1 Introduction to Statkraft

According to the Annual Report (2011), Statkraft is a Norwegian based company producing power and renewable energy. The company is operating in 20 countries with more than 3400 employees. Total revenue was 22 billion NOK with an operating margin of approximately 6 million NOK in 2011. The company is fully owned by the Norwegian state.

The Annual Report state that hydropower is the traditional business area that has been developed over more than hundred years. This is also the largest division, representing near 90 % of the revenue. The other business areas consists of wind power, district heating and some research and development areas within renewable energy.
4.3.2 Sourcing in Statkraft

The most important areas in Statkraft are maintenance of existing production capacity and creation of new production capacity (Category Manager Civil). In the first area even big construction work and total renewal of existing capacity are included. In both areas the main categories are civil works (construction, operation, maintenance or demolition) whereas the most important categories are construction and mechanic/electro. Other important categories at corporate level are technical consultants and indirect spend. The last category comprises sub-categories like travels, ICT-services, office supply, tools and workwear. The sourcing department makes these agreements and are offering them to the divisions for ordering through the purchasing portal. Other categories are managed at regional level.

4.3.3 Organizational structure in Statkraft

The corporate organization is organized as follows:

![Figure 9: Statkraft organizational structure](image)

According to Category Manager Civil (2012), the corporate sourcing department is reporting to the CFO in corporate staff, and the department consist of 17 sourcing professionals. Six are category manages, five are sourcing specialists, three in systems and tools and two are change agents. In addition to the corporate sourcing department, there are six regional sourcing professionals.

The sourcing is mainly done through projects where sourcing professionals is playing an advisory role (Category Manger Civil, 2012). The sourcing professionals are divided in two categories; the ones that support the projects in performing the sourcing processes and the ones that operates as category managers. The last group works across the projects and the divisions in order to gain benefit from knowledge in markets, suppliers and
methods across the units. To some extent, these are also involved in supplier development and supplier relationship management (SRM). The use of the knowledge of the category manager is voluntarily across the divisions. The strategy of the Category Managers is to be early involved when project strategies are developed in order to affect the sourcing strategies by making use of the cross-unit knowledge and best sourcing practice.

The sourcing specialists are providing ad hoc support during the sourcing process to the project organizations. However, the sourcing specialists are authorized to approve prequalification of suppliers when the sourced amount exceeds 10 million NOK. Also, when public procurement legislation is not followed, the sourcing specialists could advise the management to stop a particular sourcing project (Category Manager Civil, 2012).

4.3.4 Management control in Statkraft

The projects are decided at corporate level each year based on an investment plan which is made available for the sourcing department. The corporate coordination of sourcing processes is voluntarily and the sourcing specialists are demanded if needed by the project organizations. The projects are making its own governance structure, organization structure and are staffed with the necessary personnel based on the scope and complexity of the projects. The category managers is reviewing the plan and is making their own decisions on which projects to work on based on the potential for creating value of the corporate coordination (Category Manager Civil, 2012).

The spend cube of transactions within the purchasing module in the ERP-system is recorded and presented in across the divisions. This represent 50 % of the expenditure spend. The other spend is not recorded and transactions are categorizing by a set of rules (Manager, Procurement Systems and tools, 2012).

4.3.5 Process, systems and tools

The use of common methods, procedures and guidelines is managed by the systems and tools section located in the corporate sourcing department. According to the Manager, Procurement Systems and tools (2012), these sourcing personnel have the goal of systematizing and making the sourcing activities more professionally conducted. They are responsible for the purchase order systems, like the ERP-system, the web portal and other order systems. In addition, some process and decision support is provided by the
sourcing webpage on the Intranet. This webpage is providing templates for tender documents and a common sourcing process model.

The systems and tools manager is also responsible for cross-divisional training and systemizing knowledge.

4.3.6 Synergy in Statkraft

The synergy is measured on a scale from 0 to 4; where 0 is no value, 1 is low value, 2 is medium low value, 3 is medium high value and 4 is high value. In the following table, the answers from Statkraft are presented:

<table>
<thead>
<tr>
<th>Synergy category</th>
<th>Description</th>
<th>0</th>
<th>1</th>
<th>2</th>
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</tr>
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<tbody>
<tr>
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<td></td>
<td></td>
<td>X</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Table 9: Synergies in Statkraft

The economies of scale related to bundling and pooling of negotiation power in construction is not high due to the nature of such projects. Often, these projects are large and complex, spread through a geographical area and economy of scale often is not possible since every project is unique.
Some bundling effect can be seen through the reduction of supplier relations and contract follow up, thus a reduction in internal transaction cost. When buying for instance turbines in the mechanic area, pooling the sourcing needs would have greater effect since the number of suppliers is few worldwide. Even though turbines are bought seldom in each business unit, bundling of such needs would give an effect of the total price (Category Manger Civil, 2012).

