School of Management

Group Structure - Specialists and Generalists

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Abstract

The aim of this thesis is to discuss and explore the subject of organizing generalists and specialists.

The purpose of this thesis is to explore and discuss different alternatives on organizational grouping from a generalists and specialists perspective. It will explore theories around organizational design, different organizational structures and give insight to the specialist and generalist function that can be found in most types of organizations.

The aim is to be able to present different aspects of organizing generalists and specialists and to be able to answer the problem question: Is there a best organizational structure for specialist and generalist groups?

The study is a qualitative study and the process of induction will be used. The epistemological standpoint is interprevistic and the ontological is more towards constructionism. The methods used are 1) the collection of and qualitative analysis of texts and documents and 2) qualitative semi-structured interviewing. The analysis is based on grounded theory method.

The result and conclusions of the study is that generalists most likely do fit better in organizational forms such as simple structure, adhocracy and network organizations. Specialists tend to prefer bureaucracy or functional/unitary organizations.

Keywords: generalists, specialists, organization, group structure

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Anna-Eva Sparf Aagaard

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1 Problem and purpose of study

1.1 Introduction and Background

Before starting the thesis I was in contact with a company where there were thoughts about some sort of organization development. At this company, in the third-party logistics business area, there is a need to make some organisation development in a certain part of the organisation. The management team has a feeling that the work being undertaken was unstructured and that employees were too general and involved in a little bit of everything. Therefore the work might not be effective and they could not meet and exceed the requirements from the customers, both internal and external. Therefore, this part of the organisation needs more structure and one other idea that the management team had was to make some of the employees more specialised, because they believe this will help them meet customer requirements.

This issue regarding generalists and specialists I found challenging and I felt I wanted to know more about it. Therefore I chose to start a research about this subject. The study will be related to the organizational structure and to questions about generalists and specialists in particular. It has always also been of personal interest how to divide work between individuals within organisations.

The idea was to use only this company as a single case-study, however, I found it more interesting to use both this company and other sources as input for my interviews to get a wider understanding and input to my subject. The risk was otherwise to become involved in trying to solve an organizational problem in an organization, and that would not benefit this thesis.

1.2 Theoretical problem

An organization has to be built up with people in it. When setting up a group of people that will be organized together, the following is needed: task analysis, people & skills and processes & procedures (Thompson 2008). The people in a group need to have technical or functional skills, task-management skills and interpersonal skills. It is not just for a group to perform their technical skills; normally the actions must be integrated and communicated with others outside and into the rest of the organization. All these factors are needed for a work group with a common goal according to Thompson (2008) s 203.

There is also an aspect of that all different people have different predisposition or tendency to work in different ways and the ability to handle different tasks and nature of tasks (Davis & Pharro, 2003). This view was already described by Taylor in the beginning of 20:th century when he stated that it was most beneficial to match men to jobs according to their capacity (Locke 1982)

Looking into this issue regarding specialists and generalists, one finds that Adam Smith was one of the first to write about specialization. He was the first that divided work into smaller pieces and made workmen only a part of a refinement of a product and not the producer of the whole product itself. The output could be increased since specialized at one or at few tasks, and transport and set-up time is reduced (Sandkull & Johansson, 1996). Many of the classic organizational theorists favour specialization over generalisation. Taylor is definitely one of them according to Locke (1982). Taylor emphasized maximum specialization not only for workers, but also for other functions such as managers. To make all these divided parts fit together as a whole, there are needed specialists to co-ordinate and plan all the work.

The following definitions of generalists and specialists can be found in literature:

- A generalist is one person that has to make decisions, solve problems and coordinate efforts of others to be able to fulfill the tasks assigned (Golembiewski, 1965).

- Persons knowing a lot of few things are specialists and persons knowing little about many things are called a generalist. The depth and breadth perspective can be used, generalists has breadth in their knowledge and specialists depth. (Ferreira & Sah, 2010)

- Persons that have the relative advantage of one task are called a specialist, and a person that is equally able to perform several tasks is called a generalist (Prasad, 2009).

Another way to view specialization is to give a highly trained specialists a rather comprehensive amount of tasks to be solved meaning a professional is responsible for the operation (Hanks & Chandler, 1994).

The benefits of having specialists are that the organization can handle highly complex tasks and that the overall efficiency will increase. Organization task diversity will affect the need of specialization, and the increase and expansion of tasks has proven to be the driver for specialization increase (Hanks & Chandler, 1994).

Having access to the tools and technology, the goal of the team and the actors, the group members and their skills, the only thing missing is structure according to the model below.
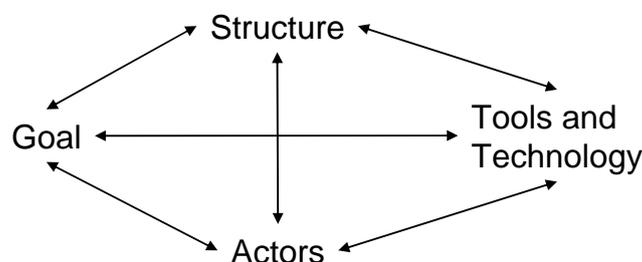

Figure 1-1 Leavitts system model (Bakka, Fivelsdal & Lindkvist, 1988)

Looking at the classical organizational theorists, they were all trying to make up the winning formula to organize that would be valid for all organizations everywhere and anywhere, and early economists thought that structure was irrelevant to organizations performance (Scott & Davis, 2007). However, that has changed over the years.

A contingency theorist would, according to Scott and Davis (2007) say that" the best way to organize depends on the nature of the task environment to which the organization relates". The contingency theorist has therefore moved away from the work of for example Taylor and Weber, who tried to find the optimal organization that would work under all circumstances. Organization is basically a map where a people can find the framework for the task being executed. The purpose of the organization is to make people work together and to create value, which they can not accomplish by themselves (Shani & Lau 2005). Or expressed as; oorganizations are social structures created by individuals to support the collaborative pursuit of specified goals, according to Scott (2003).

There are two ways to view work systems according to Yang (2008), one is the bureaucratic work system and the other is the high performance work systems. The bureaucratic systems focus on highly formal control using horizontal differentiation. High performance systems use various methods such as teamwork to integrate workers from different specialized areas and management levels. The bureaucratic system promotes people to move into different expertise areas and managerial positions while high performing systems promotes labor integration. The different requirements from organizations involved in traditional mass production, where the bureaucratic model fits, compared to faster change in demands from the customers leads to that a front line worker have to be more able to make decisions and also make them quicker (Yang, 2008). To be able to manage that, job definitions needs to be more flexible, tasks expanded and skills constantly need upgrading. What path each organization chooses to follow depends on many factors. One is size, and it is shown in larger organization that there is more likely that there are great resources to build up a structure of specialized departments, hierarchy and written rules and documents (Yang, 2008).

However, next question in this subject is how to organize? In general when designing the structure in an organization there are several options how to do it. Normally, the design and structure are not fixed over time and evolves and changes due to changes in requirements. Organization Structure groups jobs into larger units for example, working groups and departments and how they formally work together regarding communication and processes between teams/groups or individuals (Scott & Davis 2007).

Scott and Davis (2007) continue with asking the question; how can organizational structures be constructed to reflect the overall level of complexity and uncertainty of the technology employed?

Jay Galbraith states that there is no one best way to organize; however, any way of organizing is not equally effective (Scott & Davis, 2007).

In addition previous research about groups and the influence of structure in organizations have proven to be very important many times according to Gist, Locke and Taylor (1987). Their study discusses the importance of group interaction in the organizational structure and

the effect on group performance.Therefore it is relevant and of interest to study groups. When adding the perspective of generalists and specialists the research question is as follows:

Is there a best organization structure for generalist and specialist groups?

1.3   Purpose

Putting the research problem into a wider perspective the motivation of this thesis evolves.

The purpose of this thesis is to explore and discuss different alternatives on organizational grouping from a generalists and specialists perspective.

To fulfil the purpose and to be able to answer the problem question, I believe there is a need to look into the different organization structures and examine where to find the generalists and specialists in the theoretical models of organization structures that exists. It is interesting to know how and why organizational structure looks like it does today and how it has evolved historically and how the theoreticians have handled specialists and generalists functions. To understand this, the study of the design parameters of an organization gives a good background.

One parameter to understand how organizations are functioning is to view upon the subject of work division, or division of labour, to investigate what theories exists regarding the job split between generalists and specialists. Also the study will touch on the subject on how generalists and specialists work together, because this also influences the overall organizational structure.

I will explore some of the definitions there are regarding specialists and generalists, what the respective characteristics are and how they are affected by different organizational structures. This is to bring light to the understanding how they do or do not fit into the organization respectively.

As showed in the empirical study of this thesis, different organization structures could facilitate or obstruct the work of specialists or generalists. Therefore it is crucial to understand different structures and what the consequences could be when grouping the respective function in different ways.

This study will be of value to practitioners involved in organizational design since the thesis brings light into the discussion around how to practically group specialists and generalists. It is also interesting for persons working in the respective function of being a specialist or generalist because I believe knowledge can help one to understand why things happen and why it is like it is. Also, the benefit of this thesis is to give insight to what can be changed to a more effective way of working for generalists and specialists.

For theorists the thesis gives input to the discussion around benefits and weaknesses of different organization types but here it is done in the perspective from a specialist and a generalist view.

The interviews conducted in this study can also give some understanding about the nature of generalists and specialists and also guidance to answer the research problem.

2 Methodology discussion and motivation

What method and technique that is most suitable for each research study depends on the nature of the research (Ghauri & Grønhaug 2005). That is the conclusion also stated by Huberman and Miles (2002) and they have given a lot of method advice in their work (Miles & Huberman, 1994).

In this chapter the discussion will be around research strategy and methodology and whit which principles and techniques this study was made. This methodology chapter basically goes through the following steps: The chosen research strategy and its more philosophical context, then the description of research methods and description of analysis procedure.

2.1 Qualitative research and inductive approach

In this thesis the qualitative strategy is the appropriate way forward, since here words will be the essence of the research. Not numbers or data that could be quantified, as being the dominant data base in a quantitative research strategy. The key purpose of a qualitative study is to gain insights and understand (Ghauri & Grønhaug 2005). It is important to grasp the meaning of others and somehow translate and apply it to this research study. This research is a task where abilities such as being rational, explorative and intuitive are important. This task is also a focus on social structure and functions in an organization, and therefore a qualitative method is more suitable according to Ghauri and Grønhaug (2005). For inductive research, as this is, the qualitative method is more useful then the quantitative.

