IT Governance & Management

An ability to be more efficient and competitive

Sadaf Salavati
IT Governance & Management

An ability to be more efficient and competitive

Supervisor
Birgitta Fagerström Kareld

Author
Sadaf Salavati
This thesis is written about IT Governance and Management, a phenomenon which can result in higher efficiency and stronger competition for the organization or enterprise in mind. By implementing good IT Governance and Management, IT can support business goals and optimize investments in IT while at the same time IT manages risks and opportunities.

The main case study is done at County Administrative Board of Kronoberg where Kronoberg County is counted as one of the smaller counties in Sweden. The County Administrative Board of Kronoberg has an awareness of the importance of good and effective IT Governance and Management even though there is room for improvement.

Keywords
IT Governance, Management, Corporate Governance, CobiT, Balance Scorecard, Governance Arrangement Matrix, Governance Performance Survey, County Administrative Board of Kronoberg
Denna uppsats är skriven om IT Styrning och Management som kan resultera i högre effektivitet och konkurrenskraftighet i en verksamhet. Genom att implementera effektiv IT Styrning och Management kan IT stödja verksamhetsmålen och optimera investeringar gjorda inom IT samtidigt som IT hanterar de risker och möjligheter som finns inom en verksamhet.

Fallstudien i denna uppsats är gjord på Länsstyrelsen Kronoberg där Kronobergs län räknas till ett av de mindre länen i Sverige. Länsstyrelsen Kronoberg har en medvetenhet om betydelsen av effektiv IT Styrning och Management även om det finns rum för förbättringar.

Nyckelord: IT Styrning, Management, Kollektiv Styrning, CobiT, Balance Scorecard, Governance Arrangement Matrix, Governance Performance Survey, Länsstyrelsen Kronoberg
Executive Summary

During the last decades has IT from the role of only being a technology provider, now become a strategic partner. In today’s organizations and enterprises it is important for CEO’s and CIO’s to increase their understanding and knowledge in the role of IT in the enterprise. IT is one of the most important increasing elements of all organizations and together with effective IT Governance IT can support business goals and optimize IT investments while at the same time it can manage risks and opportunities.

Case Study

This study maps and identifies the current IT Governance and Management solution of the County Administrative Board of Kronoberg, one of the smaller counties in Sweden consisting of 175 employees, the County Governor and Vice County Governor counted for. Further will recommendations for improvement of the current IT Governance and Management be presented to a focus group at the County Administrative Board.

In order to achieve good IT Governance there are three questions to answer where as two follows; “What decisions must be made and who should make them?” In order to map and identify the current IT Governance and Management of Kronoberg County Administrative Board, Weill and Ross’s Governance Performance Matrix and Governance Arrangement Survey have been used. The result of the Performance Matrix shows a pattern where the most decisions in the enterprise are taken by the business monarchy archetype, the top managers and the executive managers. Input for the decisions is given by various archetypes depending on the importance and type of decision where the IT specialist has a big influence.

The Performance Survey indicates that the County Administrative Board of Kronoberg lies at the positive scale regarding the importance of their outcome and how well their IT Governance meets the different outcomes. The respondents believe the areas where their IT Governance is most effective are within units where there have been good strategies supporting the IT Governance. The area where the IT Governance been less effective differs and so do the reasons why.

Based on interviews conducted with the appointed Vice County Governor and the IS chief it can be seen that the County Administrative Board has awareness and understanding of good IT Governance and Management, what role IT can play in their enterprise and what areas could be improved.

Recommendation

The knowledge and understanding of what role IT can have within the enterprise is at a good level in the County Administrative Board of Kronoberg but there are limitations and room for improvement. In order to achieve optimal IT Governance and Management the County Administrative Board and their top managers need, as
the IS chief points out, higher level of knowledge in what role IT can have within the enterprise.

The executive managers need the support of knowledgeable personnel within the IT sector while it still is important to not forget the need of each unit and the external enterprises while achieving the goals and demands set by the Central Government.

The County Administrative Board of Kronoberg sets up an activity plan each year were all strategies and goals for the coming year are described. This is something they should continue with since it is one of the crucial steps for effective governance which describes what needs to be achieved and how IT can be used to achieve these goals and strategies.

Further do the County Administrative Board need to bring in a standard for evaluation and follow-up of their projects. This will lead to a better overview of the strengths and faults of each project and the role IT had, resulting in better and more effective use of IT in coming projects and more effectiveness and higher return on investments.

IT Governance is not a one time project and there is no quick fix in the pursuit of good IT Governance. It should not be seen as a project but rather an ongoing process.
PREFACE

Writing this thesis has been similar to a rollercoaster ride with happiness, frustrations, sleepless nights, doubts and achievements. It has been a true challenge which has led to a lot of knowledge and new education.

I want to take this opportunity to thank and acknowledge the individuals who have helped me during this time. Individuals who have given me their time, supported me and shared their knowledge and experiences which has made this thesis possible:

My Supervisor:
Birgitta Fagerström Kareld

My Case Study Enterprise:
County Administrative Board of Kronoberg;
- Michael Sundholm
- Vice County Governor, Lennart Johansson
- All division chiefs
IT Governance and Management Enterprises

Opponents, friends and family

Thank you!
To write this thesis without your help would not have been easy.

Växjö, Sweden June 2007

-------------------------------------------------------------------------------------------------------------------

© Sadaf Salavati
# TABLE OF CONTENTS

## 1. INTRODUCTION

1.1. BACKGROUND ................................................................. - 1 -
1.2. PROBLEM DISCUSSION ................................................... - 2 -
  1.2.1. Problem formulation .............................................. - 3 -
1.3. PURPOSE .................................................................. - 3 -
1.4. TARGET AUDIENCE ..................................................... - 3 -
1.5. DELIMITATIONS .......................................................... - 3 -
1.6. CONCEPT FORMULATION ............................................. - 4 -
1.7. DISPOSITION ............................................................... - 5 -

## 2. METHOD

2.1. CHOICE OF METHOD ..................................................... - 6 -
2.2. RESEARCH APPROACH .................................................. - 7 -
  2.2.1. Case study .......................................................... - 8 -
  2.2.2. Constructive research approach ............................ - 9 -
  2.2.3. Quantitative and Qualitative approach ................. - 10 -
2.3. CHOICE OF METHOD FOR DATA COLLECTION .......... - 11 -
2.4. VALIDITY AND RELIABILITY .......................................... - 12 -

## 3. THEORETICAL FRAMEWORK

3.1. CORPORATE GOVERNANCE ............................................. - 13 -
3.2. IT GOVERNANCE .......................................................... - 15 -
  3.2.1. Defining IT Governance ......................................... - 15 -
  3.2.2. Argument in favour of IT Governance .................... - 16 -
  3.2.3. Successful IT Governance ...................................... - 17 -
  3.2.4. IT Governance Failures ......................................... - 18 -
3.3. IT GOVERNANCE DECISIONS ......................................... - 18 -
  3.3.1. IT Governance Decision Areas ............................... - 18 -
  3.3.2. Archetypes for Decision Rights .............................. - 20 -
3.4. IT GOVERNANCE FRAMEWORK .................................... - 22 -
  3.4.1. CobiT ................................................................. - 22 -
  3.4.2. Balanced Scorecard ............................................. - 23 -
  3.4.3. Benchmarking possibilities .................................... - 24 -
  3.4.4. Other options ..................................................... - 26 -
3.5. MANAGEMENT ............................................................ - 27 -
  3.5.1. Defining Management ............................................ - 27 -
3.6. IT GOVERNANCE VS. .................................................. - 29 -
  3.6.1. …IT Management? ............................................... - 29 -
  3.6.2. …Corporate Governance? ...................................... - 29 -
3.7. SUMMARY IT GOVERNANCE AND MANAGEMENT .......... - 30 -

## 4. EMPIRICAL FRAMEWORK

4.1. CASE STUDY ............................................................... - 32 -
4.2. WHAT IS ................................................................. - 32 -
  4.2.1. …IT Governance and why is it necessary? .............. - 32 -
  4.2.2. …Management? ................................................... - 33 -
  4.2.3. …the outcome of good IT Governance and Management? - 33 -
4.3. COUNTY ADMINISTRATIVE BOARD .......................... - 33 -
  4.3.1. Organization ........................................................ - 34 -
  4.3.2. IT Governance and Management Goals and Decisions - 36 -
  4.3.3. Results ............................................................... - 37 -
1. INTRODUCTION

The introduction chapter views the background to the subject of this thesis followed by a problem discussion. The purpose, the target audience, the delimitations, the main concepts and the disposition of this thesis are presented to emphasise the understanding of this subject area.

1.1. Background

Information Technology

“IT refers to the hardware, software and telecommunications networks used to manage information … information and communications technologies used to capture, process, store and transport information in digital form.”¹

Information Technology, IT is the technology that helped enterprises to perform more efficiently and to expand the business into new highs right from the first day. IT has become one of the strongest pillars in an enterprise where many functions would not be possible to perform without. During the years IT has got different functions in an enterprise and is today an essential part of the organization. From the role of only being a technology provider IT has now become a strategic partner. (*Sallé M.*, 2004)

The dependency of IT has become more necessary, where organizations use technology for managing, developing and communicating elusive assets such as information and knowledge. To be successful in an enterprise information and knowledge which often is provided and maintained by technology, must be secured, accurate and reliable, but also provided to the right person at the right time and at the right place. (*Grembergen W.*, 2003)

In the modern days CEO’s and CIO’s must enhance their understanding in the role information technology has in an enterprise and increase their expertise in this area. Management of IT is no longer just for managers but effective use of any IT solution will be traced to the top of the hierarchy. (*Schildt K.A.*, *Beaumaster S.* & *Bailey S.*, 2006)

The County Administrative Board

Sweden is divided into 21 counties each having its own County Administrative Board and County Governor (*LST, Swedens County Administrative Boards*). Each County Administrative Board functions as a right hand of the Swedish Parliament.

¹ Chaffey D. & Wood S., 2005, page 42
and Central Government with the responsibility to seeing and ensuring that their policies and decisions are implemented. The County Administrative Boards roles include: (LST, The Roles of the County Administrative Boards)

- Seeing to that national targets are attained
- Coordinating the varying interests of their counties
- Promoting the development of their counties
- Setting target to be attained at regional level
- Ensuring that the rule of law is not infringed

1.2. Problem discussion

The fact that IT is used more frequently all over the world is not a new discovery. One appealing characteristic with IT is that it can be used offensively to create new business opportunities, at the same time as it can rationalize by simplifying routines and automate the enterprises processes. (Fredholm P., 2004)

Another fact is changes. Changes have been a constant reality ever since primeval times, although recently changes are accelerating faster than ever before and are leaving its trace and effect on businesses and organizations. Today businesses can not be conducted the way they where a decade ago, not if they intend to continue being competitive. The changes include how the business interacts with customers, how it manufactures goods, and how the business is organized and managed. (Gold-Bernstein G. & Ruh W., 2004)

To reach positive results within the enterprise the IT system and organisational assignments must be harmonised. Fagerström (2003) states lack of organizational support could result in non IT-related problems being allocated as IT-system related issues. This implies that the focus will only be on solving technical problems and not on organizational changes. (Fagerström B., 2003)

For quite some years a number of organizations have been successful despite weak IT Management. According to Weill and Ross (2004) information, and consequently IT is one of the increasing important elements of organizational productivity, services and foundation of enterprisewide processes. (Weill R. & Ross J. W., 2004)

The IT Governance Institute (2003) believes that effective IT Governance helps to ensure that IT supports business goals and optimizes business investment in IT as well as it manages IT related risk and opportunities more correctly. (ITGI, 2003)

With the known fact of the increasing importance of IT and the need of IT Governance within an enterprise to be able to stay competitive the following problem formulations need to be answered:
1.2.1. Problem formulation

- How can the IT Governance and Management within an enterprise be mapped and identified?
  - *What do the results show?*

- How could the current IT Governance and Management solution of the contemplated enterprise be improved?
  - *Why and in what way?*

**Question specific for the enterprise of the case study**

- What response can be awaited from the chosen focus group at The County Administrative Board to the improved IT Governance and Management solution?

1.3. Purpose

The purpose of the thesis is to emphasize the importance of IT Governance and Management. To present why it is important to implement right IT Governance and Management while describing that organizations and enterprises with the right governance and management can be more efficient and successful.

1.4. Target audience

This study addresses to organizations and enterprises that are interested in Management and IT Governance, to Kronoberg County Administrative Board, but also to all those whom have an interest in this area.

1.5. Delimitations

For effective IT Governance there are three questions that must be taken into consideration (Weill & Ross, 2004). This study will focus on the first and second question; “What decisions must be made to ensure effective management and use of IT?” and “Who should make the decisions?” The third question only will be mentioned.  

In an organization there are three levels of management for decision making, this study will focus on the strategic management but will mention the other management levels as well.