Economies of information and learning are assessed to be medium high. The work done by the Category Managers, using their know-how across business units in different projects is related to this synergy. As an example, for the 2012 the category manager of civil has the goal of achieving 50.5 million NOK in savings of a total expenditure budget of 1.3 billion NOK by using his best-practice knowledge across business units and projects. Also some bundling of the projects is planned to be done for reaching the target. Each of these initiatives is representing approximately an equal amount of the savings (Category Manger Civil, 2012).
5. ANALYSIS

In the analysis, the theoretical framework is compared with the empirical data in order to provide answers to the research questions. The analysis comprise a discussion of the case companies sourcing activities and how these are coordinated by organizational structure, management control and process, systems and tools. Finally, the synergy resulting from this coordination is presented and discussed.

The analysis is conducted with the theoretical analysis model presented in chapter 3 applied on the empirical data that is collected from the case companies presented in chapter 4.

5.1 Sourcing in the case companies

From theory, it is showed that the concept of sourcing has gone through a development over the years and that a more strategic perspective is made (Axelsson et al, 2005; Handfield et al, 2009; Van Weele, 2010). According to these authors, the activities within sourcing have developed towards more than just purchasing and buying. A more strategic, horizontal and cross-functional approach has developed with the use of sourcing teams, category management, supply base management and supplier relationship management (Cousins et al, 2008; Handfield et al, 2009; Van Weele, 2010).

5.1.1 Sourcing strategies

In all case companies, there is an overall sourcing strategy or policy, and sourcing is assessed to be important for the overall business performance. In Avinor sourcing is a part of the corporate strategy, mainly due to the importance it has on safety. In Telenor, sourcing is one of several areas of importance for competitiveness and cost efficiency (Baksaas, 2012). In Telenor, the sourcing department have gained influence internally and has recently contributed with support in strategic make-or-by decisions. In Statkraft, due to the high investment rate the construction projects and sourcing within these projects are significant for the financial results. All of the three case companies have identified sourcing as a strategic important area of business and is trying to increase the overall value of the work done in the sourcing area.
Thus, all the case companies have identified sourcing as a strategic area for competitiveness and cost performance according to Cousins et al (2008).

5.1.2 Supplier and category management

Supplier relationship management and category management is done both when planning, developing strategies and in sourcing processes. In this context, the activities is of a horizontal and cross-company nature as specified when developing category strategies, analysing the overall spend and managing suppliers as described by Handfield et al (2009), Englyst et al (2008) and Van Weele (2010). In Telenor, strengthening the supplier relationship management has been emphasised. Supplier relationships are managed in the sourcing department on behalf of the all business units doing business with the particular supplier and for all projects that the supplier has in Telenor. The supplier relationship management is by this taking a horizontal view and assessing all commitments, deliveries and project that a single supplier has with Telenor. This increases the bargaining power and is improving the quality of the deliveries from a particular supplier towards Telenor, as described by Handfield et al (2009). Telenor has as well started to assess collaboration models with suppliers, for instance exploring profit sharing models in order to have stronger commitment from the suppliers in important areas.

In Avinor, there has been appointed category managers that are responsible for having knowledge of markets, suppliers and user environment of Avinor. The category management is thus in accordance with the author Van Weele. This knowledge is used in the sourcing processes across the two divisions that the sourcing department serves. However, the category managers are mainly working as sourcing specialists in the sourcing processes.

In Statkraft, the emphasis has been both on category management and supplier relationship management. The category managers appointed in the sourcing department are not serving the projects as sourcing specialists, but are operating across projects with their knowledge on suppliers, markets and products. Also supplier relationship management of large categories is the responsibility of the category managers. Meetings and supplier conferences are facilitated by the category managers regularly.
5.1.3 Sourcing processes
All of the companies have defined the sourcing process similar to the process presented in the theory chapter by Handfield et al (2009). The sourcing process is performed with cross-functional participation from different departments and business units. The sourcing processes are applied both in the sourcing processes coordinated from the sourcing department, but also is applied when sourcing is performed locally at divisions or business units.

5.1.4 Summary of sourcing activities in the case companies
In the case companies, a similar development toward a more strategic direction in sourcing activities can be seen. All case companies have a strategic, horizontal and cross-functional approach on the sourcing activities. The sourcing activities in the case companies are summarized in the table below.

<table>
<thead>
<tr>
<th>Sourcing</th>
<th>Telenor</th>
<th>Avinor</th>
<th>Statkraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy</td>
<td>High importance</td>
<td>High importance, part of corporate strategy</td>
<td>High importance</td>
</tr>
<tr>
<td>Supplier and market management</td>
<td>Recently developed, focus on supplier relationship</td>
<td>Category sourcing specialists</td>
<td>Focus on category management and supplier relationship</td>
</tr>
<tr>
<td>Sourcing processes</td>
<td>Defined sourcing process</td>
<td>Defined sourcing process</td>
<td>Defined sourcing process</td>
</tr>
</tbody>
</table>

Table 10: Sourcing activities in the case companies

In the table it is showed that all case companies are working in all three levels defined for the sourcing activities.

5.2 Organizational structure in the case companies
5.2.1 Coordination by organizational structure
According to Handfield et al (2009), organizational structure refers to where the organization places its decision-making authority. Also, it implies where the sourcing department is located in the organizational charts (Anthony & Govindarajan, 2007).