"Research is the application of systematic techniques and methods in pursuit of answers to questions" (E.S.R.C. 2010). All these questions can vary in nature, such as being very specific, general and/or abstract. There is always a trade-off between having a specific and tight problem formulation versus the looser and vaguer formulation (Miles & Huberman, 1994). Does lack of focus result in data overload? Does a tight pre-structure blind the researcher for important features? Here there was an idea from the start about the formulation of the problem and the issue; however that has been altered and developed during the process, after gaining understanding and knowledge about the topic being studied.

One question is also: What comes first, the research result or the theory? One way to divide these two possibilities is to explain it with a Deductive or an Inductive process as described by Bryman (2004). In a deductive process, the researched deduces a theory, or hypothesis, based on what is already known to the researcher. The hypothesis deduced must then be subject to research such as of data collection, findings and analysis to verify or revise the theory. Often the relevance of the data gathered becomes apparent after the collection. The research goes from a wide general knowledge and will during the process become more specific. An inductive process, on the other hand, is where the theory is an outcome of the research. The research draws theories out of the observations or collections of data performed. (Bryman, 2004). Often it is also described as the bottom-up method, moving from collection of data on a certain topic towards a valid conclusion.

Deductive approach:

```
┌──────────┐
│  Theory  │
└────┬─────┘
     │
     ▼
┌─────────────────────┐
│ Observations/Findings │
└─────────────────────┘
```

Inductive approach:

```
┌─────────────────────┐
│ Observations/Findings │
└──────────┬──────────┘
           │
           ▼
     ┌──────────┐
     │  Theory  │
     └──────────┘
```

Figure 2-1 Deductive and inductive approaches to the relationship between theory and research (Bryman 2004)

This study has an inductive approach, where conclusions arise out of the assumptions (Ghauri & Grønhaug 2005) and the iteration of the different steps has been conducted to advance the research. Quantitative study is a more subjective research where it is more about going into deeper analysis. Induction is an approach which enables this study to evolve.

In addition, quantitative study is a more subjective research where it is more about going into deeper analysis. There are no step-by-step rules or procedures to follow when executing a qualitative research and it is up to the researcher to find the logic behind the usage of data when performing the qualitative analysis according to E.S.R.C. 2010. Possible methods can be use of focus groups, content analysis, observations and participation.

2.2   Epistemological considerations

Epistemology is the philosophical study of the nature, object and sources of knowledge. One issue is the question of what should be regarded as acceptable knowledge in a discipline (Bryman 2004).

One epistemological standpoint is positivism. According to Kvale (1997) positivism is a philosophy that does not approve of qualitative research as a scientific method. To find out knowledge, and the truth, the research must follow a method or set of rules that is independent of what is being studied and from the person that is performing the research. Logic and validation has a great influence in positivism. Bryman (2004) explains positivism as using the same principles, procedures and ethos as for natural science. Bryman (2004) goes on to explain the five principles of positivism: 1) Phenomenalism, only phenomena confirmed by senses can be accounted for as knowledge, 2) Deductivism, a theory generate a hypothesis to test and will allow explanations of laws to be assessed, 3) Inductivism, knowledge is arrived through collection of facts that provide the basis for law, 4) Science must be objective, i.e. free from values and 5) clear distinction between scientific and normative statements.

Interpretivism is a contrasting epistemology to positivism regarding social science. Interpretivism claims that social research is so different from natural science that completely different methods and logic is needed. Sometimes this is referred to as hermeneutics and it is concerned with the theory and method of interpretation of human action. The positivist explains the human behaviour but there is also a need to understand the behaviour according to interpretists. The following approach to the understanding is called Verstehen, or empathetic understanding and phenomenology. The difference to positivism is that in social

reality, actions have a meaning for human beings, and that a social science researcher needs to get access to peoples' common sense thinking and phenomenalists will try to see things from that other persons' point of view (Bryman 2004).

The common and historical view is that the quantitative research strategy is the most scientific method, and therefore seen as better (Ghauri & Grønhaug 2005). Historically the methodology has not been a focus to qualitative researchers, but according to Huberman and Miles (2002), it is important for qualitative researchers to describe and define a method by which their research will follow. The problem of non existing methodology for qualitative researchers can not be blamed on the epistemological war, as some of the different standpoints described above.

In their writing Miles and Huberman (1994) describes and give advice to qualitative analysis methods or for the whole research method since they claim that each step in the research is analysis. That and other sources will be the ground for outlining the methodology for this thesis, since this qualitative study falls under the interpretivistic view. The thesis will give an understanding of a social world and to do that the participants in this world will be examined both by collecting secondary and primary data.

2.3   Ontological considerations

The ontological assumptions and considerations will affect how research is carried out. A constructionistic view emphasis may be placed on the active involvement of individuals in the reality construction, the organization. And the other way around in objectivism, the emphasis may be on the formal properties of the organization (Bryman 2004).

Objectivism: Social entities considered as objective entities that have a reality and can not be influenced by external actors. An organization is a tangible object with rules, regulations, hierarchy etc and has an external reality to individuals.

Constructionism: Social entity is a construction built up from perceptions and actions of social actors. Here the organization can be seen as something that is a negotiated order, not a pre-existing order.

This thesis will have a tendency towards a more constructive view, meaning that the people working in an organization can influence it. This study is primarily about the social interaction, what happens to people in organizations. However, here also the organization is sometimes seen as something that people has to adapt to and follow its' rules. But the emphasis is on social interaction.

2.4   Research methods used

One tool used here is theoretical sampling, meaning collection of data for generating a theory. The action that will go on is the collecting, coding (breaking down data and categorizing it) and analysing, deciding what and where to collect the next set of data (Bryman 1994). Here the focus will be to discover categories and their properties and then to find the interrelationship to the theory and research question.

Basically two research methods will be used in this thesis:

1. The collection of and qualitative analysis of texts and documents.

When starting a research, it is always important to find out what is already known in the field of the research (Easterby-Smith, Thorpe & Lowe 2002). Here, that will be performed with the literature study. According to Ghauri and Grønhaug (2005) the prime purposes of literature review are to 1) frame the problem under scrutiny, 2) identify relevant concepts, methods/techniques and facts and 3) position the study. To assess the quality of documents the following criteria apply: authenticity, credibility, representativeness and meaning (Bryman 2004).

Here the hermeneutic approach has the meaning that when analysing a text, it is necessary to try to bring out and interpret the meaning of the text according to the perspective of the author. Texts have been produced in different contexts and it is valuable to understand that (Bryman 2004).

2. Qualitative Interviewing through semi structured interviewing.

Interviews are often seen as the "best" method of gathering information in a qualitative research strategy. According to Yin (2009) the interview will be more of a structured conversation then an actual query in most cases when performing a qualitative study. Here the case will be of the latter, an unstructured interview where the respondent has the freedom to discuss opinions and behaviour and the interviewer will ask questions like 'how' and 'why'.

According to positivism, an interview has to be objective and the human factor should be eliminated. The qualitative interview can however be seen as a source of error when having a positivistic view as base for research. When looking at the aspects of a qualitative research interview to be successful, all factors are based on the human interaction according to Kvale (1997). Also, objective is a subjective term Kvale (1997) discusses further, but the main point is that if carried out in a professional and skilled manner the interview will be as valid as research data.

Here the method has been to identify the research questions and from that derive them into interview questions, as Kvale (1997) suggests. To formulate the research questions the decision was made to find out different blocks of information that should be valid for this study. The blocks created were:

- Introduction and orientation in the subject – here the aim was to ask general questions so the interviewed person would get acquainted with the subject and start to think about it and get into the terminology

- Individual perspective – questions about the characteristics of the individual generalist and specialist

- Organizational structure – the influence of structure on generalists and specialists

- Group structure opportunities and problems

- Work division – work split between generalists and specialists

The interview questions were then created by reasoning around these blocks. See the analysis chapter for categorizing the questions into blocks. The questions are there to bring insight to the study. The questions are designed to be quite open and the questions written down are the one to get a structure to the interview. In the interview situation itself, there will of course be clarifying questions, follow-up questions and interpreting questions as well.

The persons selected for the interviews are selected for being from different types of organisations but all with some managerial experience, managing both generalists and specialists. The interviews will be hermeneutic approach, here meaning that there is a need to understand from the perspective of the social actor (Bryman, 2004). Here the interviewed person was asked to answer the questions related to that person's reality and experience.

Four interview objects were chosen, they are:

Person A: Site Manager of a digital media company

Person B: Strategic Purchaser at an industrial production company

Person C: Marketing director at a third party logistics company

Person D: Manager for product development team at a technical industrial company

For details about the interviews, see the Appendix

2.5 Secondary and Primary data

This thesis will consist of both Secondary data and Primary data, as defined by Ghauri and Grønhaug (2005). The gathering of secondary data will be performed before one go searching for own, primary, data. The text in this thesis will mostly consist of secondary data, based on books, articles and .internet sources

It is important to use reliable data, i.e. judge whether the secondary data found can be used for this thesis and this topic. Another important aspect is to see if the data is valid, for example when doing comparisons between data sources, different sources can mean different thing but using the same term for example middle size company (Ghauri & Grønhaug 2005). The disadvantage with secondary data could be that it does not fit the research problem. In this thesis the author takes the responsibility to check if the secondary data is accurate.

The next step for this thesis is to collect the Primary data through interviewing. Ghauri and Grønhaug (2005) also discuss the advantages and disadvantages with primary data that one should be aware of. One advantage is that the interviews are collected uniquely for this study. However that could also be a pitfall if not using the right tools and methods when collecting the data. The data must be collected and used in a way so that there is no doubt that the study is reliable, see above for reference of method used.

2.6 Analysis method

Approach to quantitative data analysis will be interpretivism; here this means that the data will be interpreted based on my own experience to understand the reality.

There are three concurrent flows of activity when it comes to analyze of qualitative data; 1) data reduction, 2) data display and 3) conclusion drawing/verification (Ghauri & Grønhaug 2005).

Reduction is the process of selecting, focusing, simplifying, abstracting and transforming the data. This already starts before and in the data collection phase when decisions are made of what to study and what to include. The display means that in an organized, compressed assembly of information that permits conclusion drawing. Already in the data collection phases the analysis has begun, because here it is decided what it mean. Conclusions need to be verified and validated. Data analysis is a continuous iterative process according to Miles and Huberman (1994).