Kronoberg County Administrative Board will be used in this study as an example enterprise to show how organizations with IT Governance and Management can make their business more effective and successful. This study will only map and identify how the enterprise is governed and managed today and recommend how

---

2 Full descriptions of these three questions are presented in chapter 3.2. 1. Defining IT Governance
3 These three management levels are presented in chapter 3.5. Management
IT Governance and Management can be used to make the business more efficient. It is important to have in mind that this study will only focus on Kronoberg County and will not examine the Swedish County Administrative Board as one unit and neither what direct role the Central Government has in this process. This is because getting involved with all 21 counties in Sweden and the Swedish Central Government would result in an incredibly big study which would require a lot of time.

1.6. Concept formulation

To ease the reading and understanding of the study some concepts and acronyms are presented and explained in this section.

**BSC:** Balance Score Card, for full explanation and definition see chapter 3.4.2. *Balance Scorecard*

**CAB:** County Administrative Board. An acronym sometimes used, but not recommended and therefore this study will only use this acronym in the reference list.

**CEO:** Chief Executive Officer, the highest ranked corporate-, administrative-, executive officer in charge of the total management of a corporation, organization etc.

**CIO:** Chief Information Officer, head of the information technology group within an organization.

**CxO:** Top executives with “chief” in their title – CIO, CEO etc. Also collectively known as C-level or C-suite.

**CRA:** Constructive Research Approach, a research approach suited for researches done in a running organization. For more details see chapter 2.1.2. *Constructive research approach*.

**IM:** Information Management, is characterized by the phrase ‘Getting the right information to the right person at the right place at the right time’.

**IT:** Information Technology, deals with the use of computers and computer software to convert, store, process, transmit and retrieve information.

**ITGI:** IT Governance Institute, established 1998, assists enterprises to make IT successful in supporting the enterprises’ missions and goals. When referring to the IT Governance Institute in this study the acronym ITGI will be used.

**LST:** Short for Länsstyrelse, the Swedish word for County Administrative Board.

**PwC:** PricewaterhouseCoopers, provides industry-focused assurance, tax and advisory services in four different areas; corporate accounting, risk management, structuring and mergers and acquisition, performance and process improvement.
1.7. Disposition

This study is divided in seven different parts where the first part gives an introduction to the subject and understanding about the aim of the study. Next the methodology used in this study is presented. Based on the used method the theoretical data is presented. In this part different theories available in this area are described to give the reader a good overview of the subject. Based on the collected theoretical data the empirical study is done and presented in the following chapter. The fifth part of the study presents the analysis where the empirical data is compared to the existing theory and leads to the conclusions of this study. In the last part the reached conclusions and the completed study is discussed.
2. METHOD

This chapter presents the methods used to reach the purpose of the study. General scientific methods and approaches used to collect and analyse data are presented. Furthermore, the methods for achieving conclusions based on the theoretical and empirical data are discussed. This is followed by a description of the method on how the research quality will be secured.

2.1. Choice of method

For all problem formulations\(^4\) the same method will be used. Figure 2:1 shows an overview of how the thesis problem formulations are connected to one and another.

![Figure 2:1. Overview of the problem formulations](image)

When the literature study is done the enterprise’s current governance and management will be mapped based on empirical data. After that the result will be analysed and differences are identified based on the theoretical framework. For the second problem formulation a recommendation of how the enterprise should be governed and managed will be developed and hopefully presented to a focus group within the enterprise. As a final input to the study the feedback and result of the presented recommendation will be analysed and assessed.

Since this study mostly is based on interviews I will use an overall inductive method. According to Backman the inductive method results in a theory based on gathered information and empirical data (Backman J., 1998). The inductive method also implies to find common, general assumptions based on empirical data. It is important to be aware that assumptions based on the inductive method are more or less probable and can never be hundred percent certain (Thurén T., 2000).

To do a correct study and achieve correct, accurate answers and conclusions other method approaches beside the inductive method will be used. The following chapters will present the different approaches and describe how they will be implemented and used in this study.

---

\(^4\) For the questions see chapter 1.2.1 Problem Formulation
2.2. Research approach

The choice of a research approach should be determined depending on the purpose of the study and based on the research problem. The mission of the study is to generate new knowledge during reading processes, discussion and investigation. (Yin R. K., 2003)

According to Yin (2003) there are three different questions that help determine the strategy for a research:

1. The type of question posed
2. The extent of control an investigation has over actual behaviour events
3. The degree of focus on contemporary as opposed to historical events

Yin (2003) also presents relevant situations for the study based on the different research strategies. The table below (Table 2:1) illustrates the different strategies and the relevant situation for each strategy.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Form of Research Questions</th>
<th>Requires Control of Behavioral Events</th>
<th>Focuses on Contemporary Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>how, why?</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Survey</td>
<td>who, what, where, how many, how much?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Archival analysis</td>
<td>who, what, where, how many, how much?</td>
<td>No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>History</td>
<td>how, why?</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Case study</td>
<td>how, why?</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table 2:1. Relevant Situations for Different Research Strategies, Yin

This study will use a case study approach where the aim of the study is to answer ‘how’ questions\(^5\). The following chapters will explain further how this research approach will be implemented.

\(^5\) For the questions see chapter 1.2.1 Problem Formulation
2.2.1. Case study

“Case study research is preferred strategy when ‘how’ and ‘why’ questions are being posed, when the investigator has little control over events, and the focus is on a contemporary phenomenon within some real-life context.”

Case study research can be based on single-case or multiple-case studies. As understood of the name, single-case studies focus on one single case and can represent a significant contribution to knowledge and theory building. Multiple-case studies in the contrary include two or more cases within the same study. When working with multiple cases the cases should be selected so that they replicate each other, either direct or systematically. (Yin, 1994)

Whether single or multiple cases, the case study can be exploratory, descriptive or explanatory. Exploratory case study is aimed to define the questions and hypotheses of the study or determine the achievability of the research method. A descriptive study presents a complete description of the study. An explanatory case study presents data on which causes produced which effects. (Yin, 1994)

Regardless of what type of method chosen for the case study Yin (2003) recommends the following phases when performing a case study:

[Diagram: Case Study Method, Yin]

This thesis studies the possibilities to be more efficient with IT Governance and Management where the case study will be based on an actual running enterprise, Kronoberg County Administrative Board. The used case study method is the exploratory single-case study since the single-case can be used to confirm, challenge or extend the theory. (Yin, 2003)

---

6 Yin, 2003, page 5
2.2.2. Constructive research approach

“The constructive approach is a research approach for producing novel entities – such as models, diagrams and plans – that solve emerging problems in running business organizations.”

This research approach relies on a realistic view of the truth, such as ‘what will work in the truth’. The objective role of the researcher is characteristic to the research. The researcher’s strive is to attempt to draw theoretical conclusions based on the empirical information. (Labro E. & Tuomela T. S., 2003)

The constructive research approach can be characterized by dividing the research study into the following phases: (Kansanen E., Lukka K. & Siitonen A., 1993; Labro & Tuomela, 2003)

1. Find a practically relevant problem which also has research potential
2. Examine the potential for long-term research co-operation with the target organization
3. Obtain a general and comprehensive understanding of the topic
4. Innovate and construct a theoretically grounded solution idea
5. Implement the solution and test whether it works in practice
6. Examine the scope of applicability of the solution
7. Show the theoretical connections and the research contribution of the solution concept

Kansanen, Lukka and Siitonen (1993) believe the order of these phases varies from case to case, while Labro and Tuomela (2003) illustrate in the following figure (Figure 2:3) a timeline where the seven phases fit in.

![Figure 2:3. Phases of CRA, Labro & Tuomela](image)

Labro and Tuomela (2003) believe these steps to be crucial and asserts step 3, 4 and 5 to be related to ensure internal validity and step 6 to deal with external validity. (Labro & Tuomela, 2003)

---

7 Kansanen E., Lukka K. & Siitonen A., 1993
8 Based on Kansanen et al. and Lukka (another paper published in 2000) has Labro et al. presented an updated version of the phases (steps) of CRA. The updated version is presented in this study.
9 Validity and Reliability will be discussed further in chapter 2.4. Validity and Reliability
Another essential part of the constructive research approach is to tie the problem and its solution with gathered theoretical knowledge. It is also important to ensure originality of the study and that the solution actually will work. (Kansanen, Lukka & Siitonen, 1993)

This study will have features of the constructive research approach as the case study is conducted within a running enterprise were results in models and diagrams. Not all phases will be achieved since many of them require the study to be done in a longer time period than possible. The third and seventh step has followed during the whole study, as Labro and Tuomela (2003) illustrate in Figure 2:3. The fourth step is achieved with the right interview questions which are based on the theory. The fifth step will only partly be achieved since lack of time will not make it possible to implement the recommended solution and see if it actually will work. Instead the recommended solutions will be presented to a focus group and the thoughts about implementing and achieving a result will be presented.

2.2.3. Quantitative and Qualitative approach

When conducting a research there are two different approaches to follow, the qualitative and the quantitative approach.

When dealing with research’s concluding in numerical analysis or transformed in numerical results the quantitative research approach is the approach to be used. This approach deals with experiments, tests and questionnaires etc. (Backman, 1998)

On the contrary, the qualitative approach studies how one apprehends and interprets with the surrounded reality (Backman, 1998). This study will use a positivistic qualitative approach where the positivistic approach is signified by individuals believing in absolute knowledge. The researcher wishes to reach a general conclusion based on logic empirical data gathered with ones senses (Thurén, 2000).

The positivistic qualitative approach is used as this study will base the empiricism on interviews with individuals who are well aware of the organization and have an understanding in governing an enterprise. This study will also have features of the quantitative approach as well since diagrams and models will be used both in the theory, as a method for data collection but also as a part of the results.
2.3. Choice of method for data collection

There are several methods for collecting data for a case study. Yin (1994) illuminates six different sources of evidence, presented in the table below (Table 2:2):

<table>
<thead>
<tr>
<th>Source</th>
<th>Consists of…</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Documents      | • communiqueés and written reports  
|                | • administrative documents  
|                | • formal studies or evaluations  
|                | • newspaper and articles from mass media                                    | This kind of information is likely to be relevant to every case study topic |
| Archival records| • service records  
|                | • organizational records  
|                | • maps, charts and lists  
|                | • survey data and personal records                                          | Often in computerized form                                                |
| Interviews     | • open-ended nature  
|                | • focused  
|                | • survey                                                      | The most important and essential source of case study information         |
| Direct observation | • formal data  
|                | • casual data                                                      |                                                                         |
| Participant-observation | • being resident in a neighborhood  
|                | • functional roles in an environment  
|                | • staff member in an organizational setting  
|                | • being a key decision maker                                        | Special mode of observation where the investigator is not a passive observer |
| Physical artifacts | • technological device  
|                | • tool or instrument  
|                | • a work of art  
|                | • other physical evidence                                               | Less relevant potential in most typical kind of case study               |

Table 2:2. Six sources of evidence

It is important for an investigator to be familiar with all these sources even though not all sources might be useful for a specific study. (Yin, 1994)

When collecting data in case studies there are three important principles to have in mind (Yin, 1994):

1. Multiple sources of evidence: implies that two or more sources are used, but all converging to the same set of facts.
2. Case study database: is an assembly of fact that is different from the final case study report.
3. Chain of evidence: implies that there is an explicit link between asked questions, the collected data and the drawn conclusions.

These principles apply to all six sources of evidence and when used properly they contribute to the validity and reliability of the research. (Yin, 1994)
In this study multiple-sources are used to gather data and the chain of evidence has been maintained during the whole study where the different parts have a clear connection and are relevant to one and another.

To collect data for this study primary and secondary data has been used. Primary data refers to data that is processed and gathered by the researcher specifically for the current project (Idaho State University, Research Guide). The primary data has been collected for the empiricism based on interviews with individuals with the right position and knowledge within the enterprise.

The secondary data refers to data that has been gathered previously by some one else than the researcher for some other reasons than the project in hand (Idaho State University, Research Guide). The secondary data will be used to get a theoretical foundation for the whole study. The secondary data is based on reliable scientific books and articles available on the internet or in libraries.

2.4. Validity and Reliability

Case study is one kind of empirical research and to ensure the quality of an empirical research there are four tests to use. These tests consist of:

1. Construct validity
2. Internal validity
3. External validity
4. Reliability

The validity tests are made to ensure that correct measures of the concept is studied but also to make sure that the findings of the study can be generalized. The reliability demonstrates the operations of the study, implying that the same procedure for data collection can be repeated with similar results. (Yin, 1994)

To ensure validity and reliability scientific information which can be confirmed by other scientific books or articles providing similar information has been used. To make sure the interview questions keep a high level of reliability and validity the questions are based on the presented theory are developed in a way to ensure that the result of the question will lead to the conclusions of the problem formulation.
3. THEORETICAL FRAMEWORK

In the theoretical chapter relevant and important academic theories will be presented to contribute to the understanding of IT Governance and Management. This chapter will also cover some basic theories about Corporate Governance.