Coordination by organizational structure is defined by how the firm communicates and integrates decision-making processes across the groups and business units (Handfield et
al, 2009). Mintzberg (1991) presents six basic coordinating mechanism of which two are relevant for coordination by organizational structure. The first, direct mutual adjustment involves coordination of work by a simple process of informal communication. The second, direct supervision, involves coordination by one person giving orders to others. Four organizational structures; centralization, decentralization, hybrid structure and sourcing teams has been presented and addressed in respect to the coordination mechanisms describe above.

5.2.2 Decision-making authority

Decision-making authority is addressed with respect to the activities in sourcing; the strategy, the supplier and category management and the sourcing processes.

5.2.2.1 Strategy

Telenor has a centrally developed strategy which is valid for the organization that is traditionally organized as divisions in the company. However, the companies that are organized as limited companies are determining their own sourcing strategy or policy. Strategic decisions like make-or-buy decisions are decided by division managers, but with support from the sourcing professionals.

Avinor has a centrally developed sourcing strategy which is decided by the corporate management. This strategy applies for all business units. Also, other strategic decisions are made by the line or corporate managers.

Statkraft has a centrally decided sourcing policy developed by the sourcing department. However, often the projects related to production capacity are so large that they have their own strategy and governance structure.

5.2.2.2 Supplier and category management

The nature of the tasks involved in supplier and category management is mainly analytical and coordinative tasks, and does not require decision-making to a large degree. According to theory, such tasks involves conducting spend and market analysis, follow up suppliers on performance measures and analysis of the supplier base (Handfield et al, 2009; Van Weele, 2010).
However, decisions on pooling sourcing needs together in one sourcing process are made on basis of these analyses which for instance is resulting in category strategies (Englyst et al, 2008).

In Telenor, the supplier relationship management is handled by the sourcing department, taking care of the management of suppliers in a cross-company horizontal manner. The decision-authority is connected to deciding the frequency of the meetings, what executive level they should be on, and analyzing the performance in order to make a strategy towards the meeting with the suppliers.

In Avinor, the supplier and category management is mainly conducted in the sourcing processes. For the corporate agreements however, the sourcing department is maintaining the existing agreements, renewing them when necessary. In this sense, the sourcing department makes decisions regarding the pooling of these needs.

Statkraft is using market, product and supplier knowledge in projects across divisions and business units by appointing category managers. There is no decision-making power related to these activities. When it comes to supplier relationship management, the category managers are having supplier information meetings. Pooling of sourcing needs is not giving substantial effect in the market since the projects often are large, with unique requirements and geographically spread. The market does not respond to bundling of volume like described by Van Weele (2010). However, some bundling is made for categories where such bundling gives an effect.

5.2.2.3 Sourcing processes

The sourcing decisions comprise deciding the sourcing strategy for the specific item sourced, the requirements and specifications for the item, the choice of single or multiple supplier relations, contract conditions and finally the choice of supplier (Van Weele, 2010; Handfield et al, 2009).

The sourcing professionals in the case companies are all playing an advisory role in the sourcing processes of direct spend. For the indirect spend, the situation is different because they according to the case companies lack a specific owner. Some of these sourcing decisions are taken centrally.
5.2.2.4 Summary of decision-making power

The decision-authority of sourcing is neither fully centralized nor decentralized. According to Handfield (2009) the decision-making authority could vary with the task (strategic tasks centralized and operational tasks decentralized). This seems to be the situation in the case companies, where the strategy mainly is centralized while the sourcing decisions mainly are decentralized.

The findings are summarized in the following table:

<table>
<thead>
<tr>
<th>Sourcing activities</th>
<th>Decision-authority</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Telenor</td>
</tr>
<tr>
<td>Strategy</td>
<td>Centrally decided but applies only for parts of the company</td>
</tr>
<tr>
<td></td>
<td>Avinor</td>
</tr>
<tr>
<td></td>
<td>Centrally decided and applied for all business units</td>
</tr>
<tr>
<td></td>
<td>Statkraft</td>
</tr>
<tr>
<td></td>
<td>Centrally decided and applied for all business units</td>
</tr>
<tr>
<td>Supplier and market management</td>
<td>Centralized for some of the categories</td>
</tr>
<tr>
<td>Sourcing processes</td>
<td>Decentralized</td>
</tr>
<tr>
<td></td>
<td>Mostly decentralized for direct spend, and mostly centralized for the indirect spend</td>
</tr>
<tr>
<td></td>
<td>Decentralized</td>
</tr>
</tbody>
</table>

Table 11: Decision-authority in the case companies

5.2.3 Location and responsibility of the sourcing department

The location of the sourcing department will determine whether a centralized, decentralized, hybrid or task force organizational structure is applied in the case companies (Handfield et al, 2009; Van Weele, 2010). The coordination mechanisms follow the structure as described by Mintzberg (1991).
5.2.3.1 Telenor

In Telenor, the sourcing department is situated in the technology division and this department is handling approximately 2/3 of the total spend. The rest is managed locally by the business unit themselves. Some sourcing professionals can also be found in the business units organized as limited companies. The sourcing department is serving the other business units with sourcing professionals, but can even decide to leave the sourcing processes to the business units themselves.

As Telenor Norway is a part of a larger group, a corporate sourcing department can even be found there. The sourcing processes takes place by cross-functional teams empowered to make decisions on supplier selection. The teams are coordinated by the sourcing professionals in the sourcing department.