The major problem with a qualitative method is to condense all the huge amount of available data and make conclusions that are illustrative and make sense to the reader (Easterby-Smith, Thorpe & Lowe 2002). There are two ways of analyzing data from a qualitative research according to Easterby-Smith, Thorpe and Lowe (2002), one is 'content analysis' and the other is 'grounded analysis'.

Content Analysis	Grounded Analysis
Searching for contenet (prior hypothesis)	Understanding of context and time
Fragmented	Holistic
Objective	Subjective: faithful to views of respondents
More deductive	More inductive
Aims for clarity and unity	Preserves ambiguity and contradiction

Figure 2-2 Qualitative data analysis: content versus grounded methods (Easterby-Smith, Thorpe & Lowe 2002)

Often, the content analysis is very time consuming since it is often applied when there is focus of the research is very clear and it exists for example a large amount of interviews. In grounded analysis the structure of the research is tested again and again under the process itself, since data is needed to derive the structure of work. (Easterby-Smith, Thorpe & Lowe 2002)

Here, the grounded analysis will be used. Grounded theory is defined as: 'theory that was derived from data, systematically gathered and analyzed through the research process. In this method, data collection, analysis, and eventual theory stand in close relationship to one another' (Bryman 2004). The central features of grounded theory, and what is also applicable

for this thesis, is that a theory is developed out of data, and that data collection and analysis are developed repeatedly referring to each other. Analytic induction and grounded sampling can both be seen as iterative methods.

Tools used in grounded analysis are theoretical sampling, coding, theoretical saturation and constant comparison according to Bryman (2004). My interpretation of these tools gives the following steps in the analysis:

- The sampling phase here will consist of collecting data from literature and interviews. I will select some people to the interviews that I judge can give some insight to the subject of this thesis.

- From the coding the outcome will be concepts, or the building blocks of theory. The coding process here will be to identify and categorize theories from different sources in the data and labeling them in a way, or make the data fit together in a context that gives light to the research problem. From constant comparison and linking one can build the concepts into categories. A category can be seen as an elaborated concept or concepts that are representing the real world phenomena.

- Saturation means to know when there is enough information or conclusions to be able to summarize and finalize.

According to Easterby-Smith, Thorpe and Lowe (2002) there are seven main steps to perform an analysis. All of them will more or less be used in this thesis.

Process steps	Outcome	Practical 'what to do'
Research Questions		
Theoretical sampling		
Collect data		
Coding	Concepts	Build blocks of theory, what belongs together? Classics of theory and modern tehories? Separate, compile and organize the data
Constant comparison	Categories	What can be representing the real-world? Applicable interviews will help.
Saturate categories		
Explore relationships between categories	Hypothesis	Possible linking of different concepts, relationship between the blocks of theory? Hunches about this.
Theoretical sampling		
Collect data		
Sature categories		
Test Hypothesis	Subsatantive theory	Theory based on a certian part of an organization.
Collection and analysis of data in other settings	Formal theory	Formal theory is more generally valid, for example valid for differnet organizations

Figure 2-3 Processes and outcomes in grounded theory, based on Bryman (2004) and put into practice for this thesis

In column Practical 'what to do' I summarized what will be the practical steps are to execute in this thesis analysis.

Hypothesis is an initial idea arising from exploring of relationships between concepts. Theory is more a set of well-developed categories (Easterby-Smith, Thorpe & Lowe, 2002).

3 Literature Review and Theory

In this chapter there will be a general and quite brief overview of organisation structure in general, trying to find connections and links towards the question about group structure and specifically related to the questions around specialists and generalists.

3.1 Organizational design theory

One definition of organization design is "the making of decisions about the formal organizational arrangements, including the formal structures and the formal processes that make up an organization" (Nadler & Tushman, 1988). Short descriptions of what an organization is and looks like could be valuable. But Jaffee (2001) argues that studying different contribution from theorists to what an organization are is better than to stick to the one sentence definitions. With the short definitions, one risks to exclude important components of organizational concepts and understanding what an organization is and how to organize it.

Organization structure is created through a combination of structured planning and evolution arising from the problems the organization has to deal with (Nicholas & Steyn, 2008). As the environment changes the organization adapts to the new demands.

According to Nadler and Tushman (1998) there are 4 components of an organization that have to be combined. These are:

1. the task

2. the individual

3. the formal organization arrangement

4. the informal organization

The efficiency of the organization can be analyzed with the **congruence concept.**

Nadler and Tushman (1998) describe the congruence hypothesis as the degree to which the needs, demands, goals, objectives, and/or structures of one component are consistent with the needs, demands, goals, objectives, and/or structures of another component. One example is to measure the congruence between the individual and the task. Where the congruence is high, the individual skills and knowledge match the demands of the task and performance will be high. An organization as a whole works better when all four components fit together as individual pairs. The best way to organize is to find out the best way of combining the components so it will lead to congruence between them.

In the figure below there are the factors that affect the organizations efficiency according to Shani and Lau (2005). All these six different elements contribute in the way they are summarized in the figure.
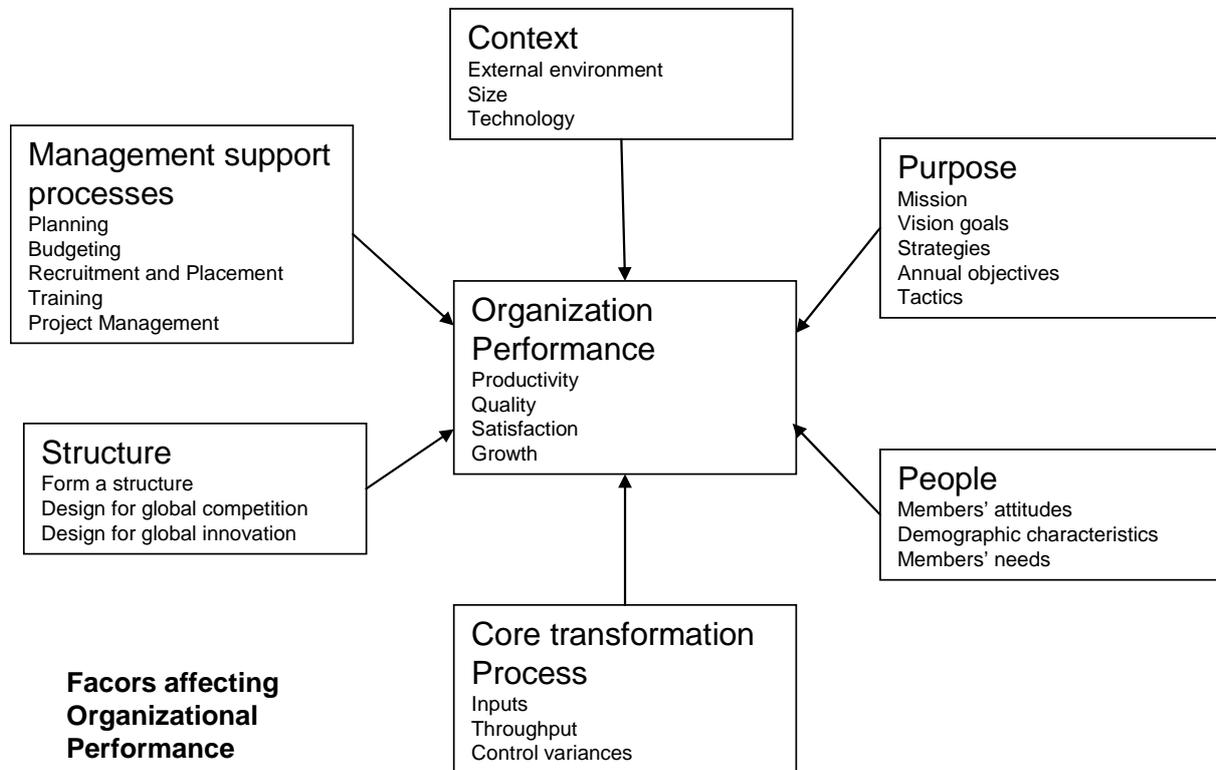
Figure 3-1 Factors Affecting Organization Performance, (Shani & Lau 2005)

As one can understand from this figure a lot of disciplines are involved when it comes to organizational study. It extends over psychology, sociology, political science, economics and anthropology, and mainly studied at business schools, even though all these disciplines can benefit from it (Scott & Davis 2007). However, in general the aim has solely historically been to improve performance and increase the profits at the companies that have been under research. And it is important to remember that all factors contribute to improvement.

According to Scott and Davis (2007) there are three basic levels of organizations to study. One is the social psychological level, where the behavior of the persons in the organization is studied and how the individuals are affected in terms of attitudes and behavior. Next is the organizational level where the structure and processes that form the organization is studied. Here groups, departments and ranks which build up the organizations are studied as well as the analytical components such as communication network and hierarchy.
The third level is the ecological level where the organization is seen as an independent system and the interaction with other systems or environment is studied. Applying the terms micro

and macro, the first level, the psychological, is the micro perspective and the other two can be seen as the macro perspective (Scott & Davis 2007).

There are three views used to analyze organizations and help us understand them better (Scott & Davis 2007). They are summarized in the figure below.

Rational	Natural	Open
Organizations are collctivities oriented to the pursuit of relatively specific goals and exhibiting relatively highy formalized social structures	Organizatons are collectivities whose participants are pursuing multiple interests, both disparate and common, but who recognize the value of perpetuating the organization as an important resource	Organizations are congeries of interdependent flows and activities linking shifting coalitions of participants embedded in wider material-resource and institutional environments

Figure 3-2 Three perspectives on organizations as systems (Scott & Davis 2003)

In the rational perspective, the social structure and the organizational goals are the key elements that are emphasized. This is also the most applied approach by managers (Jaffee 2001). However, in the Natural perspective the focus lies within the sociological area and informal activities of the participants to create values and cultures. In the last, open view, Jaffee (2001) continues that the organization is not a hermetically sealed entity but influenced by environment and must hence have negotiations with both humans and other organizations.

3.2   Structural features of organizations

According to Shafritz, Ott and Jang (2005) the four basic assumptions of the structural perspective are:

1. Organizations are rational institutions, whose purpose is to accomplish objectives. The behavior is achieved through systems of rules and formal authority. Control and coordination is needed to keep the rationality.