3.1. Corporate Governance

“Corporate Governance is the system that indicates how an organization is directed and controlled”

Posthumusa and Solms (2005) quote Sir Adrian Cadbury who defines Corporate Governance as keeping the balance between economical and social goals and the balance between individuals and communal goals. Furthermore he asserts the aim with Corporate Governance is to support the interests of individuals, corporations and society. (Posthumusa S. & Solms R., 2005)

The IT Governance Institute motivates Corporate Governance or Enterprise Governance as they wish to name it, as a set of responsibilities and practices by the board and executive management. The goal with these responsibilities and practices is to provide strategic direction to ensure that objectives are achieved, risks are managed in a correct way and make sure that the enterprise’s resources are used accurately. (ITGI, 2003)

According to Weill and Ross (2004), OECD defines Corporate Governance as providing structure for organizational objectives and for monitoring performance to ensure that objectives are attained. Further they mean that there is no single model of good Corporate Governance. Many countries are interested in a supervisory board which is responsible of protecting the rights of shareholders and stakeholders such as employees, customers etc. (Weill & Ross, 2004)

Weill & Ross (2004) has developed a framework (Figure 3:1) for linking Corporate and IT Governance. This framework illustrates the connection between the enterprise key assets and Corporate Governance.

The top of the framework illustrates the board connected to the different interested parties. The board works with a senior management to implement principles for governance to make sure the organizational processes are effective (Weill & Ross, 2004). It is the boards’ responsibility to effectively control and direct the organization through solid and reliable leadership. Posthumusa and Solms (2005) believe solid and reliable leadership lead to good Corporate Governance (Posthumusa & Solms, 2005).

\[\text{Posthumusa & Solms, 2005, page 11}\]
\[\text{In this study the concept ‘Corporate Governance’ will be used}\]
\[\text{Organisation for Economic Co-operation and Development}\]
The senior executive team is assigned to formulate strategies and desirable behaviour in the organization. Strategy can be defined as a set of choices such as “Who are the targeted customers?”, “What is the unique and valuable position targeted by the firm?”, “What core processes embody the firm’s unique market position” etc. (Weill & Ross, 2004)

Desirable behaviours represent beliefs and culture of the organization, defined through strategies, corporate value statements, mission statements, business principles, rituals and structures. Weill and Ross (2004) believe that the desirable behaviours create value to the organization and are unique and different for every enterprise. Further they believe that desirable behaviours should be clearly defined since they are the key to accomplish effective governance. (Weill & Ross, 2004)

Further the framework (Figure 3:1) illustrates the six key assets which help the enterprise to achieve their strategies and create business value. These key assets consist of:

<table>
<thead>
<tr>
<th>Human assets:</th>
<th>People, skills, career paths, training, reporting, mentoring, competencies etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial assets:</td>
<td>Cash, investments, liabilities, cash flows, receivables etc.</td>
</tr>
<tr>
<td>Physical assets:</td>
<td>Buildings, plats, equipment, maintenance, security, utilization etc.</td>
</tr>
<tr>
<td>IP assets:</td>
<td>Intellectual Property: including product, services and process know-how formally patented, copyrighted or embedded in the enterprises’ people and systems</td>
</tr>
<tr>
<td>Information and IT assets:</td>
<td>Digitized data, information, and knowledge about customers, processes performance, finances, information systems etc.</td>
</tr>
<tr>
<td>Relationship assets:</td>
<td>Relationships within the enterprise as well as relationships, brand, and reputation with customers, suppliers, regulators, competitors, channel partners etc.</td>
</tr>
</tbody>
</table>

Table 3:1. Key assets
To govern these key assets a number of organizational mechanisms are needed. Some of these mechanisms are specific for certain assets while other is possible to use within several assets. The use of these key assets varies in most enterprises where financial and physical assets are best governed and information assets are among the worst managed assets. (Weill & Ross, 2004)

3.2. IT Governance

IT Governance has come to play an important role in organizations where technologies are implemented in larger scales than ever before and supports numerous business operations. (Posthumusa & Solms, 2005)

Organisations today work in a new era of competition that is not only faster but also more turbulent, more global and more digital, requiring inexorable cost-efficiencies as well as flexibility and creativity to find new ways to innovate and create value. (Grembergen, 2003)

Enterprises can use IT Governance for directing and controlling the technological aspects of their organization (Posthumusa & Solms, 2005). It ensures that investments in IT will generate the values the business requires and that risks associated with IT are alleviated (Grembergen, 2003).

The IT Governance Institute believes IT Governance to be an integral part of the overall enterprise governance. They compare the need of IT Governance integration with the overall governance to the need of IT to be an integral part of the enterprise rather than be something that is practised outside the enterprise framework. (ITGI, 2003)

3.2.1. Defining IT Governance

There are different definitions and opinions of what IT Governance is. Grembergen (2003) has in the following table (Table 3:2) compared different definitions:

<table>
<thead>
<tr>
<th>Definition</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;IT governance is the responsibility of the board of directors and executive management. It is an integral part of enterprise governance and consists of the leadership and organisational structures and processes that ensure that the organisation’s IT sustains and extends the organization’s strategies and objectives.&quot;</td>
<td>The IT Governance Institute, 2003</td>
</tr>
<tr>
<td>&quot;The organisational capacity to control the formulation and implementation of IT strategy and guide to proper direction for the purpose of achieving competitive advantages for the corporation.&quot;</td>
<td>The Ministry of International Trade and Industry, 1999</td>
</tr>
<tr>
<td>&quot;IT governance is the organisational capacity exercised by the Board, executive management and IT management to control the formulation and implementation of IT strategy and in this way ensure the fusion of business and IT.&quot;</td>
<td></td>
</tr>
</tbody>
</table>

Table 3:2. Definition of IT Governance, Grembergen
Posthumusa and Solms (2005) motivate IT Governance to be about policies and procedures. Policies and procedures that determines how technology resources in an organization can be controlled and directed so the recourses successfully simplifies the reality of reaching the business goals. (Posthumusa & Solms, 2005)

Another definition, quite different than the mentioned ones is Weill and Roses (2004) opinion of IT Governance:

“Specifying the decision rights and accountability framework to encourage desirable behaviour in the use of IT”

Further more they state there are three questions that must be dealt with in order to reach effective IT Governance. (Weill & Ross, 2004)

1. What decisions must be made to ensure effective management and use of IT?
2. Who should make the decisions?
3. How will these decisions be made and monitored?

Despite the different aspect of the definitions all focuses on the same issue, the connection between business and IT (Grembergen, 2003). It is all about improving the value of IT within the organisation and reducing risks (PwC, 2006).

3.2.2. Argument in favour of IT Governance

IT Governance requires a major amount of time, work and attention. Weill and Ross (2004) believe that it is all worth it since good IT Governance harmonizes management decisions and use of IT. When a carefully designed and implemented governance structure is missing there is no harmony and the enterprise is left to chance. (Weill & Ross, 2004)

Weill and Ross (2004) mention number of argument why IT Governance is necessary and why decision making should not be left to chance. Good IT Governance pays off, according to a study they made did firms with above-average IT Governance have 20 percent higher return on assets (ROA) compared to firms with the same strategy but with poorer governance. IT Governance is not the only factor but good governance often comes with effective management, which also should be taken under consideration. (Weill & Ross, 2004)

Another argument why IT Governance should be considered is that IT is expensive. The average investment on IT is rising to 50 percent of the total annual investment of many enterprises. Since IT is becoming more important and radical the control and management of IT to ensure that value is created has turned into a challenge. IT Management solves this issue by focusing IT spending and on strategic priorities. (Weill & Ross, 2004)

13 Weill & Ross, 2004, page 8
IT is pervasive, today IT investments are being made within the whole organisation and not centrally as it used to. With IT Governance hidden spending on IT can be prevented where IT decision making will be distributed to those responsible for the outcome. (Weill & Ross, 2004)

The ultimate argument why IT Governance is necessary is that expectations and reality often do not match. Usually management is expected to present the right IT solution, increasing the efficiency of IT while managing IT risks. The most likely reason why many enterprises experience negative IT is ineffective IT Governance. (ITGI, 2003)

3.2.3. Successful IT Governance

PricewaterhouseCoopers (2006) asserts there are six crucial steps for successful IT Governance: (PwC, 2006)

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | **Senior Management commitment and vision**  
      IT Governance is often initiated by top management in the organisation, hence they most likely has support of senior management. This support is very important sustain and keep IT Governance as a part of the strategic vision of senior managers. Through this continuous support, expressed by regular follow-up, adequate available resources and support, good IT Governance practices during conflict situations. With this kind of arrangement IT Governance has better chances to succeed. |
| 2    | **Communication and Change management**  
      In cases where stronger IT Governance are introduced organisations have came across some level of resistance. The instances where IT Governance was successful despite the resistance where organisations where all paid great attention to continued communications, especially when strong resistance was encountered or when other exceptions needed to be dealt with. |
| 3    | **Focus, execute and enforce**  
      When introducing or improving IT Governance a well-defined plan is necessary. Success will only be achieved if focus is maintained and agreed practices are executed as planed. If a technology is introduced as one of pillar of IT Governance it is important to keep to this measure regardless of any resistance. A strict exception management process for relevant variations should be developed and can be seen as a documented and structured mechanism for stakeholders to state their case and request exceptions. |
| 4    | **Define a benefit management system and set achievable targets/expectations**  
      IT Governance is about improving value of IT and reducing risk in an organisation. Therefore it is natural to define the targets of the new/improved IT Governance practices and measure whether they are achieved or not. |
| 5    | **Evolution, as opposed to revolution**  
      When introducing or improving IT Governance the arrangements take time. Often must cultural changes or major procedure changes be introduced and these require time. It is important that the enterprise plan these changes carefully and allow adequate time for implementation as well as allowing sufficient time for the organization to absorb the changes. |
| 6    | **Don’t over-engineer IT Governance**  
      IT Governance measures are key to success of IT within an enterprise. However, it is important to not overdo the effort with complicated multiple committees, overkill monitoring and reporting, not complicating processes and templates more than necessary. Over-engineering may result in more resistance and consequently get less effective. |

Table 3.3. Six steps of successful IT Governance, PwC
3.2.4. IT Governance Failures

As any other failure there are also failures in IT Governance where the failures often are stimulated by week board-level guidance and can lead to significant amounts of lost. These situations occur usually as a result of improper planning couple with bad investment decisions. (Posthumusa & Solms, 2005)

In 2001 four major companies lost more than $1,5 billion in IT-related issues. (Posthumusa & Solms, 2005)

- Disney’s Internet division suffered a loss of $878 million when they where forced to shut down “Go.com” portal since they where not able to remain competitive against rivals such as AOL and Yahoo.
- Kmart had to write of $130 million due supply chain hard- and software failed to meet their expectations.
- Gateway, a computer manufacturing company lost $142 million due IT project no longer supporting their corporate IT strategy.
- Nike made a bad investment in supply chain management software failing to support its objectives resulting in loss of $400 million. The cause was said to be lack of IT expertise in the project and not considering the fact that a significant amount of IT resources had already been allocated in other IT projects.

Reasons why enterprises has difficulties in implementation of good IT Governance systems is the fact that corporate boards seems to take ill-advised decisions in terms of IT. This leads to, as stated above that such boards suffers lack of board-level IT guidance and can therefore not correctly oversee the interest of their stakeholders. In order to solve these problems it is important to examine who is responsible for advising the board regarding IT Governance issues. Often is the CIO the one responsible to ensure that IT Governance is executed properly within the enterprise, meaning the board directors should only look at the CIO for assurance that the corporate IT strategy supports their underlying objectives. (Posthumusa & Solms, 2005)

3.3. IT Governance Decisions

3.3.1. IT Governance Decision Areas

According to Weill and Ross (2004) there are five IT related decisions every enterprise must attend to. The framework below (Figure 3:2) illustrates the five decisions in order to clear the connections between the decisions. Each decision need individual attention but it is important that each decision is an integrated part to the other decisions and is not isolated. (Weill & Ross, 2004)
<table>
<thead>
<tr>
<th>IT principles decisions</th>
<th>IT architecture decisions</th>
<th>IT infrastructure decisions</th>
<th>IT investment and prioritization decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-level statements about how IT is used in the business</td>
<td>Organisation logic for data, application, and infrastructure captured in a set of policies, relationships, and technical choices to achieve desired business and technical standardisation and integration.</td>
<td>Centrally coordinates, shared IT services that provide the foundation for the enterprise’s IT capability</td>
<td>Decisions about how much and where to invest in IT, including project approvals and justification techniques</td>
</tr>
</tbody>
</table>

**Figure 3.2. Key IT Governance Decisions, Weill & Ross**

**IT Principles**

At the top of the framework the IT principles decisions is placed and these decisions clarify the enterprise’s goal for IT and will affect the other decisions. If the IT principles are not clear within the enterprise the other IT related decision will most likely be meaningless. Principles provide direction for all IT decisions, ambiguous principles limit the efficiency of the other decisions. (*Weill & Ross, 2004*)

Weill and Ross (2004) suggest that detailed IT principle decision should clarify the following questions:

1. What is the enterprise’s desired operating model?
2. How will IT support the desired operating model?
3. How will IT be funded?