5.2.3.2 Avinor

In Avinor the sourcing department is located in a shared service centre which is organized as a separate business unit in the company. The shared service centre is reporting to the CFO placed in corporate staff and a member of the management board. However, the sourcing department is just serving two of the four divisions. The remaining two divisions have their own sourcing professionals. According to the purchasing manager in Avinor, the direct expenditure of air safety is unique for that division. However, the expenditure of OSL is similar to the other airports organized in the different divisions and could be handled by the central sourcing department as well.

5.2.3.3 Statkraft

In Statkraft, the sourcing department is centralized at corporate headquarter in corporate staff. Statkraft also have regional sourcing personnel, thus a combined centralized and decentralized model.

5.2.3.4 Summary of location and responsibility of sourcing department

The case companies have all a centrally located sourcing department, however situated at different locations in the companies. This is combined with local purchasing professionals.

The case companies thus have a centralized model when it comes to the sourcing professionals, however situated in different locations in the corporations. Two is situated
in the divisions and one situated at corporate staff. However, the department’s decision-authority is quite similar.

The location of the sourcing departments is summarized in the following table:

<table>
<thead>
<tr>
<th>Location sourcing department and professionals</th>
<th>Telenor</th>
<th>Avinor</th>
<th>Statkraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centralized</td>
<td>Sourcing department in lead division</td>
<td>Sourcing department in shared service centre for two divisions, corporate agreement for all divisions</td>
<td>Sourcing department in corporate staff</td>
</tr>
<tr>
<td>Decentralized</td>
<td>Limited companies have own sourcing department.</td>
<td>Two divisions have own sourcing department</td>
<td>Regional sourcing professionals</td>
</tr>
</tbody>
</table>

Table 12: Location of sourcing department

The case companies have all shared sourcing department across divisions and business units, coordinating spend horizontally. However, in some cases the centrally located sourcing department does not span all the business units, and also some regional and business unit sourcing departments can be seen.

5.2.4 Classification of organizational structure

The classification is done on the basis of the location of the decision-making authority and the location of the sourcing department.

In Telenor, the sourcing professionals are gathered in the sourcing department located in the lead division. This is by the nature a hybrid organizational structure like the lead division buying. However, instead of having sourcing professionals in every business unit and taking turns in being the lead division buying, the Telenor model also implies shared sourcing professionals like in the hybrid organizational structure of Centre-led action networks.
This model implies that sourcing takes place in fully empowered decentralized units, but with the functional excellence managed from the corporate centre as described by Handfield (2009).

In Avinor, the sourcing department is located at the shared service centre for two of the business units, while two other business units have their own sourcing department. However, the shared sourcing department is functioning like a corporate sourcing department as well being shared by the two divisions.

The sourcing department is pooling the sourcing needs of indirect spend for all the business units. For the direct spend of the two divisions, the sourcing professionals are shared resources playing an advisory role in the sourcing processes. Thus, this hybrid organizational structure has many similarities with the corporate purchasing council structure described by Handfield et al (2009) and Rozemeijer & Wynstra (2005). In such a structure, there is a purchasing council comprised of a group of buyers who purchase similar items at various locations, coordinated from a small central unit.

In Statkraft, the sourcing department is also both centrally located but with some additional sourcing professionals dealing with the local needs. The sourcing specialists are playing an advisory role, not having decision-making authority in the sourcing processes.

By this, the model of Statkraft has many similarities to the hybrid organizational structure “global buying committees” described by Handfield (2009). By having a global buying committee where the actual sourcing is taking place in fully empowered decentralized units (the projects) and the functional excellence of sourcing is managed from the corporate centre.
The classification of the organizational structure is summarized in the following table:

<table>
<thead>
<tr>
<th>Organizational structure</th>
<th>Telenor</th>
<th>Avinor</th>
<th>Statkraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision-making authority</td>
<td>Centralized for strategic and management issues, decentralized for decisions in sourcing processes</td>
<td>Centralized for strategic issues and for pooling of sourcing needs of corporate agreements, decentralized for business unit needs</td>
<td>Centralized for policy and some management issues, decentralized for decisions in sourcing processes</td>
</tr>
<tr>
<td>Location of sourcing department</td>
<td>Central sourcing department for divisions, some sourcing departments in limited companies</td>
<td>Corporate sourcing department, shared resources for two business units. Two divisions have own sourcing department.</td>
<td>Sourcing department in corporate staff combined with regional sourcing professionals</td>
</tr>
<tr>
<td>Classification</td>
<td>Centre-led action network</td>
<td>Corporate purchasing council</td>
<td>Global buying committees</td>
</tr>
</tbody>
</table>

Table 13: Classification of organizational structure

The case companies have all a combination of centralization and decentralization both when it comes to the location of the sourcing department and for the decision-making power. Thus, all case companies have a hybrid organizational structure. This corresponds to a study referred to by Van Weele (2010) showing that hybrid structures are the most common structure in use.