2. There is a most appropriate structure for any organization. At least in the light of the organizations surrounding environment, based on products/services and the technology for the production process.

3. Specialization and the division of labor increase the quality and output, especially in highly skilled operations and professions.

4. Most problems in organizations can be solved by changing the structure.

The structural features of organizations that are of most importance are: 1) to reduce uncertainty, 2) deal with complexity and 3) coordinate complex tasks, according to Scott and Davis (2007).

Another way to view upon organizations is that there are six debates in the nature of structuring organizations according to Astley and Van de Ven (1983). They are:

1) Are the organizations functionally rational, technically constrained system, or are they socially constructed, subjectively meaningful embodiments of individual action?

2) Are changes in organizational form explained by internal adaption or by environmental selection?

3) Is organizational life determined by intractable environmental constraints, or is it actively created trough strategic managerial choices?

4) Is the environment to be viewed as a simple aggregation of organizations governed by external economic forces, or as an integrated collectivity or organizations governed by its' own internal social and political forces?

5) Is organizational behavior principally concerned with individual or collective action?

6) Are Organizations neutral technical instruments engineered to achieve goal, or are they institutionalized manifestations of the vested interests and power structure of the wider society?

The debates help us understand where the tensions are in organizational life. Debate 1 and 4 focus on structural forms and 2 and 5 focus on the debate part-whole. These two tensions and the interaction of them are discussed in debate 3 and 6.

To design an organization the following decisions are necessary to be made: how many people will join, what expertise and competence is needed, what reporting structure is required and who has the formal authority over decisions (Ferreira & Sah 2010).

When managers design the organization, (the assumption here is that it is a managers' job to design the organization) there are two perspectives that is needed to be balanced. The strategic perspective, task oriented versus the social perspective. The first focuses on how well the work will be done and the other focuses on the impact of the individual as well as interpersonal and the political aspects of the organization design (Nadler & Tushman, 1988). Normally, the organization design is also an allocation of scarce resources.

Strategy/Task Performance	Individual/Socail/Cultural
Design supports the implementation of the strategy	How will existing people fit into the design?
Design facilitates the flow of work	How will the design affect power relations among different groups?
Design permits effective managerial control	How will the design fit with peoples values and beliefs?
Design creates doable, measurable jobs	How will the design affect the tone and operating style of the organization?

Figure 3-3 Two design perspectives (Nadler & Tushman, 1988)

One other way to view organizations is to see them as an information processing functions (Nadler & Tushman, 1988). This view is motivated by the fact that different tasks pose

different information processing requirement. Information movement is needed to get the work done. In addition, different organizations possess different capacity of information processing and that information is processed differently between groups within different organizations. Nadler and Tushman (1988) continue to argue that the effectiveness of the organization will be the greatest when the process and structure to share information match the requirement of the task.

3.3   Organizational theory analysis

One viewpoint of organizational theory analysis is according to Jaffe (2001). There are two dimensions in the framework for analyzing an organizational theory:

1) Does the theory emphasize internal characteristics of the organization or the environment and external interactions

2) Identification of the two fundamental organizational transactions that causes tension and change within the organization or in the interactions with the environment/other organizations.

In the first dimension one can distinguish between the intra-organizational level (could be seen as a closed system) and the inter-organizational level (or open system). The second dimension deals with tensions, or problems and dilemmas, that have shaped the evolution of the theory (Jaffee 2001).Basically, it is transactions that create tensions. A transaction is defined as an exchange relationship between the provider and the recipient of labor, service or product. The first tension #1 arises out of trying to control and extract work effort from the human and the second #2 is trying to achieve division of economic activities and coordinating and integrate the same (Jaffee 2001).

Tension #1: The greatest challenge for organization theorists has historically been the human factor, the employment relationship (Jaffee 2001). All humans are different and even if they are capable, they might not be willing to give the labor service as expected. The reason for this tension is that humans have the ability to react and response to strategies and theories.

Tension #2: Fundamental principles of organizations are differentiation, division of labor and specialization. When an individual or organization is not able to achieve all the productive actions by themselves, they have to rely on interaction with others. From this comes the issue of integration.

Jaffee (2001) continues by looking at labor, where the following two divisions can be identified: the technical division and the social. For reference, look at the table below. The technical division is on the intra-organizational level dealing with issues around the horizontal dimension in the organization, where different tasks are being performed at the same level in the organization, and vertical dimension such as difference in authority, power and reward. Studying the inter-organizational level one finds the social differentiation among labor, the transactions taking place between firms such as buying and selling, supply and distribution.

	Tension between:	
Organizational level	Differentiation	Integration
Intraorganizational/ within the firm	**Technical Division of Labor** Different tasks, jobs, occupations, departments	**Social Integration** integrating humans through communication, interaction, culture
Interorganizational/ among firms	**Social Division of Labor** Different firms, producers, suppliers, distributors	**Functional Integration** integrating organizational units involved in the stages of the production and distribution process

Figure 3-4 Tension between Differentiation and Integration (Jaffee 2001)

However, for both divisions of labor the challenge of integration and coordination of activities exists.

One example of the differentiation and integration tension on inter-organizational level is the employment of specialized labor as a mean to increase efficiency. However this technical division of labor undermines the social integration since being more specialized reduces the need of being involved and to relate to the overall objectives of the organization. The challenge and task for managers is to create the right balance between differentiation and integration (Jaffee 2001). When the differentiation level is low, the structural control is lower and the employees self-interest might be greater than the fulfillment of the common goals and tasks.

Looking at intra-organizational level of labor, the social division is a question of being specialized and being an expert. For example being a customer specified parts supplier to a manufacturer creates tension in the integration questions such as: will inputs from suppliers be on-time? Will the quality be on the right level? Or a manufacturing firm can decide to vertically integrate and gain control over processes by buying the supplier for example, or rely on the social division of labor by being a specialist on what others need.

Jaffee (2001) states that all kind of strategic decisions regarding organization structure is a trade-off concerning differentiation and integration.

3.4 Organizations forms and metaphors

The structural features of organizations that are of the greatest importance are: 1) to reduce uncertainty, 2) deal with complexity and 3) coordinate complex tasks, according to Scott and Davis (2007). There are different ways to deal with this and different ways to organize.

The basic forms of organizations are the following;

- Simple Structure, small organization which has minimal division of labor

- Bureaucracy – many routines, high formalization and centralized authority

- Functional or unitary – departments performing specialized tasks that contributes to an overall goal

- Multidivisional – groups by product and/or markets and operates quite autonomous

- Matrix – organized both by product and project simultaneously

- Adhocracy – low formality and centralization, members move in and out of projects as needed

- Network – structure across formal structure within or between organizations

Jaffe (2001) gives other examples of definitions, or concepts, of how to view organizations. One is Hall's Definition of Organization. Here the organization is a collectivity with boundaries, norms, authority, communication and coordination. Collectivity is a group of people that has something in common and boundaries that define who is a part of the organization and who is outside the organization (Jaffee 2001). Authority, communication and coordination are means that bring the members of the collectivity into it. Structures, primarily social, processes and outcomes are also reality in organizations. I.e. Processes are towards goals and the outcome the consequence of the organizations structure and processes (Jaffee 2001).

To continue with, for example, Morgan's Images of Organization which is a theory where metaphors are used (Jaffee 2001). The metaphors used are that organizations can be seen as

- Machines – tools or instruments to achieve objectives

- Organisms – living things that want to stay alive and nourish

- Brains – entity that process information, make decisions and learn things

- Cultures – group of people that share values and beliefs

- Political systems – groups with different priorities having conflicts and competing for resources

- Psychic prisons – shaping the members psyche and controlling mental processes

- Instruments of domination – combination of machines and political system

But the most common way to describe an organization is by looking at the organization chart. When looking at a formal organization chart, several conclusions can be drawn from the observation of the chart (Nicholas & Steyn, 2008). Such as understanding of the companies' major divisions and the activities the organization is involved in. There is also an understanding of the managerial structure, who reports to whom and also what the responsibility each subdivision has in the organization. You can also find out which areas are focused in terms of for example research and development. The formal communication flow and formal authority levels are also shown. The only thing that is not shown is the informal structure and actual communication.

Most traditional models of organization work best when the environment is quite stable. When the environment changes and are characterized with complexity, change, uncertainty and unpredictability the organization must adapt to changes in goals and deal with the uncertainty. They must be organic, which means highly differentiated to handle a big variety of problems, highly integrated to respond quickly to situations and be very flexible to alter the structure when goals are changed (Nicholas & Steyn, 2008).

One way to make the organization more efficient and to react faster is to make them more horizontal. This facilitates direct communication between the involved parties. One example of this kind of organization is the Project Organization (Nicholas & Steyn, 2008). The project organization can incorporate the horizontal relationship into the formal traditional hierarchy top-down organization. The roles that facilitate this horizontal communication can be called integrators and they can be seen as a formal structure for what might have been the informal organization (for example: liaison roles, task force, project roles)

However, one pitfall with the project, or horizontal organization, is that in the traditional organization, the people develop and expand their professional knowledge encouraged by their function manager. When there is more emphasis on projects, the specialization is less focused and therefore when the special knowledge is needed it must be contracted from outside the organization. According to Nicholas and Steyn (2008) this can undermine the organizations in-house expertise.

The most common way to combine vertical and horizontal organizations is the Matrix organization. Persons in a matrix organization have a home base in a function, where the expertise and professional knowledge can nourish, and work from time to time in projects and hereby the communication and integration work on the right level of the organization (Nicholas & Steyn, 2008). One issue that can arise in a matrix organization is the tension between function and project – which is most important and strongest? Every person in the organization also has two "managers" which also can lead to confusion since one is responsible for performance evaluation and the other is the director of the work.

3.5   Bureaucracy

The most common form of formal organizations is function based. When the environment changes, new problems arise, subdivisions are created to solve the problems adding more rules and procedures and levels of management. Integration between subunits is often handled with rules procedures, coordinated plans and budgets. When a tension, or problem occurs, the managerial chain of authority take over. The effect of this is more bureaucracy and leading to less flexibility and less integration (Nicholas & Steyn, 2008).