The two first questions indicate how an enterprise develops and delivers products, services and clarify the factors for the future infrastructure and application decisions. The third question determines and specifies the criteria for IT investment, either the IT investment will be found centrally, within business units or a combination of the two approaches. (*Weill & Ross, 2004*)

**IT Architecture**

Enterprises change constantly, to be able to change flexible architecture is required. Weill and Ross describe the IT Architecture to be the enterprise’s logic for data, applications and infrastructure all captured in a set of policies, relationships and technical choices in order to achieve desired business and technical standards and integration. The architecture provides a roadmap for standardisation of processes, data and technology in order to maximize the business benefits. (*Weill & Ross, 2004*)

**IT Infrastructure**

The IT infrastructure is the foundation of both technical and human IT capability available through the business. The purpose of the IT infrastructure is to enable organization-wide data sharing and cross-business integration. Within an enterprise the typical infrastructure counts for approx. 55 percent of the total IT investment. (*Weill & Ross, 2004*)
Business Application Needs

The decisions specific for business application needs are those decisions the enterprise need to generate value of IT. When identifying which business applications needed for generating value there are often two objectives; creativity and discipline, which often are in conflict with one and another. Creativity is about identifying new and more effective solutions to deliver value to customers using IT. Even the second objective, discipline is about focusing and performing necessary resources to achieve the business goals. Discipline concern architectural integrity, meaning in default conditions applications must be chosen that fits the architecture of the enterprise. This result in sacrificing functionality but according to Weill and Ross (2004), managers believe 80 percent of the solutions offer significant business value while reducing project costs and risks. For successful business application needs and decisions creative thinker and disciplined managers are required. (Weill & Ross, 2004)

IT Investment and Prioritization

The most visible and controversial decision key within an enterprise is the IT investment decisions. When deciding upon IT investment and prioritization there are three questions to have in mind.

1. How much to spend?
2. What to spend it on?
3. How to reconcile the needs of different constituencies.

The amount invested in IT is determined by IT investment processes and enterprises often look to industry benchmarks to find suitable spending levels. (Weill & Ross, 2004)

3.3.2. Archetypes for Decision Rights

Weill and Ross (2004) use different political archetypes to describe the combination of individuals who have a role in decision making within the enterprise. Figure 3:3 illustrate how key players are classified in the six IT Governance archetypes. (Weill & Ross, 2004)

<table>
<thead>
<tr>
<th>Archetype</th>
<th>C - level executive</th>
<th>Corporate IT and/or Business unit IT</th>
<th>Business unit leaders or key business process owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Monarchy</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT Monarchy</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Feudal</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>IT Duopoly</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Anarchy</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3.3. Key players in IT Governance Archetypes, Weill & Ross
Business Monarchy

IT decisions in a Business Monarchy is taken by the senior business executives and are decisions affection the whole enterprise. The input for the decisions often comes from CIOs or IT managers in different business units. (Weill & Ross, 2004)

IT Monarchy

In IT Monarchy strategic decisions affecting IT architecture is taken where the decisions are taken by IT professionals such as IT managers. IT Monarchy can be implemented in various ways, often including IT professionals both from corporate teams and business units. (Weill & Ross, 2004)

Feudal

The Feudal entity is typical business units, regions or functions where independent decisions that are optimised for the local needs are taken. According to Weill and Ross’s (2004) study the feudal model is not very common since enterprises look for synergic business units. (Weill & Ross, 2004)

Federal

The Federal decision making attempt to balance the responsibilities and accountability of multiple governing bodies, such as county and states. Both the centre of the organisation and the business unit is involved in a Federal archetype. Participants can consist of unit leaders, business process owners, IT leaders from different business units and corporate IT leaders. This archetype is the most difficult model for decision making since the enterprise and business unit leaders have different concerns and represent their own unique responsibilities. Generally the biggest, most powerful business unit is the ones getting most attention and influencing the decisions leaving smaller business units unsatisfied leaving management teams and executive committees to resolve conflicts. (Weill & Ross, 2004)

IT Duopoly

When decisions are taken in a two-party arrangement between IT executives and another group the IT Duopoly archetype is used. The IT executive group may consists of a central IT group within the enterprise, business units or a combination. The second group may consist of different CxOs, business unit leaders or business process owners. In contrary of the Federal model, IT Duopoly do not have corporate and local representation at the same time, it is always one or another including IT professionals. (Weill & Ross, 2004)

Anarchy

Decisions in an Anarchy model are taken by individuals or small groups based on their own needs. Anarchies are expensive to support and rarely sanctioned but supported when rapid responsibilities to local or individual customers need is required. (Weill & Ross, 2004)
3.4. IT Governance Framework

3.4.1. CobiT

CobiT, Control Objectives for Information and related Technology provides adequate control and security framework for IT in enterprises (CobiT, 2004) and has during the last years become a standard for IT Governance (Sallé M., 2004). According to Ridley, Young and Carroll (2004) is CobiT the most appropriate framework to use in an enterprise to ensure alignment between use of IT and the business goals (Ridley G, Young J. & Carroll P., 2004).

CobiT and ISACA (2007) defines CobiT to be an IT Governance framework and toolset that allows managers to bridge the gap between control requirements, technical issues and business risks (CobiT, 2007). CobiT is business orientated and describes how IT should be govern from a business and executive management point of view (CobiT, 2000).

The CobiT framework defines 34 IT processes divided in four IT domains; Plan and Organise (PO), Acquire and Implement (AI), Deliver and Support (DS) and Monitoring (M). These processes have been developed from 41 international source documents and are validated internationally to help balance IT risks against investments in IT. (Ridley G, Young J. & Carroll P., 2004)

Planning and Organising

The Planning and Organising domain covers strategy and tactics and concern the way IT best can continue to the achievement of the objectives (Sallé, 2004). Within an enterprise it is important that an IT strategy is made and communicated within the organisation. This domain also covers the responsibility to manage IT investment, quality and human resources (CobiT, 2000).

Acquisitions and Implementation

To be able to realize the IT strategy developed in the ‘Planning and Organising’ domain, IT solutions need to be identified, developed or acquired. Furthermore they need to be implemented and integrated into the business process (Sallé, 2004). This domain is also responsible for changes and maintenance of already existing systems and ensuring that the lifecycle is sustained (CobiT, 2000).

Delivery and Support

This domain is responsible for the delivery of the required services (Sallé, 2004). This includes tasks such as defining and managing service levels, ensure security, identify and allocate cost, educate users, assist and advise users. Managing the configuration, problems and incidents, data, facilities and operations are other tasks.

---

14 For the complete framework of CobiT see Appendix A
15 This information can be found in most references presenting and discussing CobiT
included in this domain \( (CobiT, 2000) \). To be able to deliver required services a support process is necessary \( (Sallé, 2004) \).

**Monitoring**

Every IT process needs to be regularly monitored over time for quality and compliance with control management \( (Sallé, 2004) \). This is necessary if the enterprise want to be able to get wanted effect of the use of IT \( (CobiT, 2000) \).

**3.4.2. Balanced Scorecard**

The Balance Scorecard is a performance management system that enables businesses to drive strategies based on measurement and follow up. During the recent years has Balance Scorecard been applied to IT and is fast becoming a popular tool used internationally in major enterprises. \( (Grembergen, 2003) \)

Balanced Scorecard can be defined as a methodology used to show measurement and management systems that supports IT Governance processes and the IT/Business alignments whether it is Business Balances Scorecard or IT Balances Scorecard. \( (Grembergen, 2000/2004) \)

IT Governance Institute and PwC \( (2004) \) describe Balance Scorecard, mainly IT Balance Scorecard to be a framework to help organisations to rapidly implement strategies by transforming strategy and vision in to number of operational objectives that can drive behaviour and performance. \( (ITGI & PwC, 2004) \)

The standard IT Balance Scorecard consists of four perspectives each addressing specific questions; \( (Grembergen, 2000/2004) \)

<table>
<thead>
<tr>
<th>USER ORIENTATION</th>
<th>BUSINESS CONTRIBUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do users view the IT department?</td>
<td>How do management view the IT department?</td>
</tr>
<tr>
<td>Mission</td>
<td>Mission</td>
</tr>
<tr>
<td>Be the preferred supplier of information systems.</td>
<td>Obtain a reasonable business contribution from IT investments.</td>
</tr>
<tr>
<td>Objectives</td>
<td>Objectives</td>
</tr>
<tr>
<td>- Preferred supplier of applications</td>
<td>- Control of IT expenses.</td>
</tr>
<tr>
<td>- Preferred supplier of operations vs. proposer of the best solution, from whatever source</td>
<td>- Business value of IT projects.</td>
</tr>
<tr>
<td>- Partnership with users</td>
<td>- Provision of new business capabilities</td>
</tr>
<tr>
<td>- User satisfaction</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OPERATIONAL EXCELLENCE</th>
<th>FUTURE ORIENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>How effective and efficient are the IT processes?</td>
<td>How well is IT positioned so meet future needs?</td>
</tr>
<tr>
<td>Mission</td>
<td>Mission</td>
</tr>
<tr>
<td>Deliver effective and efficient IT applications and services.</td>
<td>Develop opportunities to answer future challenges.</td>
</tr>
<tr>
<td>Objectives</td>
<td>Objectives</td>
</tr>
<tr>
<td>- Efficient and effective developments</td>
<td>- Training and education of IT staff</td>
</tr>
<tr>
<td>- Efficient and effective operations</td>
<td>- Expertise of IT staff</td>
</tr>
<tr>
<td></td>
<td>- Research into emerging technologies</td>
</tr>
<tr>
<td></td>
<td>- Age of application portfolio</td>
</tr>
</tbody>
</table>

Table 3.4. IT Balance Scorecard, Grembergen
3.4.3. Benchmarking possibilities

Karlöf (1997) asserts the benchmark or benchmarking concept in management to be referred as metaphors for guidelines for effectiveness in state of key numbers. The use of correct key numbers with the aim to improve processes within the enterprise results in effective management, higher quality and/or higher productivity. (Karlöf B., 1997)

Benchmarking is a powerful management, especially strategic management tool which is used by enterprises to evaluate various aspects of their processes in relation to the best solution. This allows enterprises to develop plans on how to adopt best practices, usually with the aim to increase some aspects of performance. (Wikipedia)

Weill and Ross (2004) have described the Governance Arrangement Matrix to visualise who gives input and make decisions within different decision areas in the enterprise. Further they describe performing the Governance Performance Survey to measure how IT Governance is performed (Weill & Ross, 2004). When combine the Governance Arrangement Matrix and the Governance Performance Survey a benchmark is achieved in such level it can be compared with 256 other companies that perform benchmarking (Grewal P. & Knutsson F., 2005).

The Governance Arrangements Matrix

The Governance Arrangements Matrix manages Weill and Rosses (2004) two first questions for effective IT Governance, "What decisions must be made and who should make them?" The head row of the matrix lists the five IT related decisions while the first column of the matrix present the governance archetypes.

<table>
<thead>
<tr>
<th>DECISION ARCHETYPE</th>
<th>IT Principles</th>
<th>IT Architecture</th>
<th>IT Infrastructure Strategies</th>
<th>Business Application Needs</th>
<th>IT Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Input Decision</td>
<td>Input Decision</td>
<td>Input Decision</td>
<td>Input Decision</td>
<td>Input Decision</td>
</tr>
<tr>
<td>Business Monarchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT Monarchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feudal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duopoly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anarchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don’t Know</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 3:4. Governance Arrangement Matrix, Weill & Ross

---

16 For all questions see chapter 3.2.1. Defining IT Governance
17 For full description of the five decisions see chapter 3.3.1. IT Governance Decisions Areas
18 For full description of six archetypes see chapter 3.3.2. Archetypes for Decisions Rights
As stated earlier all key decisions are related and linked to one and another in order to achieve effective governance, usually flowing from the left to the right on the matrix. Each decisions area has an “Input” and “Decision” field to show who gives input to the different Governance Decisions and who makes the different Governance Decisions. There is usually more than one person providing input to these decisions and these people are responsible for both input and decision making for each decision area. (Weill & Ross, 2004)

The figure below (Figure 3:5) show the result of a study made by Weill and Ross (2004) including 156 enterprises in twenty-three countries. The matrix shows the percentages of each used governance archetype and each decisions in enterprises, where each column add to 100 percent.