5.2.5 Coordination by organizational structure

All case companies are coordinating the sourcing activities by having a centrally located sourcing department gathering the sourcing professionals. Such a shared sourcing department will be in a position to accumulate volumes and quality from suppliers (Van Weele, 2010; Handfield et al, 2009). Also a more uniform and standardized performance across business units can be achieved (Handfield et al, 2009).
According to Handfield (2009), a shared and centralized sourcing department also has the ability to develop specialized knowledge and implement companywide change programs. This is stated by the Purchasing Manager in Avinor as an advantage of the corporate department. The development of specialized knowledge is seen in all case companies, where category managers develop specialized knowledge about product, markets and suppliers across business units.

However, since the responsibility and decision-authority of the sourcing processes is decentralized, the central sourcing department needs some more coordination mechanisms in order to pool and accumulate the volumes from the business units. In order to consider when to accumulating and pooling sourcing needs, horizontal planning processes and cost information are required. This is described under the section of management control systems. If not, the centrally sourcing professionals will not have information of the planned sourcing needs of the business units and will not be able to know what sourcing needs to accumulate or not.

Since the sourcing professionals are playing an advisory role in the sourcing processes, the coordination takes place by mutual adjustment according to Mintzberg (1991). The sourcing department and the sourcing professionals act as devised liaisons in taskforces represented by the sourcing teams. No direct supervision can be found in the sourcing processes.

Also some degree of decentralization can be seen in the case companies. Two business units in Avinor and some limited companies in Telenor are having their own sourcing departments. They are decentralized in the manner that they are operating on their own behalf, not coordinating their needs with the other business units except for some general corporate agreements. The risk of this situation is addressing the market with the same sourcing needs, not getting as favourable condition as possible according to the disadvantages of the decentralized organizational structure (Van Weele, 2010).
5.3 Management control systems in the case companies

The management control system is used to implement strategy (Anthony & Govindarajan, 2007). The case companies have all focus on sourcing as a mean to reduce cost and increase quality. As described above, in order to pool the sourcing needs across divisions and business units, a shared planning process is necessary.

5.3.1 Planning

The case companies are all having a joint planning process in connection with the budget and overall planning processes in the company. In Telenor, the sourcing department participate in planning the coming year’s expenditure and prioritize themselves where to participate. Avinor have a similar routine but also additional routines for how and when to request for the sourcing specialists to attend the sourcing processes initiated locally. In addition, the sourcing department in Avinor have their own planning process of the expenditure that is sourced commonly for all divisions. An example of this is the office supply that is managed at the central sourcing department. In Statkraft also a similar routine is followed, both for the sourcing specialists and for the category managers. However, the category managers cannot participate in all sourcing processes and is prioritizing participation by assessing the savings potential in the different projects.

5.3.2 Cost recording and accounting

The spend cube provides the detailed information necessary for strategy planning and decision-making (Driedonks et al, 2009). The cost recording is in all companies done in common ERP-systems used in the whole company. However, the spend cube is not generated automatically but is extracted with a large extent of manually work and rules for extraction. This is mostly caused by complicated charts of accounts developed over many years. This is both time consuming and results in a poor quality of the figures. The spend cube is important in order to develop category strategies, getting an accurate information when sourcing from the market (Handfield, 2009).

However, in some cases the account payable is sufficient to provide an idea of the total expenditure towards a particular supplier across the business units.
5.3.3 Summary of management control system

The planning and cost information is important when developing joint strategies for categories and their items, and when making decisions of accumulating and pooling sourcing needs.

The planning and cost accounting across divisions and business units in the case companies are summarized in the following table:

<table>
<thead>
<tr>
<th></th>
<th>Telenor</th>
<th>Avinor</th>
<th>Statkraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>Centrally led</td>
<td>Centrally led</td>
<td>Centrally led</td>
</tr>
<tr>
<td>Cost and accounting</td>
<td>Spend information only limited available</td>
<td>Spend information only limited available</td>
<td>Spend is partly available for spend that is done by purchase order (approx 50% of the spend)</td>
</tr>
</tbody>
</table>

Table 14: Management control in the case companies

The coordination that is done by the management control system is mainly done by a centrally led planning process where all divisions and business units are jointly planning the coming year’s expenditure and sourcing processes.

The cost and spend analysis are difficult and time-consuming to get and is not covering all of the business units or the total spend.

5.4 Process, systems and tools

5.4.1 Sourcing process

All case companies have developed standard sourcing processes that are provided to the organization in different ways. Written manuals, Intranet portals and ICT-systems are used in order to provide both the processes and guidelines to the sourcing specialists. The coordination by standard according to Mintzberg (1991) is thus high in the case companies.
5.4.2 Sourcing systems

The use of a common sourcing system differs amongst the investigated companies. Telenor is not providing a common system except from a contract system. They are using the Intranet for guidelines and tools. Avinor is using the archive system in order to provide the contracts and their conditions to the users. However, this is not a sourcing system as defined by Handfield (2009) presented in the theory chapter. Telenor is using a contract management system that could be used as a decision-support system, but has only taken the contract management part of the system in use.

Statkraft is also using the Intranet portal in order to support the performance of the sourcing process. The system is developed by Statkraft and is providing templates and other tools to the sourcing specialists.