The rational-bureaucratic model of organization has been a dominant view on organizations according to Jaffee (2001). It is built around the machine-metaphor and the structural and administrative arrangements are strong and designed to reach goals. It can be seen as very formal and meant to control human labor. However, in some organizations, bureaucracy is the only possible option such as for the police, banks, social insurance offices and courts of law where we all want the same treatment indifferent of which we are (Forslund 2009).

Weber (1964) specifies Bureaucracy in the following six manners: 1) authority is clearly divided and defined, 2) hierarchy structure, 3) written processes and procedures, 4) positions are held by experts who could also be trained as experts, 5) positions and employment is seen as a career and 6) rules and authority is not an individual privilege. In other words, positions in a Bureaucratic system are given to the one with the right technical qualification. The position is in the nature of a duty and does not create a personal relationship to rules and authority; everything is linked to the position. In short this means that the person and position are separated.

Concisely, the central principles are: Formalism – degree of written procedures, rules, regulations and task assignments. Here it is not the case that the "person makes the role". Instrumentalism – there is a purpose and the organization is a designed tool or machine to reach the goals. Rational-legal authority – the best way to organize humans to be effective is to have formal positions (Jaffee 2001).

One issue with the bureaucracy is that this type of organization is unable to respond to flexible demands. One other of the problems with bureaucratic organizational forms is the highly specialized positions in the organization. It can be rational way to organize work to be efficient performing ones task but it can also lead to workers focusing only on their own part of the value chain. This also leads to the humans in the organization being less likely to learn new knowledge and hereby not fully using their mental capability.

However, without the informal organization processes there will be no organization, Jaffee (2001) continues, and the bureaucracy model is explicitly very formal. So the differentiation of tasks and functions produce conflicting interests within the organization and therefore by there is a need of integration (Jaffee 2001).

3.6 Group Structure Theory

There is no right way to structure and organization. And normally, it is not needed *more* structure to improve the output of an organization. All discussions in literature are about different ways to structure the organization (Forslund, 2009).

Forslund (2009) refers to that Mintzberg has nine design parameters to take into account when structuring an organization. These are divided into 4 groups by Forslund (2009).

GROUP	DESIGN PARAMETER
Design Position	Specialization
	Formalise Behavior
	Training and Indoctrination
Design of units	Grouping
	Size
Design of Lateral Links	Planning & control systems
	Coordination
Design of desicionmaking	Vertical decentralizing
	Horisontal decentralizing

Figure 3-5 Design parameters, based on Mintzberg (1979), (Forslund 2009)

The decentralization parameter decides on the decision making in the organization (Forslund 2009). The more decentralisation there is the more motivated are people, the organization can respond quickly, the knowledge is more spread out in the organisation and decisions are better when taken closer to people affected. Vertical decentralisation means that the authority to make decisions is moved down in the structure and horizontal means delegation to non-managers besides line management working with processes, planning, policies etc., all according to Forslund (2009). However, there are pitfalls as well with decentralization: risk for double work, inconsequence, economies of scale can be harder to achieve, local egoism that favour the own unit and short sighted decisions.

Looking at the first group, where the structure parameters are directly affecting the individual. The first one is specialization. Specialization can be divided into Horizontal and Vertical specialization. The horizontal is the "width" of the work performed. A high horizontal specialization means that there are few tasks that are included in the position. With vertical specialization the meaning is the "depth" of the task. A high vertical specialization means that the task requires little of decision making, analysis and planning. The difference is low vertical specialization where the requirements are high on the person performing the task in terms of intellectual capacity (Forslund, 2009).
This means that for a job with high specialization less intellectual capacity is required form the employee, and the worker is more exchangeable to almost "anyone" or to be replaced by machines in the long run.

As soon as resources are specialized the complementary task for the organization design is to link the interdependent areas together (Nadler & Tushman, 1988). Here "linking mechanisms" are needed, for example coordinating of groups. Strategic grouping is one part of the strategic design of organizations. Strategic linking is the other, i.e. coordinating groups. Strategic grouping means group some resources together, which also means splitting some resources, and decide the degree of specialization.

Grouping decisions puts tasks, functions or disciplines together and draw others apart. People grouped together will be better to plan, discuss and perform their tasks. They will also become more specialized as they focus on a smaller range of tasks, according to Nadler and Tushman (1988). Grouping has an effect on the organizations output since the grouping decision states what is going to be focused or not. It is the strategy of the overall organization form that will affect how to group people so the strategic objectives of the organizations can be fulfilled. The second choice in strategic grouping is the decision about level of specialization (Nadler & Tushman, 1988).

According to Shani and Lau (2005) Group Structure is defined by psychologically shared properties, both formal and informal. The formal elements are those from an organization and its tasks and the informal develops out of the operations of the group. How the tasks are organised is a formal factor that is called Work Design (Shani & Lau 2005). The work Design heavily impacts the effectiveness of the group and also to understand it is important for the group development of performance.
As a group develops, the Group Technology, or the informal elements defined as recurrent patterns evolve. The dimensions of group technology are 1) task predictability, 2) problem analyzability and 3) interdependence.

Group Structure also consists of three properties: 1) connectiveness, identification with other group member's goals, 2) vertical differentiation that is the organizational hierarchy in a group and 3) horizontal differentiation, job areas represented within the group. To be able to analyze group behaviour Shani and Lau (2005) adds the following elements: norms, status and role identification.

Norms are values and attitudes that people often are unaware of. However, the norms influence our behaviour and it is our values that make up the norms. Status is defined as esteem, respect or prestige by Shani and Lau (2005), and one way to become aware of status in a group is to ask the questions: What is my credibility? How can I improve my acceptability?

To use all these design parameters to form an organization it is needed to relate all these parameters to each other. Forslund (2009) mention situation factors and coordination mechanisms. The situation factors describe what situation the organization is such as age and size, which technology are the organizations business based on and the dynamics and complexity of the environment and power in relation to the surroundings. The coordination factors are mutual adaption (members work closely and adjust ones act according to the other persons action, also this can be that persons can cover work for each other), direct work management, standardizing of procedures, standardization of knowledge (hiring persons educated for the work being performed), standardizing of results (do not care of how the work is performed as long as the targets are met) and standardizing of norms.

3.7   Division of labor

Adam Smiths (1776) thoughts about division of labor can be summarized as when dividing work into smaller parts the output can be increased. Each worker has its profession and sticks to it and that will lead to high productivity. Adam Smith was the first who divided work into smaller pieces and made workmen only a part of a refinement of a product and not the producer of the whole product itself. The output could be increased since specialized at one or at few tasks, and transport and set-up time was reduced (Sandkull & Johansson, 1996).

Scientific Management is the evolution, not an invention, used by almost every type of industry according to Taylor (1916). It is a mental change that needs to exist in every part of the organization, in every individual. There are four great principles according to Taylor (1916) and they are: 1) Gathering of knowledge and information of workmen's work in the purpose of motion and time study, 2) selection of workmen and the projected progress and development taken into consideration, 3) bring together the man and the science, i.e. making and offering something nice to the workmen so they are willing to work and 4) division of work between managers and workers and make them teamwork in a democratic way.

For Taylor the general target was to reduce cost with standard procedures and specialized workforce. However, that approach also restricts the organizations ability to adapt, innovate and shift into new markets (Jaffee 2001). Competition, rapid innovations and product diversity are the factors that did not favor the "Fordism".

Looking at the "Toyotaism", as described and summarized by Jaffee (2001), that is the opposite compared to Fordism. At Toyota the following applies 1) structure facilitating

participation, 2) cross-cutting divisions and hierarchies, 3) constellation of mobility and career ladders and 4) "corporate citizens". One can summarize the differences that in Fordism the differentiation is high and workers are alienated, and in Toyotaism the interaction portion is high and people identify themselves with the organization. Communication and information exchange is encouraged in Toyotaism.

Lean manufacturing is a method where all parts of the production system are focused to eliminate waste and at the same time continuously adding value-added work. Kaizen is the unending improvement method, doing little things better to set and achieve higher standards. Kaizen is the base of standardized work and the outcome is to maximize productivity. Procedures have to be followed and therefore it is easy to identify problems and also to change the standard procedure (Black 2008).

High integration is not always a positive thing. Applying the Lean Production, Kanban and Kaizen production models gives not only positive influences to the workforce. When there is supposed to be multi-skilling (variety of skill levels utilized by team members) the reality showed that there were multitasking instead that made the workforce responsible for multiple tasks and that increased the workload (Jaffee 2001).

Further examination of this division could be seen as the application of technology and scientific knowledge to the work. That means tasks can be subdivided based on scientific and engineering knowledge. Hereby the different skills among workers can be used at the right place (Scott & Davis 2007). The different tasks can also be grouped according to different level of complexity and thereby linked to pay scales, giving workers motivation to develop their skills. This is not only beneficial for production units; it is also applicable for administration. One side effect of specializing work is that the work must be designed and coordinated by someone else, which could lead to big overhead spending.

Many of the classic theorists favour specialization over generalisation. Taylor is definitely one of them according to Locke (1982). Taylor emphasized maximum specialization not only for workers, but also for other functions such as managers. The gain with specialization is to reduce learning time and to increase the skills. Taylor did also always argue for a matching of job according to a man's capacity. Gulick (1937) also argues for that and since men differ in capacity and nature the only way forward to gain effectiveness is to be specialized on what you do. The range of knowledge is so great that during a man's lifetime there is only possible to learn a small fraction of it (Gulick, 1937). Therefore the work has to be divided between individuals and the individuals are going to be specialized on what they do. To make all these divided parts fit together as a whole, there are needed specialists to co-ordinate and plan all the work. Organization, a system of authority, is one way to coordinate work,

3.8 Departmentalization or Strategic Grouping

The question of how to group different jobs together can be referred to as Departmentalization (Robbins & Judge, 2009). Common ways to organize and group jobs is by product, by function, by geographic area/region or customer. Elements that could be added to this division of groups are process and projects (Nicholas & Steyn, 2008).

Scott and Davis (2007) write about 4 different bases of "strategic grouping" taken from Nadler and Tushman (1988):

Grouping by:			
Activity	**Output**	**User**	**Multiple foci**
Bringing together individuals who perform the same functions, share the same disciplines, employ similar work processes.	Bringing together individuals who provide the same service or contribute to the same prodcut.	Bringing together individuals who serve the same customers or markets.	The simultaneous use of two or more of these criteria. Multifocus grouping creates some type of multiplex structure.