<table>
<thead>
<tr>
<th>DECISION ARCHETYPE</th>
<th>IT Principles</th>
<th>IT Architecture</th>
<th>IT Infrastructure Strategies</th>
<th>Business Application Needs</th>
<th>IT Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Input</td>
<td>Decision</td>
<td>Input</td>
<td>Decision</td>
<td>Input</td>
</tr>
<tr>
<td>Business Monarchy</td>
<td>0</td>
<td>27</td>
<td>0</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>IT Monarchy</td>
<td>1</td>
<td>18</td>
<td>20</td>
<td>73</td>
<td>10</td>
</tr>
<tr>
<td>Feudal</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Federal</td>
<td>83</td>
<td>14</td>
<td>46</td>
<td>4</td>
<td>59</td>
</tr>
<tr>
<td>Duopoly</td>
<td>15</td>
<td>36</td>
<td>34</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Anarchy</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>No Data/ Don’t Know</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 3:5. How Enterprises Govern, Weill & Ross

The shade cells highlight the most common or typical governance patterns while the shade bolded cells shows the most common and typical decision making patterns. (Weill & Ross, 2004)

The Governance Performance Survey

The Governance Performance Survey has been developed with the purpose to measure and calculate the effectiveness of IT Governance within an enterprise. Weill and Ross (2004) recommend this survey to be answered by at least ten managers from the senior management team. There after the average of the result should be calculated. (Weill & Ross, 2004)

The survey consists of four main questions:

1. How important are the following outcome of your IT Governance, on a scale from 1 (Not important) to 5 (Very important)?
   - Cost-effective use of IT
   - Effective use of IT for growth
- Effective use of IT for assets utilization
- Effective use if IT for business flexibility

2. What is the influence of the IT Governance in your business on the following measures of success, on a scale from 1 (Not successful) to 5 (Very successful)?
   - Cost-effective use of IT
   - Effective use of IT for growth
   - Effective use of IT for assets utilization
   - Effective use if IT for business flexibility

3. What are the areas where IT Governance works best? Why?

4. What are the areas where IT Governance is not effective? Why?

Calculating the result of the Governance Performance Survey

The first question measures the importance of different outcomes while the second question measures how well IT Governance meets the different outcomes. Given that not all enterprises rank their outcome in the same way and with the same importance, the answer of the first question is used to weight the answer of the second question. Thereafter the weighted score for the four questions are added and divided by the maximum score that could be attained by the enterprise. Mathematically the result can be calculated with the following formula:

\[
\frac{\sum_{n=1}^{4} \text{(importance of outcome} | Q1) \times \text{influence of IT Governance} | Q2) \times 100}{\sum_{n=1}^{4} 5 \times \text{(importance of outcome) }}
\]

Given there were four objectives the maximum score for all enterprises will be 100 and the minimum score is 20. (Weill & Ross, 2004)

3.4.4. Other options

**ITIL – Information Technology Infrastructure Library**

The Information Technology Infrastructure Library is a framework of best practices that supports quality services in the IT sector. ITIL is built on a process-model view of controlling and managing operations. ITIL deals with the structure and skill requirements for an enterprise by presenting an inclusive set of management procedures. (Guide, 2005)

**CMM – The Capability Maturity Model**

The Capability Maturity Model is a method for evaluating and measuring the maturity of software development of organizations. There is also an altered version of the CMM, the Capability Maturity Model Integration (CMMI) which provides guidelines for improvement of processes within an organization. CMMI also suggests a way to manage the development, acquisition and maintenance of either products or provided services. (Guide, 2005)
Six Sigma

Six Sigma refers to six standard differences in statistical measurement. It is a quality-management tool used to control variations and thereby achieve extremely high levels of quality. (Guide, 2005)

3.5. Management

In an organization there are three levels of management decision making, strategic management, tactical management and operational management. Strategic management is the level where decisions are taken by senior managers. These decisions are to often long-term perspective, greater than six month and are taken to direct the organization in to the future. (Chaffey D. & Wood S., 2005)

In the tactical level decisions are taken by less senior managers which control the planning for achieving the strategic objectives. The tactical level decisions are medium-term perspective meaning the process takes one to twelve months. (Chaffey & Wood, 2005)

The last level is the operational level where decisions are taken on everyday basis by employees. These decisions are short term perspective, usually resolved immediately. (Chaffey & Wood, 2005)

![Diagram of management levels]

Figure 3:6. Applications used to support management decisions, Chaffy & Wood

3.5.1. Defining Management

Strategic Management

Strategic Management of IT within an enterprise is an involved and complicated endeavour which becomes more with every new novelty. Schildt and Beaumaster assert today’s technological enterprises and organizations to use integrated information systems. That will allow the enterprise to process data and perform tasks but also be able to provide services in a more effective and user-friendly way. (Schildt K., Beaumaster S., 2004)
Morden defines Strategic Management to be concerned with management planning for the whole enterprise. Further he asserts the process of Strategic Management to consist of four inter-related components. These are: (Morden T., 2004)

- Strategic analysis
- Strategy formulation and strategic decision-making processes
- Strategy choice
- Strategy implementation

According to Earl (1989) the use of IT Management signifies that the requirement for planning, organizing, control and technique is observed. IT Management should be modified to the enterprises current technology stage. For each techniques stage there is need of different management where the stages consist of Initiation, Spreading, Control and Maturity. (Earl M., 1989)

To implement good IT Management there is need for an Information Management plan. The IM-plan should consist of procedure for the way IT is supposed be organized, economically controlled and how changes within IT should be managed correctly. (Earl M., 1989)

---

19 For full description of Information Management see chapter 1.6. Concept Formulation
3.6. IT Governance vs.

3.6.1. ...IT Management?

The difference between IT Governance and IT Management has not always been clear. According to Grembergen (2003) IT Management focuses on internal effective supply of IT services, products and the management of the current IT operations. IT Governance on the other hand is much broader and focuses on performing and transforming IT to reach the present and future requirements of the business and their customers (Grembergen, 2003). Governance determines who should make the decisions within the organisation while Management is the process of making and implementing the decisions (Weill & Ross, 2004).

Figure 3:8. IT Governance vs. IT Management, Peterson (see Grembergen, 2003)

The importance and complexity of IT Management should not be underestimated but some elements of IT Management and supply of IT services could be delegated to an external provider. Whereas IT Governance which is specific for the organization where direction and control of IT can not be delegated to outside the organization. (Grembergen, 2003)

3.6.2. ...Corporate Governance?

As stated earlier Corporate Governance or Enterprise Governance is the system where entities are directed and controlled, while IT Governance according to the IT Governance institute “is an integral part of enterprise governance…”

The need of information technology in businesses has resulted in Corporate Governance not being able to solve issues without IT. To solve this Corporate Governance should compel IT Governance, where IT can influence strategic opportunities drawn by the Corporate Governance and contribute input for strategic planning (Grembergen, 2003). IT Governance reflects broader Corporate Governance principles at the same time as it focuses on the management and use of IT to achieve corporate goals (Weill & Ross, 2004).

20 See chapter 3.2. IT Governance, sector three (3)
The figure below (Figure 3:9)\textsuperscript{21} shows the relationship between Corporate and IT Governance:

![Figure 3.9. Enterprise Governance vs. IT Governance, Grembergen](image)

As stated above when Corporate (Enterprise) Governance drives and sets IT Governance, IT can influence opportunities and provide input for strategic planning. This way IT Governance enables the enterprise to take full advantage of the information resulting IT Governance to be seen as a driver for Corporate Governance. (Grembergen, 2003)

In the second part of the figure (Figure 3:9) it can be seen that to be able to meet business objectives enterprise activities require information from IT activities. Simultaneously IT activities need to be aligned with the enterprise activities to be able to take full advantage of the information. (Grembergen, 2003)

Posthumus\textsuperscript{a} and Solms quote Ron Exler, an analyst who believes Corporate Governance to be incomplete without adequate IT Governance in a time epoch where technology is critical to businesses. He believes Corporate Governance and IT Governance to be “immediately intertwined”. (Posthumus\textsuperscript{a} & Solms, 2005)

### 3.7. Summary IT Governance and Management

IT Governance can be summarized as the connection between business and IT, where it is all about improving the value of IT while reducing risks.

Good IT Governance harmonizes management decisions and use of IT resulting the decision making within the enterprise not being left to chance. Weill & Ross\textsuperscript{(2004)} has various arguments why decision making shouldn’t be left to chance, one being that good IT Governance pays off. According to a study made by Weill & Ross\textsuperscript{(2004)} enterprises with good IT Governance have 20 percent higher ROA compared to an enterprise with the same strategy but with poorer IT Governance.

Another argument why IT Governance should be considered is the fact that IT is expensive. With the right control and management of IT an enterprise can be ensured that value is created. This can be done with IT Management focusing on IT spending and on strategic priorities.

\textsuperscript{21} The figure is not manipulated therefore the concept Enterprise Governance instead of Corporate Governance
Within an enterprise there are five IT related decisions that needs attention; IT Principles, IT Architecture, IT Infrastructure, Business Application Needs and IT Investment and Prioritization. Each decision is an integrated part of the other decisions and is not isolated though each decision requires individual attention.

In an enterprise or organization there are six different political archetypes describing the combination of individuals who have a role in decision making within the enterprise or organization. These archetypes consists of; Business Monarchy, IT Monarchy, Feudal, Federal, IT Duopoly and Anarchy.

The Governance Arrangements Matrix uses these IT related decisions and the different archetypes to manage Weill & Rosses (2004) two first questions for effective IT Governance; “What decisions must be made and who should make them?” The Arrangement Matrix together with the Governance Performance Survey provides a benchmarking solution that can be compared with 256 other companies around the world performing benchmarking.

It is also important to be aware that there are failures in IT Governance where the failure often are stimulated by weak board level guidance and can result in significant amount of loss. These situations occur usually as a result of improper planning combined with bad investment decisions which once more points out the importance of good IT Governance.
4. EMPIRICAL FRAMEWORK

The empirical chapter is done in co-operation with the County Administrative Board of Kronoberg. This chapter will present the County Administrative Board and the responders view and opinion of their current IT Governance and Management solution.

4.1. Case Study

As stated in the method chapter the case study will be based on interviews with individuals familiar, implicated and knowledgeable with the governance and management related issues of the enterprise.

At first a mail interview will be done with ITGI and KPMG where an interview questionnaire will be sent out. These interviews are done in order to present what enterprises developing and providing IT Governance and Management solutions interpret this field. Simultaneously Weill and Ross’s arrangement matrix and performance survey will be done as a telephone interview with the executive managers of the County Administrative Board of Kronoberg. The interviewed executive managers consist of four division chiefs where as one of them is appointed Vice County Governor. Beside the arrangement matrix and performance survey further interview will be conducted with Michael Sundholm, IS chief and Lennart Johansson, appointed Vice County Governor of the County Administrative Board of Kronoberg. The aim with the second interview is to complement the matrix and survey but also to get a better understanding of the enterprise.

4.2. What is...

4.2.1. ...IT Governance and why is it necessary?

IT Governance can be described as the responsibility the board of directors and executive management has in order to take IT decisions. It is about how the decisions are made, by whom the decisions are made and how it is ensured that the decisions are set in function. IT Governance should be seen as an integral part of the enterprise overall governance. It consists of leadership and organisational structures and processes that ensure that the organisations IT sustains and extends the organisations strategies and objectives.

---

22 Appendix E  
23 Appendix B  
24 Appendix C  
25 The County Administrative Board is the main case enterprise of this study  
26 Appendix D
Simonsson believes that all companies have IT Governance, even though some until now has dealt with it in an informal way. Further he states that it is necessary to have a strategy for IT concerns in order to benefit the most from IT.

4.2.2. Management?

Management or IT Management can according to Öster at KPMG be defined as structure, policies, procedures, accountability and monitoring practices in order to support the implementation of the IT strategy and the governance of IT. Simonsson consider IT Management to lie more within the IT organization and do not in the same extent consider the business impact of IT. A third point of view is Jonsson who asserts IT Management to be about using IT in the right way, for the right things and at the right costs.

4.2.3. The outcome of good IT Governance and Management?

When having a good IT Governance and Management there are clear roles and responsibilities for IT. IT can be aligned with the enterprise, realising and exploiting opportunities and maximizing benefits within the enterprise. Further can IT related risks be managed appropriately and minimized.

Öster believes in order to keep good and successful IT Governance and Management it is important to realize that this is not a one time project and there is no quick fix. It should not be seen as a project but rather a process. Each enterprise should consider writing a few documents that guide IT, apply some basic metrics which are valid for the enterprise and involve and inform management regarding IT concerns (Simonsson M.).

4.3. County Administrative Board

The County Administrative Board functions as an executing and inspecting organ in the Swedish society. The Central Government takes direct decisions where the County Administrative Board is supposed to inform, support and contribute with resources. The taken decisions and demands set by the Central Government creates needs in enterprises where the County Administrative Boards functions to support, guide and supply with resources to these enterprises.

Ever since 1634 has Sweden had the same structure and partition. In February the parliamentary committee suggested that Sweden instead of being 21 counties should be divided in 6 to 9 regions which will result in larger local authorities while the government structure will remain the same. This is still an ongoing process and is counted to be a finished project somewhere between 2010 and 2014 if it is ruled for.

27 Public elucidation, SOU 2007 10
Yet another project which already has been decided by the Central Government is that there should be a stronger co-operation within the IT sector where all counties should have the same IT solutions, IT systems, soft and hardware etc. The current IT solution is very complex and extensive. Today all counties use the same network, LSTnet, which also is compatible and is able to collaborate with other authorities but there is room for an improvement and more secure communication. The idea with this project is to make the 5500 users of the network only use one domain instead of 21 which will lead to a more efficient use of IT.

**County Administrative Board of Kronoberg**

The Kronoberg County has somewhere between 150 000 and 180 000 inhabitants and is counted as one of the smaller counties in Sweden. The County Administrative Board of Kronoberg has at this time 175 employees, the County Governor and the Vice County Governor counted for.

The County Governor is the CEO of the County Administrative Board, where in Kronoberg County the position is not filled since the former County Governor retired. The Vice County Governor is the County Governors deputy. Claes Sjöblom is serving as Vice County Governor but is currently appointed County Governor. Since the Vice County Governor is currently appointed County Governor is Lennart Johansson, division chief for the Administration division, functioning as stand in for the Vice County Governor.