None of the case companies have implemented supplier relation management systems (SRM-systems). Process, systems and tools are summarized in the following table:

<table>
<thead>
<tr>
<th></th>
<th>Telenor</th>
<th>Avinor</th>
<th>Statkraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>Standardized process</td>
<td>Standardized process</td>
<td>Standardized process</td>
</tr>
<tr>
<td>Systems</td>
<td>Not providing a sourcing tool but is using a contract management tool</td>
<td>Is not having a sourcing tool</td>
<td>Is using own developed sourcing tool on the Intranet</td>
</tr>
<tr>
<td>Tools</td>
<td>Provided on the Intranet</td>
<td>Developed in a sourcing handbook</td>
<td>Is provided by the sourcing system on the Intranet</td>
</tr>
</tbody>
</table>

Table 15: Process, systems and tools in the case companies

The coordination by standards are high in the case companies, and all of them is offering standardized sourcing processes, tools, guidelines and supporting methods to the sourcing professionals and sourcing teams. According to Van Weele (2010) and Handfield (2009) this secures a uniform and consistent performance across business units and facilitates the sharing of knowledge and know-how.
This is to a great extent facilitated by the centralized sourcing department, gathering the sourcing professionals in order to develop common procedures, guideline and best-practice performance (Handfield, 2009).

5.5 Synergy in the case companies

5.5.1 Synergy

According to Goold & Campbell (2008), synergy refers to the ability of two or more business units or divisions to create higher value when working together than apart. In sourcing this means the value that is added when two or more business units join their forces, share resources, information and knowledge in the area of purchasing (Rozemeijer, 2000).

In this thesis, such increased value has been categorized into three different forms; the economies of scale, economies of information and learning and economies of process (Faes et al, 2000).

The case companies were asked to 5 different synergies within these categories in accordance with assessed value of the particular synergy. The synergy was measured on a scale from 0 to 4; where 0 is no value, 1 is low value, 2 is medium low value, 3 is medium high value and 4 is high value.
5.5.2 Summary of case companies response

A summary of the answers from the case companies are showed in the table below:

<table>
<thead>
<tr>
<th>Synergy category</th>
<th>Description</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Summarized Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economies of scale</td>
<td>Pooling negotiation power by performing sourcing together getting lower unit price, increased quality or increased standardization.</td>
<td>Statkraft</td>
<td></td>
<td></td>
<td></td>
<td>Telenor Avinor</td>
<td>9</td>
</tr>
<tr>
<td>Economies of information and learning</td>
<td>Sharing of know-how taking benefit of cross-company competencies and knowledge of suppliers and markets.</td>
<td>Telenor Statkraft</td>
<td></td>
<td></td>
<td></td>
<td>Avinor</td>
<td>9</td>
</tr>
<tr>
<td>Economies of process</td>
<td>Process synergy by sharing common way of working, using common developed templates and IT-systems.</td>
<td>Avinor Telenor Statkraft</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Economies of scale</td>
<td>Shared resources making use of less human resources in total across business units</td>
<td>Avinor Telenor Statkraft</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Economies of information and learning</td>
<td>Reducing duplicated effort thus reduced time on sourcing activities</td>
<td>Telenor Avinor Statkraft</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

Table 16: Assessed synergy value in the case companies
5.5.3 Economies of scale

The economies of scale are represented by the reduced unit cost, increased quality, and standardization resulting from centralizing sourcing decisions and processes. In order to achieve higher value of centralizing and pooling sourcing needs, the requirements across business units needs to be homogenous and the supply market structure must be sensitive to volume (Van Weele, 2010). According to the author, also pooling of the sourcing needs is favourable when the power-balance between customer and supplier is determined by the volume offered.

Both Telenor and Avinor perceives the synergy of pooling negotiation power by performing joint sourcing processes across the divisions and business units as high (4). For Avinor, the reduced transaction cost by reducing the number of suppliers is included in this assessment. For the joint sourcing processes, Avinor has calculated a cost savings potential of 40-50 million NOK represented by lower unit cost and increased quality. Pooling sourcing needs in Avinor is favourable because the sourced categories and the requirements are homogenous across the three airport divisions.

It can be concluded that the case companies perceive that synergy exist of pooling negotiation needs when spend is homogeneous and the market is responsive to higher volume. Where there is a homogeneous spend, the synergy is assessed to be high (4).

Statkraft does not assess the economies of scale by pooling the sourcing needs as high. The reason for this is the unique requirements, geographical distance and the fact that the market does not necessarily respond to a higher volume. This is mostly relevant for the construction projects of production capacity.

However, some higher value of pooling sourcing needs can be seen regarding high value components as requirements are more standardized across the business units and the suppliers responds to higher volume to the market. Also, Statkraft assess the economies of scale represented by transaction costs to be present when reducing the numbers of suppliers.

A higher value and synergy represented by making use of less human resources in total across business units is not to be concluded. The answers from the case companies are spread in a manner that makes no general conclusion possible.
5.5.4 Economies of information and learning

Economies of information and learning refer to the higher value that is created of sharing intangible resources as described by Goold & Campbell (1998). This relates to sharing knowledge on suppliers, new technologies, markets, internal users, applications and preventing incompatible negotiation strategies across business units (Faes et al, 2000).

Such value can be created just by making people with different background, skills and insight work together with a problem, getting results that are better than when working separately when seeing the problem from new angles (Goold & Campbell, 1998).