Figure 3-6 Strategic Grouping (Nadler & Tushman, 1988)

According to Nadler and Tushman (1988) there are several options for organizing groups:

Grouping by activity; group people together that is working with the same functions, disciplines or have the same skills. Here it is also possible to group by time. Short term tasks can be groped together and long term projects together. When the work is needed 24 hours a day, the work can be divided into shift work, where also managers are needed for all shifts.

Grouping by output; group people together that is responsible and work for the same service or product. They perform different activities aiming at the same output. In these types of organizations, the product, service or output goals are the emphasis and this is what is rewarded.

Grouping by user or customer are other options. People that perform different output through different activities may be grouped together since they serve the same user i.e. customer or client. Here the market or a geographic area could be a common "user" and ground for grouping.

Grouping by multiple foci (matrix organization) is where focus on several dimensions is needed simultaneously. The purpose could be to maximize disciplinary competence as well as product integrity.

Departmentalization also affects communication. Examples of who communicates with who can be structured is the following way (Scott & Davis, 2007):

- Staff roles – gathering and summarizing information needed for decision making in the line organization, according to authority rules.

- Liaison roles – facilitator between departments.

- Task forces – temporary groups to carry out specific assignments to solve critical issues.

- Project teams – people representing different functions or departments designated for a specific outcome.

3.9 Consequences of organization form options

The following six questions can be used to assess the impact of different options (Nadler & Tushman 1988):

1) To what extent does that option maximize the utilization of resources?

2) How does it affect specialization and economies of scale?

3) How does it affect measurement and control issues?

4) How does it affect the development of individuals and the organizations capacity to use the human resources?

5) How does it affect the final output of the organization?

6) How responsive is this organization form to important competitive demands?

Resources usage is maximized in the grouping by activity, because individuals performing the same function can share the resources, develop specialized capabilities and expertise. When grouping by output resources must be duplicated. Activity based specialization normally leads to economies of scale, since the tasks are repeated. But, when a specialized group becomes too large in number of members, it suffers from bureaucracy, extensive staff support and an unwieldy organization, the economies of scale disappear. Output/user organizations dedicate resources to focused products or markets and they become specialized on the user, but the economy of scale does not appear here (Nadler & Tushman 1988).

Activity grouping foster individuals to become experts at general functions or disciplines and when the specialization increases the risk is that the individual becomes narrow in wider perspectives. The risk of conflict between groups also increases. Individuals in user based organizations have less opportunity to become specialists themselves but they have a greater opportunity to work with several specialists in the wider organization. The exposure to various functions and managerial issues increase. However, the trade-off is a specialist by activity or profession and product/market (Nadler & Tushman 1988).

The activity way to group has the benefit of using resources and shared skills effectively but impedes coordination between groups. To group by output, or product, and user improves coordination but similar resources are needed in several places and hereby one looses the economy of scale. Multiple foci give attention to the various objectives but require high integration and the risk for conflict is bigger (Scott & Davis, 2007).

3.10 Organizing by Function versus Product

To set up an organization there is the question of organizing by function or by product. This is debated by Walker and Lorsch (1968). The debate is formed around the main question: Should all specialists in a given function be grouped under a common boss, regardless of differences in the product they are involved in, or should the various specialists working on a

single product be grouped together under the same superior? One finding is this trade-off that needs to be considered: with highly specialized functional units the risk is that one looses the coordination or between the units. The other way, to organize by product promotes the coordination work but the risk here is that the functional specialist does not feel identification with the function and goals (Walker & Lorsch, 1968). Organizing by function has the following advantages: guarantees the maximum use of technical skills, work division and specialization. It is also possible to have mass production and best use of machinery and labor.

There are a few questions according to Walker and Lorsch (1968) that could be criteria for managers to make the decision when considering organizing by function or product. 1) Which approach permits maximum use of special technical knowledge? 2) Which provides the most efficient utilization of machinery and equipment? 3) Which provides the best hope of obtaining the required control and coordination?

However, these criteria do not take into account the complex trade-offs that could be an effect of these decisions. Changes can lead to a less effective organization and unexpected results could be an outcome (Walker & Lorsch, 1968). The effect that is often left out by traditional theorists is the one that the coordination often is reduced between highly specialized functional units. On the other side, product units as a basis for organization makes specialists work together but the trade-off is that they feel less identification with functional goals (Walker & Lorsch, 1968).

Specialization, here in the meaning grouping similar activities, skills and sometimes equipment together, does not take into consideration the behavior. Looking at the social and psychological consequence of organizing specialists and coordinating work, there is an important relationship between the assigned activities of a unit and individuals and the pattern of thought and behavior. Differentiation arises when there are different behavior and thought between different specialists in relation to their respective task. But, differentiation is necessary when function specialist perform their work. The greater the differentiation is the greater is the challenge to coordinate. It is all about communication and how effective the specialists are at solving the communication and conflicts between functions (Walker & Lorsch, 1968).

Observing two plants with similar products and goals, one named Plant F for Function and the other Plant P for Product, Walker and Lorsch (1968) found the following differences in characteristics. Plan F here is a plant organized on a *functional* basis and plant P on a *product* basis.

Characteristics	Plant F	Plant P
Differentiation	Less differentiation except in goal orientation	Greater differentiation in structure and time orientation
Integration	Somewhat less effective	More effective
Conflict management	Confrontation, but also "smothing over" and avoidance; rather restricted communication pattern	Confrontation of conflict; open, face-to-face communication
Effectiveness	Efficient, stable production; but less successful in improving plant capabilities	Successful in improving plant capabilities, but less effective in stable production
Employee attitudes	Prevalent feeling of satisfaction, but less feeling of stress and involvement	Prevalent feeling of stress and involvement, but less feeling of satisfaction

Figure 3-7 Observed characteristics of the two organizations (Walker & Lorsch, 1968)

To relate this to more modern language Shani and Lau (2005) uses the term "Functional Form" for the Function based organization and "Product or Self-Contained Form" for the Product based. The definitions used are:

- Organizations that group personnel on the basis of function performed, or work process, or specialized knowledge, training or academic discipline have chosen the functional form

- When personnel are grouped according to product line, service performed, or project, then a product or self-contained form of organization has been created

Other examples of organisational forms are hybrid or matrix organization, newer horizontal lateral forms, process forms, network organisations and designs for global competition.

Organization forms in general are constructed based on the strategic objectives of the organization and specialization is hinged on work-related uncertainty. Organizations must specialize enough to cope with environment and/or task complexity. If the complexity is high in heterogeneity, specialization must occur to a higher degree then if the tasks or environment are quite homogenous. An organization must specialize to meet uncertain requirements (Nadler & Tushman 1988). However, an organization can be overspecialized i.e. little uncertainty yet substantial specialization, and under specialized, i.e. substantial uncertainty yet little specialization and these two types of mismatch will lead to underperforming organizations.

3.11 Advantages and disadvantages Specialists Generalists

Golembiewski (1965) raises a few points that can be seen as arguments about gains and risks with both of these types of employees and how that can affect the organizational structure. For example the possible losses of just having specialists are inflexibility, narrowness, the

preference of technique to purpose and the fragmentation of an organization into separate and perhaps conflicting specialties. However, the gains of having specialists could be substantial.

When specialists move into supervisory function the effectiveness of the organization often becomes less. That is due to that the narrow focus that always has worked well for reaching specific purposes, hinder the managerial effectiveness (Golembiewski, 1965).

When looking at traditional organization theory the specialist is the person who get favors the most due to that in the traditional school, the organization is divided by function and every person reports back to one manager and the employee gets rewarded when doing a good job in that function. It is hereby easier for a specialist to get rewarded early in the career, than it is for a generalist (Golembiewski, 1965). In a traditional organization the only person with more generalist profile is higher management and the organization often has centralized authority.

When looking at more modern ways to organize work, one part of the organization, a group, are assigned to manage a complete process or complete flow of tasks, there the managers in lower parts of the hierarchy needs to be a more generalist compared to traditional organization. Golembiewski (1965) call this an unorthodox way to organize and structure. The benefits are that decisions become closer to the employees and that the emphasis is not only on the specialized employees, but also on generalists.

One other aspect raised by Kang and Snell (2009) is the learning process and different capacity between generalists and specialists to gather and use different types of knowledge. Specialists easier adopt new in-depth knowledge and diversify knowledge in a narrow range of parameters. There may reduce the ability and willingness to exchange and combine their new knowledge outside their specialized area. Generalists are shown to have more broad multiple knowledge bases which mean they are more available for alternative tasks and the likeliness to discover and apply new knowledge in the future (Kang & Snell, 2009).

3.12 Individuals in groups

We are all individual people and in organizations individuals are formed into groups. Membership to a group means that one have to set aside ones individualism for the benefit of the organizations targets and means. And a good organization is one where the individuals' different skills and creativity are mixed into effective groups or networks of groups (Ott, Parkes & Simpson 2003). With the division of labor, group seems to attract people with similar backgrounds; i.e. profession, education and training, socialization and expertise. A similar background leads to similarity in values, beliefs and behavior. Indifferent of background, all groups tend to develop some sort of subculture in their working team and that is especially visible in teams that are very purposeful and specialized (Ott, Parkes & Simpson 2003).

4 Interpretation and Analysis

In this chapter there will be reasoning around the data collected in previous chapters. The data will be commented, interpreted and discussed with the main goal to fulfill the purpose of this thesis. I will give light to possibilities and problems for generalist and specialist groups in different structure contexts.

4.1 Data category form the interviews

When analyzing the interviews, the different questions can be divided into categories to help the analysis, as stated in the method chapter. In the table below is the categories I find that will help the analysis process to structure data.

Research Category	Interview Question
Introduction and Orientation to the subject	How do you define a generalist/specialist?
Introduction and Orientation to the subject	Give example of what an generalist/specialist could do or are doing in your organization?
Individual	What are the carachteristics of a generalist? How does a generalist act?
Individual	What are the carachteristics of a specialist? How does a specialist act?
Organizational Structure influence on generalists vs specialists	Are there any differnecies how generalists/specialists understand the organizations targets?
Organizational Structure influence on generalists vs specialists	Are there any differnecies how generalists/specialists can contribute to the organizations targets?
Group Structure opportunities/problems regarding generalists & specialists	What are the difficulties/opportunities with too many generalists in a group?
Group Structure opportunities/problems regarding generalists & specialists	What are the difficulties/opportunities with too many specialists in a group?
Group Structure - work division	What difficulties could a specialist have doing a generalists job?
Group Structure - work division	What difficulties could a generalist have doing a specialists job?
Group Structure - work division	What can a generlist contribute with to a specialists job?
Group Structure - work division	What can a specialist contribute with to a generalists job?
Communication	Describe difficulties and opportunities in communication between generalists and specialists.
Other	Any other reflection in this subject?