**4.3.1. Organization**

The figure below (Figure 4:1) shows a chart of the County Administrative Board of Kronoberg. Each county in Sweden has their own chart where the different divisions and units might be ordered differently.
The County Governor is the authority’s highest chief and known to be the public face of the authority. Furthermore is the County Governor chairman in the board of directors and in the County Labour Board. He decides in general County Administrative Board issues and questions regarding principal interests where the final decisions are taken by the Central Government.

Together has the County Governor and the Vice Governor the overall responsibility for the enterprise and the enterprises resources. They are answerable for the co-ordination of the usage of the resources whether it regards personnel resources or IT resources. The County Governor and Vice County Governor comes to all decisions on the executive level.

The staff (Figure 4:1) consists of seven members and has the responsibility to provide the County Governor and Vice County Governor with services. The staff represents the secretariat of the board of directors and deals with governance and follow-up of the enterprise processes. The staff is additionally responsible for international matters, manage information and different project etc.

Each division underneath the County Governor and Vice County Governor (Figure 4:1) consist of several units responsible for different areas within the county. For each division there is one chief in charge who takes the decisions regarding each division while each unit has it own chief deciding in smaller issues. The division chiefs are responsible for business related issues, the administrative matters of the division and for employer issues consisting of personnel, and economical issues. The business related issues can be divided in two parts where the division chief is responsible that projects actually are completed and the unit chiefs are responsible for the contents of the projects. Furthermore are the division chiefs answerable for the practical co-ordination of the IT resources of the County Administrative Board. All divisions are supposed work separately and managing their own division and units.

The Board consists of twelve members and decides in issues concerning the enterprise’s guidelines for allocation of resources and other budget issues.

At the bottom of the figure (Figure 4:1) there are three different units, where as the first unit is the involvement in a development project which is a co-operation project in the south of Sweden. The second unit follows EU directives where different water districts supports water related questions in the secretariat. The third unit is an environment court which gives permission to perform environment dangerous actions.

This is all ruled by the regulations based on the County Administrative Board instructions. The County Administrative Board instruction is pretty short and is complemented with a program where it can be concluded which official’s roles over what kind of decisions.
4.3.2. IT Governance and Management Goals and Decisions

The strategies and goals the County Administrative Board follows and is supposed to achieve are decided by an activity plan set up by the executive managers. Each unit develops an activity plan each summer and autumn for the coming year. The division chiefs control the activity plan, complement it if necessary and bring it up to the higher lever, the top managers for approval. Since the County Administrative Board is a public authority all documents are public and available for anyone who is interested.

To give the County Administrative Board guidelines and support in their governance and management related issues there is the Swedish Administrative Development Agency. This authority is supposed support the public authorities to become better and increase their consciousness.

The County Administrative Board has since a long time back had the same IT Governance structure where only the goal and aim has been updated and revised during the years. When taking a look back it can be seen that the purpose of IT was to improve the efficiency, cost efficiency and to create a better working environment for the employees. The appointed Vice County Governor asserts that they have been working hard to get a good governance environment which they have been able to keep these years. Further he believes that is important to have good governance from the beginning in order to get orderliness.

The appointed Vice County Governor states that the governance goals of the County Administrative Boards are political and set on a national level by the government to be fulfilled on a regional level. The same is for the management where the goal is to run projects with the set budget. This is done with support of IT where according to the Vice County Governor IT plays an enormous role to fulfil and reach the management and budget goals.

The IS chief claims the goal and purpose of their IT Governance is to support external enterprises and to meet their needs. Further he asserts that there still is a need for higher knowledge level among the executive managers to be able to provide the optimal governance. Compared to a couple years ago the knowledge level has increased among the executives and higher managers but there is still room for improvement. When taking a look at the knowledge level among the employees the knowledge and understanding of IT’s role is higher and this is thanks to the education all employees get when there is changes and updates in the enterprise. Another important factor is the age since the generation change and individuals with lower ages are more familiar with IT and the usage of the technology.

The appointed Vice County Governor believes the IT knowledge to be well spread among employees and the higher staffed within Kronoberg County Administrative Board. He further believes that the new generation has some basic knowledge and understanding which will be built on when working with IT and receiving education when updates and new systems and programs are implemented.
Both the IS chief and the appointed Vice County Governor believe IT to be an important factor of their organization. The IS chief believes the role IT plays in an enterprise is decisive and is an active part of an effective enterprise. IT has a supportive function which should be the key in any enterprise.

An area the IS chief believes is need of improvement is the evaluation and follow-up of finished projects. He states that they are working on developing and take in methods for evaluation on a regular basis. Further he states that the process of evaluation and follow-up has been good when professionals have been brought in for just this purpose. The Vice County Governor states that budget follow-ups are done continuously at national level to see if the set up budget it kept. When it comes to their local organization the follow-up is done regularly at the executive level but there is room for improvement.

4.3.3. Results

Governance Arrangement Matrix

The figure below (Figure 4:2) shows the result of the Governance Arrangement Matrix filled by the executive managers. The Arrangement Matrix was filled in by four division chiefs where the chief of the Administrative division is currently appointed Vice County Governor. Each column adds up to a total sum of 4.

<table>
<thead>
<tr>
<th>DECISION ARCHETYPE</th>
<th>IT Principles</th>
<th>IT Architecture</th>
<th>IT Infrastructure Strategies</th>
<th>Business Application Needs</th>
<th>IT Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Input Decision</td>
<td>Input Decision</td>
<td>Input Decision</td>
<td>Input Decision</td>
<td>Input Decision</td>
</tr>
<tr>
<td>Business Monarchy</td>
<td>4</td>
<td>4</td>
<td>2 (1)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>IT Monarchy</td>
<td>4</td>
<td>2</td>
<td>1 (1)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Feudal</td>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>(1)</td>
<td>(1)</td>
<td>1 (1)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Duopoly</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anarchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don’t Know</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 4:2. Result of Governance Arrangement Matrix

The highlighted cells represent the pattern of the most common combination of archetype and decision in the County Administrative Board of Kronoberg.
Governance Performance Survey

Table 4:1 illustrate the result of the two first questions in the Governance Performance Survey; the importance of different outcome and how well IT Governance meets the different outcomes.

<table>
<thead>
<tr>
<th>Governance Outcome</th>
<th>Average Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost-Effective use of IT</td>
<td>4,75</td>
</tr>
<tr>
<td>Effective use of IT for growth</td>
<td>3</td>
</tr>
<tr>
<td>Effective use of IT for asset utilization</td>
<td>4</td>
</tr>
<tr>
<td>Effective use of IT for business flexibility</td>
<td>3,75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Success Measure</th>
<th>Average Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost-Effective use of IT</td>
<td>3,75</td>
</tr>
<tr>
<td>Effective use of IT for growth</td>
<td>3</td>
</tr>
<tr>
<td>Effective use of IT for asset utilization</td>
<td>4,5</td>
</tr>
<tr>
<td>Effective use of IT for business flexibility</td>
<td>4,25</td>
</tr>
</tbody>
</table>

Table 4:1. Result of Governance Performance Survey

According to the executive managers the area where their IT Governance is most successful is within different units where often there has been a good strategies supporting the IT Governance but also the long co-operation with other internal and external units and authorities.

The executive managers have a bit distinct opinion on which areas the IT Governance is less effective. The appointed Vice County Governor, originally division chief for the administrative division and one other of the division chiefs agree that the area where the IT Governance is not effective is their time and salary reporting system where the system is not fully developed and result in lower credibility. One division chief does not see any area where their IT Governance is ineffective he only believe there are not enough personnel working with this issue. The other division chief believes that their IT Governance could be improved, he believes that the social unit have not made use of IT and they still work in the traditional way which makes them less efficient.
5. ANALYSIS AND CONCLUSIONS

This chapter will present an analysis of the empirical and theoretical framework. These two sections will be put against each other to finally reach correct and accurate conclusions.

5.1. Analysis

5.1.1. IT Governance and Management

There are several definitions of IT Governance, where most of them one way or another defines the connection between business and IT. Each definition has pieces fitting in to this study meanwhile the most suitable definition is Posthumusa and Solms. In the County Administrative Board the IT Governance is about policies and procedures that determine how IT resources can be controlled and directed so the resources simplifies to reach the business goals and the though budget.

According to a respondent, is IT Governance “not a one time project and there is no quick fix in the pursuit of good IT Governance. It should not be seen as a project but rather an ongoing process.”

This sum up what any enterprise should have in mind when implementing or re-implementing IT Governance. According to Weill and Ross but also one responder who researches in this field do all enterprises have IT Governance but they are not always aware of it or do not see the importance of good IT Governance.

When taking a look at what is necessary in order to reach good IT Governance is not much to ask in comparison of what the enterprise gain. When having good IT Governance decision making isn’t left to chance, right individuals takes the right decisions resulting in higher ROA, more value and efficient use of IT while risks are reduced.

Kronoberg County Administrative Board has an awareness of their IT Governance and Management. They have several projects involving changes which will presumably result in higher efficiency. Setting all County Administrative Board phone numbers to a single number results in higher effectiveness, better service to the customers and lower personnel costs. Yet another change is the decision taken by the Central Government where there should be better co-operation within the IT sector. This will result in all 21 County Administrative Boards in Sweden to use the same soft- and hardware, use the same domain and purchase, implement and take IT related decisions together as one unit. IT will be a more integrated part of the overall enterprise in a national level which will not only result in a more effective Governance and Management for Kronoberg County Administrative Board but also to the other 20 County Administrative Boards in Sweden.
Today there is not much cooperation among the different County Administrative Boards which results in development and purchase of more or less the same systems for the same type of projects which results in higher costs and perhaps not that high value of IT. With the IT project this might change. Although what Kronoberg County Administrative Board must have in mind is that the role IT will play in their local enterprise might change. It might be harder to generate value of IT since it may not achieve all needs since the IT sector will be centralized. This depends on how the other 20 counties are govern, if all 21 counties has the same IT Governance and Management this may not be a issues otherwise there might be a possibility that this might not turn out as they wish.

When asking random employees of they are aware of the County Administrative Boards strategies not every one are aware of them and this confirmed by the IS chief who further stated that their strategies and goals can be found on their Intranet and everyone interested can read these document. The same goes for the communication, most of the information is given tough the intranet while some projects and decisions, mainly from the higher authority is sent out as document to each division or/and unit chief. The most interesting way of communication and information spreading is though media. This difference the County Administrative Board from most other enterprises where as the media gives all employees but also the society the opportunity to follow the County Administrative Board in their work, their goals and their organizational changes.

Yet another shortcoming is that the County Administrative Board seem to not have a clear strategy and standard procedure concerning evaluation and follow-up of their work which is part of the first step PWC presents in order for successful IT Governance. They state though continuous support uttered by regular follow-up, sufficient available resources and support, good IT Governance can be achieved and run during conflict times. Further they state as the fourth step that IT Governance is about improving value of IT and there for it is important to measure if goals are achieved or not.

Additionally PWC presents a crucial step where they state for improvement of good IT Governance there is need for a well-defined plan and success will only be achieved if focus is maintained and agreed practices are executed as planed. The County Administrative Board fulfil this step since they have an activity plan developed by each unit, confirmed by each division chief and approved and decided for at the executive management level. The importance of this step is also confirmed by a respondent who is a member of ISACA who believes it is important to have written documents that guide IT and the rest of the enterprise. It is important to have a strategy in order to benefit the most from IT.
5.1.2. Results

According to Weill and Ross the Governance Arrangement Matrix and the Governance Performance Survey should be filled in by ten executive managers which was not possible in this case since the County Administrative Board only consist of six executive management members.

An interesting factor that most likely have changed the outcome of the benchmarking is the fact that one of the division chief was recently employed and was not hundred percent familiar with the County Administrative Board’s IT Governance and Management. Yet another factor that might have influenced the result is that one of the division chiefs is stand in for the Vice County Governor. He is originally from the administrative division which one could assume might have a higher level of knowledge and understanding in IT related issues. Meanwhile the factor which has affected the most would be that the appointed County Governor, or originally Vice County Governor had not the possibility to fill in the matrix and performance survey. The noticeable factor here is that according to a respondent some of the concepts and philosophy behind the matrix and performance survey might need further explanation among the executives. This shows once more that there is need for improvement of the knowledge level but it also implies the importance to have a staff which has this knowledge and is part of the decision taking group. This since they can support the County Governor and the Vice County Governor to take the right decisions concerning the role IT should and could have within their enterprise.

This is also confirmed by the theory; there is need for someone who advises the decision maker regarding IT Governance issues. This, according to Posthumusa and Solms reduce week board level guidance and the corporate strategy will support the enterprises objectives. The need of higher competence and understanding is also confirmed by Schildt et al. who states that IT is no longer just of managers but effective use of IT should come from the top of the hierarchy. Hence it is important that the CEO and CIO increase their understanding in the role IT has in their enterprise.

Governance Arrangement Matrix

When comparing the outcome of the Arrangement Matrix for the County Administrative Board of Kronoberg and the result of Weill and Ross’s study there is quite some difference.