The economies of information and learning are considered to be of medium low (2), medium high (3) and of high value (4) by the case companies. The can be concluded that this synergy is substantial and present in the case companies. All of the case companies are developing the horizontal coordination by the sourcing department’s trough category management, supplier relationship management and supply base management and by this leveraging the competence and know-how developed for markets, suppliers and products.

In addition, this synergy involves less duplicated effort by for instance joint planning and pooling of insights. This kind of effort could be sharing for instance market analysis and supplier performance evaluation reports, avoiding the business units to duplicate such work.

This effect is assessed to be medium low value (2) and to case companies assess it to be high (4). It can thus be concluded that economies of information and learning is present in the case companies, both from sharing of knowledge but especially from less duplicated effort and time spent on sourcing.

5.5.5 Economies of process

Economies of process which is the higher value created by a common way of working, sharing procedures and systems, making the work more efficient and standardized (Rozemeijer, 2000; Van Weele, 2010). This also involves benchmarking procedures and results, and joint training and development (Faes et al, 2000).

The case companies all assess that this kind of synergy is present. Avinor is giving the lowest score (2) and is explaining that the developed procedures and guidelines in the
sourcing handbook is not yet implemented and is of this reason not giving substantial effect. The other two case companies assess the value to be high (4). All the case companies have a standardized sourcing process with guidelines and framework presented on the Intranet, but just to a limited extend is common sourcing e-solutions implemented. Still, the synergy represented by economies of process is assessed to be high.

5.5.6 Summary of synergies in the case companies

Three forms of synergy are identified by theory and operationalized in five questions for the case companies as shown in the table. The case companies have assessed the strength of these synergies by giving them grades on a scale from 0 to 4, where 0 is no value and 4 is high value of synergy.

The result is summarized in the following table:

<table>
<thead>
<tr>
<th>Synergy</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economies of scale</td>
<td>When the requirements and sourcing needs are homogeneous and the market responds to a higher volume, the synergy of pooling are regarded as high amongst the case companies. The economies of scale represented by less use of human resources in sourcing activities cannot be concluded to be present by the answers from the case companies.</td>
</tr>
<tr>
<td>Economies of information and learning</td>
<td>Synergy of sharing knowledge and information are assessed to be present by the case companies. Also the less duplicated effort is of medium and high value.</td>
</tr>
<tr>
<td>Economies of process</td>
<td>The synergy of standardization of process and working methods are also considered of high value.</td>
</tr>
</tbody>
</table>

Table 17: Summary of synergies
6. CONCLUSION

The conclusion gives the essence of the answers provided by the analysis to the research questions and purposes of the thesis. The contribution made to knowledge building is presented along with suggestions for further research. Critique of the weaknesses of the thesis and areas of improvement are discussed at the end.

6.1 How is sourcing coordinated

The first research question is: “How is sourcing coordinated across business units in related diversified firms in the Norwegian utility industry?” Sourcing is coordinated across business units by centrally decided sourcing strategies defining overall goals and policy for the sourcing area. The related diversified companies in the utility industry have a hybrid organization structure for their sourcing activities, which combines the advantages of centralization and decentralization.

Sourcing is also coordinated by sourcing professionals and category managers operating as devised liaisons, coordinating the sourcing processes, supplier and market management horizontally across the business units. The coordination comprises pooling the sourcing needs of the business units when appropriate. The coordination is done by mutual adjustment as no decision-making power is given to the sourcing professionals. In order to coordinate the sourcing processes, coordination by joint planning and horizontally cost information across business units are facilitated.

Sourcing is also coordinated by sharing resources in a centrally located sourcing department. Centrally located sourcing professionals are coordinating sourcing by standardization of process, providing procedures and guidelines for a coordinating the business units into a common and uniform way of working. To some extent, also systems are shared across units.

6.2 Synergies created of coordination

The second question was “What kind of synergies is created of this coordination?” All three forms of synergy can all be found in the related diversified companies in the utility industry in Norway. Economies of scale are assessed to be of high value when the
sourcing spend is homogenous and the market responds to the higher volume. Economies of scale related to less human resources of sharing sourcing professionals is not evidence and cannot be concluded.

Economies of information and learning are also considered of medium to high value. Both economies related to sharing of know-how and reduced duplicated effort assessed to be of high value. Economies of process are considered to be of high value and are mainly done by developing a common process and best-practice guidelines to follow when doing sourcing processes.

For all synergies, the economies of information and learning are the one with the highest value. This is thus evaluated to be the most powerful synergy resulting from coordinating sourcing across business units.

6.3 Contribution

The purpose of the thesis was to describe how sourcing is coordinated in diversified related firms in the utility industry in Norway. Secondly, the purpose was to explain what kind of synergies that was created by this coordination.

A contribution to building knowledge about this topic has been done answering the research question. It has been showed that coordination of sourcing by organizational structure is complex and the answer is not provided by one dimension answer. The way sourcing can be coordinated by organizational structure has to be addressed both with respect to the sourcing activities in question and the coordination mechanism in use; decision-making authority or devised liaison. In this is a practical contribution for companies wanting to create higher value of coordinating sourcing activities. Centralization of decision-making power is not the only way to create synergy of organizational structure.