Figure 4-1 Interview questions and contribution to a category for analysis

There is a more detailed summary of the interviews and the responses from each person in the Appendix, at the end of the thesis.

4.2 Definitions and validity

Summarizing interviews and literature I find that there is a quite clear perception of what a generalists' and a specialists' characteristics are.

Generalists are seen to have shallow knowledge about a lot of things, they are flexible, they are aware of the wider perspective of what is going on around them rather then the details and deeper know-how. They are able to summarize and see structures and links between objects and course of events. Sometimes they can seem to be unfocused and the division of work can be an issue and the division of responsibility. It is often easier to replace a generalist and back-up the work if they for some reason not are at work. Generalists often can solve problems too quickly when they do not have the right and correct information. A generalist is one person that can work with different items at the same time and able to grasp the context. Generalists are often seen as persons willing to know more about other things "outside the box". Generalists tend to be more subjective in their judgments.

Specialists are often rational persons and what they do is mostly based on logic and they are seen as being objective. They are often focused on doing one or few things and they want to do it perfect with high quality. They do not speak until they are really sure and have facts that can support them, it is important that everything is correct. Often they can be seen as protective persons and not willing to change scope of work. They have a high knowledge about what they are working with, or a deeper knowledge. A specialist has fewer opportunities to change jobs, meaning that they could be more vulnerable when there are changes. Communication with a specialist could be difficult since the other party may not understand the technical terms and the counterpart might not have the right knowledge.

It is also worth mentioning that it could be seen as generalists are specialized on having overview, be able to structure and conclude etc. And yes, that is a valid remark, but here in the rest of the thesis analysis the distinction is kept according to the reasoning above.

4.3 Differentiation versus Integration

The first theorists, such as Smith and Taylor all favored specialists. I assume the reason why they did that is that they could show with the structured work and division of work, they did people more specialized on one task in stead of several. When they managed this work they could rather easily show great production increases and therefore it was easy to say that that was the right way to go. This maybe more true for blue-collar workers, but Taylor also named managers as specialists on managing etc. and hence also valid for white-collars. Here there will be no distinction between blue and white collar when reasoning.

These early organizations were however vey hierarchic and looking at pure production models compared with the more modern way to see things are according to Toyotaism (Jaffe (2001) where the structure is less hierarchic. This correlates with my own experience that where there is less hierarchy there will be a need for people to be more involved and for the people to take bigger responsibility since there is no structure to hide behind, i.e. the integration is high.

As stated in the literature (Jaffe 2001) high integration has the risk that individuals will do everything. When there are directions and processes to follow I assume the risk is that you feel the responsibility for too many things and that could lead to a stressful situation. So being good at many things, able to multi-skilling, can give the effect of multitasking. I empirically understand it that generalists are more of a multi-skilled person and therefore the risks for generalists are that they can be involved in too many things and the workload can be too high. Therefore the higher the integration, the more the generalist has to use his or hers knowledge to be able to make conclusions about how to prioritize the work to be able to avoid getting too stressed. My interpretation is that a specialist seems to be less sensitive to differentiation and integration issues, meaning that it does not influence the specialist to the same great extent as to the generalist, if the integration is high or low. My proposed statement here is; as long as the specialist will be able to focus on to develop the expertise, the specialist will have the possibility to perform a good work. I assume that it is easier to influence things in a more integrated organization, however, being a specialist often have a high credibility nondependent of what type of organization there is.

4.4 Bureaucracy and hierarchy influences on the generalists and specialists

In a very bureaucratic organization flexibility is low (Nicholas & Steyn, 2008). It may be so that a generalist fits worse in a bureaucracy than specialists. In a bureaucracy all rules, procedures etc. are in place and they have to be followed. The generalist will probably have difficulties with that type of environment, since there is less need of someone who have the ability to overview and see structures. In an environment where all work is already structured in a specific manner the logic is that possibilities to influence are more restricted. The more specified a task is the less need of a multi-skill is required in my opinion. The positions are given to the person with the exact match of qualification according to Weber (1964), and that would be easier to do with specialists who already has the skill or could be trained into the position. Since bureaucratic organizations are less responsive to changes (Jaffee 2001), that could also be interpreted as evidence that the specialists fits better based on the empirical findings that specialists are seen to be less reactive to a flexible environment.

Horizontal, or decentralized, organizations are better to manage changes and react to changes, according to Nicholas & Steyn (2008). In organizations where the need is to react, change focus, redefine targets, simultaneously handle a wide range of problems the generalist would feel more comfortable according to my interpretations. The risk is however that in times of changes the lack of focus jeopardize that specialized knowledge gets lost and that undermine the expertise knowledge is undermined because in my reasoning, the more decentralized, the more spread is the knowledge. This could also be valid for horizontal organizations in general as I see it, because the depth in knowledge will be less if "everybody has to know everything" (Forslund 2009).

4.5 Work division and Group structure

In literature there is stated that less intellectual capacity is needed for specialists (Forslund, 2009), meaning less ability to decision making, analysis and planning. With that definition of intellectual capacity I might agree to the statement with the addition that in general that is

what a generalist does. However the wording does not seem very well chosen in this case. A specialist can have a high intellectual capacity in terms of understanding, making difficult calculations etc. I know that also a specialist makes decisions, analyze and plan the work.

I can not find any evidence that favors and make one better then the other. No one seems to rank the generalist over the specialist or vice versa, both are valuable to the organization in modern thinking. My own interpretation is that a strength relation between them only exists in specific situations, for example getting advice on complex technical information where I assume that everybody ranks the specialists knowledge as extremely important. In most cases, in most organizations however, there must be beneficial for being either or, that both a generalist and a specialist could have a career development. Traditionally it has been mostly generalists that have had a career since most managers and project leaders etc. are generalists according to my understanding. Nowadays, I have personally seen that is changing and specialists have their own career ladder to climb within organizations.

Grouping in general means bringing people together (Nadler & Tushman, 1988). From my data collected I find that when grouping specialists together in one group the advantages are that they can share the same resources, there is a possibility to learn from each other concerning deeper knowledge and they are more likely on the same level psychologically. Since they are specialists their jobs and disciplines are probably clearly divided between them and the work is defined. The found problem of grouping specialists together could be narrowness, that the identification with the overall organizations' target is reduced, since everybody is focused on their part of the value chain. The other negative impact found is that there could be conflicts arising if specialists become protective about their own work if they are unwilling to share and see co-workers as competitors. One great challenge of grouping specialists together is the supervision of the group as I understand it. The specialists need supervision, or managing, that brings the groups work forward in the right direction since the risk is otherwise that specialists get stuck too long in details working on details until the output is perfect. The communication will also probably be a challenge here, especially when level of differentiation is high between groups. The findings from the collected data in the study shows that one challenge for managing a group of specialists is to get the specific areas into the overall context, and to keep up the speed of the deliveries required from the organization.

Grouping only generalists together could be positive since that group would be reactive, flexible and get a good momentum towards the goals. The risk I can see is however that the work split could be an issue, since all persons might work on the same things since being generalists. Another aspect is that they could accept to work on too many projects since they are able to do little of everything and that could result in high stress levels. The risk is also that knowledge is to shallow and conclusions can be made on false grounds. The complexity of work is reduced when there are no specialists involved and the quality of the output could be poor basically due to lack of knowledge and this is one of the most severe problems as I see it since that could overturn the whole business.

Mixing generalists and specialists in several groups leads to diminishing economies of scale since the resources needs to be split among different groups (Nadler & Tushman, 1988). However, one positive effect could be that the communication between groups should be easier, since there are persons in several groups that have the generalists work and therefore is

more interested in the overall picture and the coordination function between groups. The benefit of mixing generalists and specialists is also that they learn from each other because they have different approaches to solve problems according to my findings. A generalist may influence the specialist to be able to reach to conclusions faster without having to know exactly everything, but just based on what is known right now. The specialist could influence the generalist to know more details before making decisions etc.

5 Conclusions and further study

5.1 Conclusions

There is no optimal way to structure an organization. However, when isolating certain factors, such as looking at generalists and specialists, it is possible to find out what the most appropriate structure could be.

There is always a trade-off between integration and differentiation issues when debating the different organizational structures (Jaffee 2001). High integration, as often found in horizontal oriented organizations, seems to be positive for generalist groups due to their urge to take a part in the whole and their willingness to participate in different tasks. The same conclusion could not be verified for specialists, regarding the integration-differentiation aspect. A specialist fits in both organization forms with the restriction that the environment is quite stable around the specialist. In most cases hierarchical and bureaucratic structures suits specialists quite good. However it is an environment where generalists will try to move away from since the need for multi-skills are less.

- Generalists most likely do fit better in organizational forms such as simple structure, adhocracy and network organizations.

- Specialists tend to prefer bureaucracy or functional/unitary organizations.

In the matrix organization, there is both room and a need for both the generalist and the specialist. So here is probably the organization type that will fit both of them the best and where both can contribute to the targets and goals. Also a multidivisional organization form would fit both.

To get a more specific answer to the initial research question is most probably possible in theory and here I agree with the thoughts of Jaffee (2001) that it is more valuable to analyze different types of organization then to try to grasp the meaning of them by one sentence definitions. So a much deeper study of different organizational types would help this issue further. One other reason for why a more specific answer is not possible is that according to the contingency theory that the best way to organize depends on the nature of the task environment to which the organization relates (Scott & Davis 2007). The contingency theorist has therefore moved away from the work of for example Taylor and Weber, who tried to find the optimal organization.

Generalists and specialists seem to handle changes differently, since the degree of flexibility tends to be higher among generalists. However, specialists will settle easier since their work is often easier to specify

5.2 Further study

When doing the research for this study I grew to understand that there are so many factors that influence the structure of the organization so the question regarding organizational structure is really a complex issue. However searching for information for the thesis also gave insight to areas of interest related to the original subject.