The County Administrative Board matrix shows a clear path that the main archetype who takes decisions within the different decision areas are the business monarchy which in this case consist of the top managers and the executive managers; the County Governor, the Vice County Governor and the division chiefs. This comes as no surprise since the County Administrative Board is regulated by a higher authority and everything must be accounted for and hard budget limits must be kept.
Further it can be seen that some cells have an extra digit within a parenthesis. This is the result of how responders see the decision process; based on what kind of decisions it is and the extent of it. One respondent motivated his choice for the decision taker of the IT Infrastructure Strategies depending on if it is a bigger decision affecting the whole enterprise the executive managers took the final decision while if it was a smaller decision the division chief took the decision. In some cases there are several steps where different archetypes give input to the final decision. A respondent motivated that in some cases the input for the IT Architecture is first based on the needs each division has which goes to the next step where the IT group is involved while the final decision are taken by the executive managers.

Taking a look at the matrix as a whole the theory can be confirmed, according to Weill and Ross usually there is more than one person providing input to the different decision areas. The distinction is that according to the theory the same individuals providing input to the decision are those who take the decision which isn’t the case here. At the County Administrative Board as stated earlier all decisions are taken by the executive managers presumably since there are higher authorities involved and tougher guidelines and principles are set for decision making.

When analysing the dept of the matrix it can be seen that the input for the IT Principles is mostly given by the IT specialist while the decision is taken by the executive managers. Based on the theory it is important to clarify the enterprises goal for IT since it will affect all the other decisions. It is essential that all units’ needs are taken under consideration but also the external parties have their say of what they expect of the County Administrative Board. Based on the input given by these parties the decision should be taken by the executive managers with support of the IT and IS chief who has the technical knowledge.

The same goes for the IT Architecture, where it can be seen that most respondents believe the IT specialist are the ones giving input to the decisions. One respondent has on the other hand set the Federal archetype as the main input and set Federal within the parenthesis where the input is given to before the decision is taken. This though is in the right direction since the architecture provides a roadmap for standardisation of processes, data and technology and it is important that each division and external party’s interests are taken under consideration.

The purpose with IT Infrastructure Strategies is to enable organization-wide data sharing and cross-business integration. The respondents have different input archanities and the same goes for the decision taker where depending on whether the decision affects the whole enterprise or the single division. Since the IT infrastructure is the foundation of both human and technical capabilities and counts for approximately 55 percent of the total IT Investment it is important that the decisions are taken at a higher level with support of knowledgeable personnel.
The responders have been unanimous regarding the Business Applications Needs. Most responders agree the archetype providing input is the IT specialist while the executive managers take the final decisions. According to Weill and Ross’s study the typical input provider is federal archetype and so is the decision maker since the purpose is to take decisions which identify new and effective solution to deliver value to customers by using IT.

Regarding the IT Investments the respondents has answered that the input and decision making lies within the IT sector and executive managers. According to Weill and Ross there is three questions to have in mind when dealing with these type of decisions; How much to spend, what to spend it on and how to settle the needs? Once again, in order to be able to answer these questions the enterprise must see to the needs the enterprise has. The different division chiefs can together with external parties give input to what their needs are where the IT/IS chief together with the executive managers takes the final decisions in this area.

**Governance Performance Survey**

When analyzing the respondents answer it can be seen that most of the crosses are set at the positive side of the scale where most of them are set on 4. This is also reflected in the total score and the average results in the empirical chapter.

The score could be set even higher but since one respondent wasn’t familiar with the enterprise the response was average while another respondent did not consider there being much growth in an enterprise such as the Country Administrative Board and set the answers in the lower numbers of the scale.

An interesting aspect is that one respondent said that one unit did not have an effective use of IT since they still worked in a traditional way and did not make use of IT in order to be more efficient while another respondent believed there were not enough personnel working in this area. This shows that there is potential in the County Administrative Board to get a better IT Governance and Management even though as most respondents said there is no growth or competition is this enterprise. There is need of higher knowledge and understanding in the role IT plays among the employees and higher staffed personnel. By having the knowledge in the top of the hierarchy the knowledge and governance can be set to the lower levels of the hierarchy and IT can be used in a more efficient way.
5.2. Conclusions

- How can the IT Governance and Management within an enterprise be mapped and identified? What do the results show?

Together with the Governance Arrangement Matrix and the Governance Performance Survey deeper interviews are needed in order to be able to map and identify how the enterprise actually functions. At what level the knowledge is, how the strategies and policies are and is everyone aware of them? It is also important to see how the individuals work and co-operate and how the communication works in the enterprise.

The County Administrative Board of Kronoberg has the knowledge of good IT Governance and Management even though there are limitations and room for improvement. They have an ongoing project where the IT sector of all County Administrative Boards will have a better and stronger co-operation which will result in a more efficient and cost reduced use of IT. At the same time their IT solutions will presumably be safer and risks can easier be reduced and IT will be a more integrated part of the overall organization and governance.

Based on the Governance Performance Matrix it can be seen that most decisions are taken by the top management and the executive management. The input to the different decisions varies mainly since the type of decisions and its importance differ meanwhile it can be seen that the IT specialist have a big influence when dealing with input to decisions.

The Governance Performance Survey shows a result where Kronoberg County Administrative score total 62 out of 80\(^\text{28}\) in the first question measuring the importance of different outcome and total 56 out of 80 in the second question measuring how well IT Governance meet different outcomes. The third question of the survey shows that the areas where they have effective IT Governance is within units where there is strategies supporting the IT Governance and where there is long co-operation with internal units and external enterprises. The last question gave various answers, concluding in the need of improvement and as one respondent said need of more individuals working with this issue.

- How could the current IT Governance and Management solution of the contemplated enterprise be improved? Why and in what way?

Today is County Administrative Board of Kronoberg more or less aware of their strengths and weaknesses regarding IT Governance and Management. To put together their IT sector to one single unit will result in their IT to have a bigger and stronger role within the national organization. Further it is important to continue to

\(^{28}\) Since there were four respondents, four outcomes and a scale of maximum five, the total score will be 80.
increase the understanding and knowledge of IT within the enterprise. Everyone at the executive management level should have a better understanding of what role IT can play in their organization. The IT and IS sector should involve the division chiefs in IT related issues in order for them to gain a better understanding, resulting in better support to the County Governor and Vice County Governor in their decision making and reporting to the Central Government.

Weill and Ross’s Governance Arrangement Matrix (Figure 5:1) can be used to present a recommendation of who should give input to what decisions and who should take the final decision.

<table>
<thead>
<tr>
<th>DECISION</th>
<th>IT Principles</th>
<th>IT Architecture</th>
<th>IT Infrastructure Strategies</th>
<th>Business Application Needs</th>
<th>IT Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHETYPE</td>
<td>Input</td>
<td>Decision</td>
<td>Input</td>
<td>Decision</td>
<td>Input</td>
</tr>
<tr>
<td>Business Monarchy</td>
<td>Top &amp; Executive Managers</td>
<td>Top &amp; Executive Managers</td>
<td>Top &amp; Executive Managers</td>
<td>Top &amp; Executive Managers</td>
<td>Top &amp; Executive Managers</td>
</tr>
<tr>
<td>IT Monarchy</td>
<td>IT / IS Chief</td>
<td>IT / IS Chief</td>
<td>IT / IS Chief</td>
<td>IT / IS Chief</td>
<td>IT / IS Chief</td>
</tr>
<tr>
<td>Federal</td>
<td>IT unit &amp; Division chiefs &amp; external enterprise</td>
<td>IT unit &amp; Division chiefs &amp; external enterprise</td>
<td>Division chiefs &amp; external enterprise</td>
<td>Division chiefs &amp; external enterprise</td>
<td></td>
</tr>
<tr>
<td>Duopoly</td>
<td>(IT unit &amp; Executive Managers)</td>
<td>(IT unit &amp; Executive Managers)</td>
<td>IT unit &amp; division chiefs</td>
<td>IT unit &amp; division chiefs</td>
<td>IT unit &amp; Executive Managers</td>
</tr>
<tr>
<td>Anarchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 5:1. Governance Arrangement Matrix Recommendation

Co-operation is an important factor since the County Administrative Board has a complex environment. It is important to notice each division in order to govern the enterprise in the right direction. Many of the input cells are within the Federal and Duopoly cells implying the IT knowledge is needed in order to fulfill the different needs each division has resulting to fulfill needs the whole enterprise has.

It is also important to take the external enterprises in consideration since the County Administrative Board functions to support and provide resources to these enterprises in order for them to apply and reach the Central Governments goals.

If the executive managers and top managers has the support of knowledgeable personnel such as CIO’s and various IT knowledgeable personnel right IT decisions can be made, resulting the goals and the budget set by the higher authorities to be achieved and accomplished with the right use of IT.

Another improvement the County Administrative Board needs to work with is to make evaluation and follow-up of their projects, mainly projects involving IT as a standard procedure. This will result a better overview of the positive and negative
issues and use of IT and can reduce errors and risks in coming projects and the
governance and management goals can be achieved easier.

The County Administrative Board should continue with their regular education with
the personnel. In particular they should continue their activity plan since it provides
a guideline and a strategic plan of what they are supposed to do, how they should
do it and how IT can support them and be used in order to achieve higher efficiency.

**Question specific for the enterprise of the case study**

- What response can be awaited from the chosen focus group at The County Administrative Board to the improved IT Governance and Management solution?

The overall response from the focus group was positive where they agreed with the
most recommended points and some they already had as ongoing projects.

According to the focus group the recommended performance matrix was a correct
interpretation of the enterprise. The need each division and external enterprises has
is among the most important issues to consider since the County Administrative
Board functions as a supporting organ in the society. The Central Government says
what must be done and the County Administrative Board is supposed to do it.

The focus group also agreed that there is need for support of knowledgeable
personnel. Meanwhile they pointed out that it is more important that the knowledge
level and understanding of what role IT has increases among the executive and top
managers and that they should not be completely dependent on the support they
receive from IT knowledgeable personnel.

The recommendation the focus group pointed out as most important which they
have to work on and have had in consideration for a longer time is the follow-up
and evaluation of their projects. Although it is not easy to measure productivity in a
public authority it is important to see the outcome of different projects in order to
identify the long and short term benefits of coming projects.

Education among the employees is an investment that has paid off according to the
focus group and is something they will continue with. What the focus group believes
is that they need to find a balance between the knowledge the employees has and
the available support. There should be better strategies regarding the education
where everyone should have the basic knowledge and understanding of IT related
issues.
6. DISCUSSION AND REFLECTIONS

In this chapter a discussion and reflection of the reached conclusions are presented along with alternatives for further research. To finalize this chapter criticism to the own study is presented.

6.1. Discussion

At my first interview with an enterprise which was supposed to be my case study enterprise at the beginning of this study I talked to an internet administrator. He described their enterprise as well developed in the IT sector and being leading in what they do yet did not their IT chief or any IT related staff be a member of their board of directors or executive managers. This came to a surprise to me, but when interviewing the County Administrative Board I noticed that neither their IT chief or IS chief was a member of the executive managers. In this case there is a strong co-operation among the unit chiefs and their division chief, where all division chiefs are members of the executive management team. Occasionally unit chiefs are invited to the executive management team with an informative purpose. Yet, is it common that the IT people are left outside the governing and decision box?

This takes me to my next thought, when talking to one of the respondents, new employed for that matter, managed to change my concepts such as IT Governance to other concepts such as IT support, intranet and IT programs. This made me think of how this respondent was an executive manager and how different the IT knowledge and understanding was among the higher staffed in the County Administrative Board. At the same time I don’t think this will be a big threat if there is knowledgeable staff which can support the decision makers and give the right input, and I got the impression that there is.

My reached recommendations are very simple and even though they are specific for the County Administrative Board many of these recommendations and thoughts are applicable in various enterprises. Many of these recommendations are fundamental and not that much to ask of an enterprise, any enterprise compared to what the enterprise gains as stated in the theory and analysis.

The last interview I had with the focus group was the most interesting and giving meeting. It was interesting to hear about their relationship within the enterprise, especially in the administrative division. Their good relations and co-operation I think might be the reason why the IS chief believe that Lars Johansson, division chief for the Administrative division, now appointed Vice County Governor has the most knowledge and understanding of IT then the other division chiefs. The IS chief also believes the fact that since their division chief has become the appointed Vice County Governor his knowledge and understanding of IT has increased, that he has become more tuff and certain when it comes to IT. In my contact with the appointed Vice County Governor I got the impression he was knowledgeable in
IT and perhaps it depends on what the IS chiefs said. If it is that way, it should not be that hard to involve the other division chiefs in IT related issues, have better co-operation and in a natural way increase their knowledge and understanding of the role of IT.

The other interesting and giving point of the meeting was their response on the recommendations, the executive summary and empirical study done at their enterprise. It was interesting to see that the most division chiefs sees the IT specialist as the archetype giving input to the decisions while the reality according to the focus group is more similar to the recommended matrix. The same goes for the evaluation, the follow-up which seemed to be very important since they already have improvement in mind for that area. The result of the last meeting takes me back to my analysis and conclusions where I believe that the County Administrative Board of Kronoberg has an understanding of good IT Governance and Management, their weaknesses and strengths.