A contribution to knowledge is also provided by the operationalizations and illustration of the concept of sourcing. Different authors have divergent definitions and meaning of the concept and it was necessary during the work with the thesis to clearly define it. The contribution is the way sourcing management and sourcing activities are distinguished, where the identified coordination mechanism is included in the first. This
operationalizations of the sourcing concept can also apply for other context than this thesis.

6.4 Suggestions for further research

The synergies are not measured by absolute values but assessed in a subjective way by the respondents. A suggestion for further research is to quantify the synergy values of pooling sourcing needs, sharing sourcing professionals and know-how and common process, systems and tools. The easiest measure would be the unit price of bundling and accumulating sourcing needs, but also other operational measures could be found.

The relationship between the synergy and the coordination mechanisms are suggested in the theoretical framework but is not tested in the empirical data. A further research could establish a relationship between the coordination mechanism and the synergy created. In this way a practical knowledge would be created for companies to follow when chasing for synergy.

6.5 Critique

The thesis has a broad perspective which made it difficult to quantify the effects of coordination in full depth as described above. However, the mechanisms used by the case companies were investigated in depth which was made possible by choosing a research design of multiple case studies.

The research perspective is positivistic and the aim is to describe and explain the reality of construct of the investigated phenomenon. However, both the researcher and the informants have their occupation in corporate sourcing departments and could be colored by this fact. From the researcher’s side, some measures have been taken both when collecting the empiric data and when analyzing it, as described in the methodology chapter. Research can never be value-free and knowledge in the area of research is also beneficial. When looking at the answers from the informants, it seems they have answered trustworthy and credible as both favourable and unfavorable information of sourcing coordination was presented.
BIBLIOGRAPHY


APPENDIX 1: INTERVIEW GUIDE

Part A: Concepts

**Sourcing** is the activities that are performed in order to acquire the goods and services that the company need for its business activities. Sourcing is a cross-functional process, aimed at managing, developing and integrating with supplier capabilities to achieve a competitive advantage.

The strategic sourcing process defined by Handfield

Also, the management of the sourcing processes is included in the research like organizational design decisions; governance and management control systems, procedures and routines, use of information technology and supply base management (not related to a category).

**Corporate sourcing** means that multidivisional organizations are joining forces when performing sourcing activities. As this requires otherwise independent business units to work together, some coordination mechanisms must be in place.

**Synergy**; ability of two or more business units or divisions to create higher value when working together than when working apart and separately

**Synergy of corporate sourcing** is defined as the value that is added when two or more business units join their forces (e.g. combined buying) and/or share resources, information, and/or knowledge in the area of purchasing
Part B: Questions

The corporation (the corporate headquarter and business units)

1. What is the name of the corporation? How many and what are the business units (or divisions) in the corporation?
2. How is the corporation managed? By an executive board, corporate staff and shared service centres?
3. Have the business units a high grad of autonomy? Are they deciding their own budgets, investments, business strategy and policies?
4. What is the major spend categories of the business units? How much is the purchasing spend approximately in each business unit?
5. In the business units; are the sourcing activities decentralized or centralized managed and controlled? Meaning; where is the decision-making power placed? And do the units have a sourcing department with sourcing professionals?
6. How important is sourcing in the corporate strategy? In the business units strategy?

Organization structure

7. Is some kind of coordination of sourcing activities/sourcing processes done and how?
   a. By temporary or permanent cross-company sourcing/commodity/category teams?
   b. By a corporate sourcing department?
   c. By sourcing activities coordinated by a shared service centre?
   d. Is the coordinated activities related to indirect, direct spend or both?
   e. In case of yes, is this managed differently?
   f. Is there use of a sourcing board or sourcing council?
   g. Is the coordination activities voluntarily or forced by the corporate structure/headquarter
   h. Where is the team reporting? And who takes the sourcing decisions?
8. What kind of sourcing activities are coordinated between the business units?
   a. Sourcing processes within a specific category (in accordance to the specific process defined above)
   b. Supplier base development (reduction or selecting supplier)

9. Are the sourcing activities planned and controlled by
   a. Common and shared spend management and baseline calculations? By short termed-planning (by sourcing plan for 1 year)?
   b. By the use of common and shared sourcing systems?
   c. By common and shared procedures and framework?
   d. By common process?
   e. By common strategies, long-term planning and policies?

Synergy

10. Is the effect of the coordination of business units measured?

If the company uses the following categories of synergy approaches/initiatives/programmes, how effective has these initiatives been on a scale of 1-4, where 1 is “low value”, 2 is medium low value”, 3 is “medium high value”, 4 is “high value”. 0 represents “no value”.

   a. Pooling negotiating power by performing sourcing together getting lower unit price and increased standardization
   b. Sharing of know-how taking benefit of different cross-company competencies and knowledge of suppliers and markets.
   c. Process synergy by sharing common way of working, using common developed templates and IT-systems.
   d. Shared resources making use of less human resources in total across business units
   e. Reducing duplicated effort thus reduced time on sourcing activities

11. Is there other synergy effect that is gained?
APPENDIX 2: SCHEME USED DURING INTERVIEWS

Corporate firm name

Number and type of corporate sourcing processes or categories

Business unit name
Most important spend categories

Business unit name
Most important spend categories

Business unit name
Most important spend categories