One way to view upon the specialists versus generalist issue is according to Pashke (2004) that there is a need for more generalists in today's organizations. There has been a focus on specialists for along time and while our environment gets more and more complex and the mankind knowledge grows greater and greater, more and more specialists have been fostered. However, now there is a need to get more generalists into the world and the reason for that is that the specialists get more and more specialized and the gap increases between them and therefore generalists are needed to overcome communication gaps. The trend in society today is that specialization is overemphasized according to Pashke (2004). From this one possible research question could be: Is there a lack of generalists?

Another topic to look further into is the role conflict that might appear between generalists and specialists. Questions related to this subject are highlighted in the article by McKenna, Sinead and Bradley (2003) where they bring this issue up in the nursing discipline. Here they investigate the benefit of these different roles and touch on the subject if there is a conflict. Further study could be to deeper look into the questions: Is there a role conflict between specialists and generalists? Is there a difference in the value of being a generalists or a specialist?

One item that also could be of interest for further study is where this thesis starts off. In the introduction I mention a company where they had the feeling that they needed specialists in the groups to be able to meet the new requirements from the customers. A question arises from this wish or statement: When do we know there is a need for more specialized functions in an organization? What is the trigger for creating a specialist function within an organization?

Here I also mention that the requirements from customers and the environment are changing, therefore it could also be of interest to investigate the possibilities and difficulties there are in different life cycle phases of the organization. In an expanding phase I am sure the need of generalists and specialists differ compared to a stable phase etc. Hanks and Chandler (1994) investigates the patterns of specialization in growing high technology firms, and here is one basis to start off with if investigating life cycle effects on organizational structure.

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Appendix

Interview questions and responses from interviewed persons A, B, C and D.

Interview Question

1	***How do you define a generalist/specialist?***
A	A generalist has a wider knowledge, a sort of "jacks of all trades". A specialist has a narrower field of work, more specialist knowledge.
B	A generalist is a person that can handle a lot of different things and is able to have an overview of many various things. The specialist is more detailed in a specific area.
C	A generalist knows little about many things, and a specialist knows a lot about fewer areas.
D	A generalist has an ability to quickly get into issues due to its overview perspective. A generalist is able to make conclusions based on the whole. A specialist is someone who digs deeper into one question at the time to get to the bottom of things.
2	***Give example of what a generalist/specialist could do or are doing in your organization?***
A	A generalist is persons involved in managing the business overall. One generalist is for example IT responsible, location responsible, executes simpler works in the studio, a mix between acting as a support function and executing tasks. Almost everybody are generalists. A specialist is one person dealing with video graphic and has no support function. In general a generalist has a support function while specialist is involved in one thing at a more advanced level.
B	A generalist is working with different suppliers, could handle those in a wide range of questions, structure and se the connections between different components, technology, projects etc. The specialist is one person for example specialist to deal only withy quality items or purchasing systems.
C	A generalist should be able to see connections and the whole. A generalist is a person that handles all questions regarding a client and is able to make conclusions about the way the client will be affected when a certain question arises. A specialist is one person that should be able to focus on an area and able to dig deeper regarding specified tasks. A Business analyst, for example, is one who makes a deep analysis of the result for a client. That specialized person also makes calculations and recommendations to be able to maximize the business result.
D	Generalists mostly have the function of project leaders, managers and project coordination. Specialists are more involved in one thing, for example writing software for one application. In general, there are too few generalists. And slow, one could wish for specialists in being managers and leaders.
3	***What are the characteristics of a generalist? How does a generalist act?***
A	Curious. Open minded and probably a more holistic view on the organization. More process focused.

B	Are able to have an overview perspective, able to connect things to each other, see consequences of actions and strategies. A generalist is able to learn quickly about different things, and it is not necessary for a generalist to know all details. A generalist is often curious and wants to understand how things relate to each other more then knowing all the details.
C	A generalist can see connections and the whole. Can make conclusions and understand the effect on other areas. A generalist has difficulties to go deeper into details and therefore quality on the output can be suffering. Also, a generalist is divided between many tasks and also therefore the output can be suffering quality wise.
D	A generalist is able to summarize. Knows little about a lot of things and willing to learn new things.

4   *What are the characteristics of a specialist? How does a specialist act?*

A	Target focused, more quantitative targets will be fulfilled. A linear thinking everything has a stop and an end.
B	A specialist is more into details and need to keep focus on that. A specialist is someone who has a specific expertise that is unique for that function. Often there is no need for a specialist to be able to have an overview perspective outside the specific area.
C	Analytical and oriented towards details. In need of clear directions and a clearly defined area to work within. Could be seen as the opposite of a generalist.
D	A specialist is very accurate and precise, does not leave anything to chance. Focused on details. Find out the truth. Based on facts and objective.

5   *Are there any differences how generalists/specialists understand the organizations targets?*

A	There might be, Specialists may have a feeling that they are just a part of the whole while the generalist have amore holistic view and feels that he/she contributes to the whole.
B	In general the interest are different between specialists and generalist so therefore they can interpret the targets differently
C	A generalist with the overview perspective might understand the overall targets in a better way. The specialist can however be more focused to reach the operational targets without reflecting too much on the consequences for other parts of the organization that can affect the overall targets.
D	No. However, there could be a risk that people mix up their own interests and targets with the overall organizations.

6   *Are there any differences how generalists/specialists can contribute to the organizations targets?*

A	No, that is a question of leadership.
B	Not really. However if the target changes there is a risk that specialists act more protective and is less willing to change if their area is affected of for example a rationalization.
C	They contribute in different ways. Both needs leadership to guide them at certain points in time.
D	No. However, a generalist needs more frequent managing towards the targets since that person is working with several things and therefore easily can lose the focus on the targets.

7   *What are the difficulties/opportunities with too many generalists in a group?*

A	Lack of focus is a risk. The risk is also that the sufficient knowledge is missing. The work split and share of responsibilities can be an issue since too many works with a little of everything. The possibilities with generalists are that you could get a wider span and thereby greater allowance. The organization becomes flexible and it is easier to back up for each other.

B	Problems: work split and tasks, there is a risk that everybody wants to work with the same things. No one to ask for details and help in specialist questions. Opportunities: the organization can easily adapt to changes and the strength is that you can cover a wide range of tasks and knowledge. However you miss the details.
C	The delivery is not delivered with the highest quality. There is no expertise knowledge. It could be stressful for employees with too wide roles and no time to focus in certain areas. However, it is good with generalists in a customer perspective. And the generalist can bring specialists knowledge when needed, if specialists exist.
D	Too shallow knowledge, a risk is lack of deeper knowledge leads to poor quality.

8 *What are the difficulties/opportunities with too many specialists in a group?*

A	The politics can be a problem since everybody is fighting for their specific niche; people can become very protective and do not want to share knowledge since they are vulnerable to changes. If there is no competition between the specific areas there possibilities are that all specialists could gain more knowledge. This organization might have a problem of not being flexible and that the overview perspective is not there.
B	There is a need of persons who can link connections and see the whole perspective and that is missing if there are only specialists. Too many details can make the output too massive and may not be practical to use.
C	Specialists deliver high quality on the tasks. However, there can be more handovers internally in the organization. The demand on leadership is high to be able to reach the overall targets.
D	Progress could be too slow. There is too much focus on the details so that the overview perspective can be missed, for example the customer perspective that often is seen as more "diffuse" by specialists who wants all facts and be objective.

9 *What difficulties could a specialist have doing a generalists job?*

A	Since not having the right competence to handle a split of various items, the job can not be performed in a satisfying way.
B	A specialist could get stressed by having to deal with many things they do not have to full knowledge about, since a specialist feels confident in knowing details. The linking of information and the overview perspective is missed.
C	A specialist has a difficulty to see outside the box, and could have difficulties to accept changes in target. Will probably have difficulties in giving recommendations and make conclusions that are needed.
D	A specialist would probably work too much to be able to get in control of all details behind the tasks a generalist normally handle.

10 *What difficulties could a generalist have doing a specialists job?*

A	The work is not carried out in a thorough way because there is a lack of routines and knowledge.
B	Lack of focus, and lack of interest of knowing all details and therefore not able to do the work. It will not be satisfying to the generalist personally, could be a stressful situation. Difficult to find the purpose of the work carried out.
C	Will have problem to accept the specific target and difficulties of requiring the deeper knowledge that is needed. A generalist would like to work outside the box and be able to make conclusions based on overview perspective.
D	The work will not be performed in a thorough and precise way since there is a lack of knowledge. The risk is that the output will be faulty.

11 *What can a generalist contribute with to a specialists' job?*

	A	A generalist could give new input to the specialist, since having a different perspective on things. The work can also be questioned, because sometimes specialists et too detailed and focused.
	B	To be able to understand that there is not always the need of knowing all the details in every thing. Sometimes it is needed to get a best guess to be able to move towards a set up target. A generalist can contribute of getting quicker answers.
	C	To think about prioritizing and be more flexible. To widen the perspective and to question.
	D	Exchange of thinking and getting different perspectives on the tasks. Try to give an understanding of the whole perspective and the context.
12		***What can a specialist contribute with to a generalists' job?***
	A	Also to question the work done adding some knowledge and details to the tasks.
	B	That it is not always a good thing to be able to talk about many things without knowing details behind them. Sometimes a generalist makes mistakes since not knowing enough of an issue.
	C	Become more detailed and to focus on the specific targets.
	D	Exchange of thinking and getting different perspectives on the tasks. Increase quality!
13		***Describe difficulties and opportunities in communication between generalists and specialists.***
	A	Terminology can be an issue. A generalist could see solutions easier but it might not be the right solution since they do not have the knowledge. The issue is that a generalist could make the problems smaller that they are, and the other way around. This could lead to frustration from both sides.
	B	Since everybody is focused on their perspective there could be a clash when not understanding the questions and details. It is also difficult to get a correct answer form a specialist if you are not sure of what exact question to ask.
	C	In general, it is more frustrating for a specialist to work with a generalist since "they do not know what they are talking about", A generalist can of course get frustrated with a specialist that wants to focus on details too much, but in the end it is always safer to have someone by your side who are sure of the details.
	D	A specialist often thinks that you really have to know all the details before you can speak up. This could be an issue since a generalist often talks without knowing all details.
14		***Any other reflection in this subject?***
	A	There should be a balance between specialists and generalists.
	B	It is important that there is a career path for both specialists and generalists, since their jobs have different types of focus and requires different competency and talent.
	C	Both are needed in a good combination.
	D	We definitely need more generalists in our organization.