Out of curiosity of what result the national IT project might have, I asked the focus group how the other County Administrative Boards in Sweden was govern and managed. If each county had their own IT Governance and Management or if it was similar and there where guidelines to follow? The response I received supervised me, all 21 County Administrative Boards in Sweden is supposed to be govern and managed in more or less the same way but obviously there are minor differences and they believe that this IT project will help to overcome some of them. So perhaps will this project will not only help to improve Kronoberg County Administrative Board’s IT Governance and Management but also the other 20 County Administrative Boards of Sweden.

6.2. Reflections

As a starter I have to say that this thesis did not follow the path I thought it would when I started the research. Meanwhile it has resulted in more knowledge than I thought and a new approach to see the functionality and governance of an enterprise.

To do a study with and based on an actual enterprise has made this research much more interesting and more instructive. Meanwhile it has been much harder since one is dependent of the actual enterprise, to be able to get in touch with the right person at the right time and be able to get right answers you want.

Another point which made this study much more interesting is in fact the enterprise I choose to do my case study at. To have an enterprise, a public authority as a case study makes it much harder to get what you really want since you do not have accesses to the individuals you want and need and is forced to change your study.

29 Information about the Swedish Administrative Development Agency was received based on this question.
path some times. You can neither do much to change the organization since there are many parties involved, 21 in this study to be precise but there is also the Central Government of Sweden. At the same time I now have a better understanding of how this kind of enterprise are run and govern, quite different than the enterprises and organizations we studied during your education.

6.3. Further research

An interesting study which can be done is to take a deeper look at each division to see how the Governance and Management is functioning. The most interesting division to investigate is the Administrative division since one can assume they should have a better understanding and knowledge of the use of IT within their division but also within the whole enterprise.

Sweden’s 21 County Administrative Boards is currently working on a project which will result in all of them co-operating within the IT sector. It would be very interesting to see what this will result in and what IT’s role and importance will be after the project finishes. Also how this project would change Kronoberg County Administrative Boards IT Governance and Management.

Another idea is to further investigate and develop Weill & Ross’s Arrangement Matrix and Performance Survey, in order to improve the method for mapping an enterprises current IT Governance.

6.4. Criticism to the own research

One thing I would do differently if I where to write this thesis all over again would be to put more pressure on enterprises in order to get responses faster. I would start earlier to search for enterprises willing to be my case study enterprise. I believe that might affect the study since more time could be spent on deeper interviews, analysis and therefore result in a stronger thesis.

What makes me sad is that I was not able to reach a correct score based on Weill and Ross’s mathematically formula regarding the Governance Performance Survey. It was not easy to construe the text written by the authors and all attempts to reach a correct score ended in either to high or to low score. I believe it would have contributed much more to the analysis and said much more about the IT Governance and Management of Kronoberg County Administrative Board.

Another drawback which also can be seen as an access to this study has been the choice of the case study enterprise. By choosing an enterprise as big and complex as the County Administrative Board it requires much more time than I had or put on the study in order to be able to get the result I wised for at the beginning. It is not
easy to get in touch with individuals with high positions within an authority and set an appointment with them\textsuperscript{30}. Meanwhile even though it can be seen as a drawback I am glad that I finally choose Kronoberg County Administrative Board, I just wish I had chosen them from the beginning so I would had more time in order to do a better empirical study and reach better results.

\textsuperscript{30} There should not be any misunderstanding, I acknowledge and thank the individual who gave me their time and helped me with my empirical study despite the shortage of time.
7. REFERENCES

In this chapter the references used in this study are presented. The references are presented in order of the author’s last name. Figures and tables with no reference are developed by the author inspired or based on different references or reached conclusions.

7.1. Literary sources


7.2. Articles and other scientific sources


31 Swedish Göteborg


7.3. Electronic sources

Idaho University, Department of Math, Science, Technology and Social studies, “Research Guide, Primary & Secondary Data”, available online at: http://ed.isu.edu/research/Procedures/DataType.htm, [accessed: 19th March 2007]


Länsstyrelsen i Kronobergsln, “Om Länsstyrelsen”, available online at: http://www.g.lst.se/g/Om_Lansstyrelsen/, [accessed: 8th May 2007]

7.4. Unscientific sources


Various documents from Kronoberg County Administrative Board, available at: County Administrative Board of Kronoberg website or local office in Växjö

7.5. Interviews

7.5.1. Personal Interviews

- “Internet Administrator”, “Enterprise X” 32, 2007.04.03, Time: 10:00
- Michael Sundholm (IS Chief), Kronoberg CAB33, 2007.05.24, Time: 09:00
- Lennart Johansson (temporary Vice County Governor), Kronoberg CAB, 2007.05.29, Time: 09:30
- Michael Sundholm (IS Chief), Kronoberg CAB, 2007.05.29, Time: 10:00
- Lennart Johansson (temporary Vice County Governor), Kronoberg CAB, 2007.05.31, Time: 08:00
- Michael Sundholm (IS Chief), Kronoberg CAB, 2007.06.14, Time: 09:00

7.5.2. Phone Interviews

- Lena Elmdahl (Division Chief – Regional Development) Kronoberg CAB, 2007.05.30, Time: 10:00
- Sivert Eklundh (Division Chief – Agriculture and Veterinary) Kronoberg CAB, 2007.05.31, Time: 13:30
- Per-Olof Törnqvist (Division Chief – Nature and Environment) Kronoberg CAB, 2007.06.04, Time: 10:00

7.5.3. Mail Interviews

- “LEK” 34 (Environmental control), Kronoberg CAB, 10th May 2007
- ITGI Information (ISACA), 23rd May 2007 (suggested to contact a local ISACA chapter)
- Frej Öster (Senior Consultant, IT Advisory), KPMG, 28th May 2007
- Mårten Simonsson (Ph.D. Student KTH35), ISACA, 30th May 2007
- Urban Jonsson (IT director Stockholm Country Council), ISACA, 30th May 2007

---

32 Since I do not have permission from this particular enterprise to publish anything said on the meeting I have chosen to keep it anonymous and name the enterprise, “Enterprise X” and the person I talked to as “Internet Administrator”.
33 CAB is short of County Administrative Board
34 Since I do not have permission to publish the contacts name I will refer to the contact as “LEK”
35 Royal Institute of Technology – University in Stockholm
APPENDIX A – CobiT IT Processes Framework

Source: COBIT, 2006
APPENDIX B – Governance Arrangement Matrix

The intension with this matrix is to answer the following question when it comes to IT Governance within an enterprise; “What decisions must be made and who should make them?”

Decisions

- **IT Principles** – Clarify the business role of IT
- **IT Architecture** – Defining integration and standardisation requirements
- **IT Infrastructure** – Determine shared and enabling services
- **Business Application Needs** – Specify the business need for purchase or internally developed IT applications
- **IT Investments and Prioritisations** – Choosing with initiatives to fund and how much to spend

Archetypes

- **Business monarchy** – Top managers
- **IT monarchy** – IT specialists
- **Feudal** – Each business unit making independent decisions
- **Federal** – Combination of the corporate centre and the business units with or without IT people involved
- **IT duopoly** – IT group and one other group (for example, top management or business unit leaders)
- **Anarchy** – Isolated individual or small group decision making

<table>
<thead>
<tr>
<th>ARCHETYPE</th>
<th>IT Principles</th>
<th>IT Architecture</th>
<th>IT Infrastructure Strategies</th>
<th>Business Application Needs</th>
<th>IT Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Input</td>
<td>Decision</td>
<td>Input</td>
<td>Decision</td>
<td>Input</td>
</tr>
<tr>
<td>Business Monarchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT Monarchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feudal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duopoly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anarchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don’t Know</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

APPENDIX C – Governance Performance Survey

The intension with this survey is to assess the effectiveness of IT Governance within your enterprise. Please answer these questions for the part of the enterprise for which you are responsible.

1. How important are the following outcome of your IT Governance, on a scale from 1 (Not important) to 5 (Very important)?

<table>
<thead>
<tr>
<th>Governance Outcome</th>
<th>Not Important</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost-Effective use of IT</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Effective use of IT for growth</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Effective use of IT for asset utilization</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Effective use of IT for business flexibility</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

2. What is the influence of the IT Governance in your business on the following measures of success, on a scale from 1 (Not successful) to 5 (Very successful)?

<table>
<thead>
<tr>
<th>Success Measure</th>
<th>Not Successful</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Very Successful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost-Effective use of IT</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Effective use of IT for growth</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Effective use of IT for asset utilization</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Effective use of IT for business flexibility</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

3. What are the areas where IT Governance works best? Why?

4. What are the areas where IT Governance is not effective? Why?

Weill & Ross (2004)
APPENDIX D – Interview Template Case Study Enterprise

1. Presentation and introduction

- Thank you for having me.
- My intension with this study is to investigate and show how IT Governance and Management can make an enterprise more efficient.
- I will ensure the following ethical principles:
  - The information claim: that you have received information about the aim.
  - The claim of consent: I will not do or write anything you or the organization don’t approve.
  - The claim of confidentiality.
  - The claim of use: the information will not be used in a commercial context, the information will only be used for this purpose.

2. Questions

Background Questions of the Interviewed Person

1. What is your role within the enterprise?
2. What responsibilities do you have?

IT Governance

3. Could you talk about your IT Governance in Kronoberg County Administrative Board?
   - How does it work?
   - What are the goals?
   - What is the aim?
   - Changes? Improvement?

Management

4. Could you talk about your Management in Kronoberg County Administrative Board?
   - How does it work?
   - What are the goals?
   - What is the aim?
   - Changes? Improvement?

Roles and Responsibilities

5. What roles and responsibilities are there in the County Administrative Board?
   - Clear lines in the different Governance and Management areas?
   - Any area where there is no clear individual responsible?
6. What role and responsibilities do the board have?
   - Is the board involved and committed to IT-related issues?
   - Changes? Improvement?
7. What role and responsibilities do the IT department have?
   - Changes? Improvement?

8. Who takes the decisions?

9. Who gives input to the decisions?
   - Changes? Improvement?

**Strategies**

10. Could you talk about the strategies Kronoberg County Administrative Board has?
    - Strategies inline with the business goals?
    - What is the aim of the strategies?
    - Follows and is up to date with the enterprise overall development and progress?
    - Changes? Improvement?

11. Would you be of the opinion that the society is aware of Kronoberg County Administrative Boards strategies?
    - Changes? Improvement?

**Communication**

12. Could you talk about the communication? Mainly communication between the IT department and the rest of the enterprise?
    - In way is the communication expressed?
    - How are you informed of changes regarding IT related issues?
    - Changes? Improvement?

**Changes within the Enterprise**

13. Could you talk about changes within the County Administrative Board?
    - Who has decision rights regarding changes?
    - Changes? Improvement?

14. Could you give an example of a change?
    - Talk about the current change/project?

**Follow-up and Evaluation**

15. Could you talk about follow-up processes and evaluation of IT related issues and project?

16. Follow-up and evaluation overall?
    - How are the follow-ups and evaluations done?
    - Changes? Improvement?

**Education and Knowledge**

17. What is your opinion of knowledge and competence ability within Kronoberg County Administrative Board?
    - Do you have enough knowledge and education?
    - Do the board members have sufficient knowledge regarding IT issues?
    - Changes? Improvement?
APPENDIX E – Interview Template IT Governance & Management

Interview with KPMG – Frej Öster, Senior Consultant - IT Advisory

1. Presentation and introduction

- My intention with this study is to investigate and show how IT Governance and Management can make an enterprise more efficient and effective.

- I will ensure the following ethical principles:
  - **The information claim**: that you have received information about the aim.
  - **The claim of consent**: I will not do or write anything you or the organization don’t approve.
  - **The claim of confidentiality**.
  - **The claim of use**: the information will not be used in a commercial context, the information will only be used for this purpose.

2. Questions

1. What is your role within the enterprise?
   
   **Senior Consultant**

   1.1. What responsibilities do you have?

   - **Deliver consulting services such as**;
   - Reviews, advisory, recommendations etc related to IT Governance and IT Management.
   - Perform IT-audits/compliance reviews (system, security, SOX etc).
   - Purchase/procurement-support.

2. How do you and your enterprise define IT Governance?

   The responsibility of the board of directors and executive management. It is an integral part of enterprise governance and consists of the leadership and organizational structures and processes that ensure that the organization’s IT sustains and extends the organization’s strategies and objectives.

3. How do you and your enterprise define Management / IT Management?

   Structure, policies, procedures, accountability and monitoring practices in place in order to support the implementation of the IT Strategy and the governance of IT.

4. Do you believe IT Governance to be necessary within an enterprise?

   **Yes**.

   4.1. For what reason?

   To ensure that the organization’s IT sustains and extends the organization’s strategies and objectives.

5. What could the result and outcome of the implementation of right IT Governance and Management within an enterprise be?

   5.1. In what way?
• For IT to be aligned with the enterprise and realize the promised benefits
• For IT to enable the enterprise by exploiting opportunities and maximizing benefits
• For IT resources to be used responsibly
• For IT-related risks to be managed appropriately

6. What should an enterprise have in mind to not fail when implementing IT Governance and Management?
   That IT Governance and Management is not a one-time project. There is no quick fix in the pursuit of good IT Governance. It is a process, not a project.
APPENDIX E – Interview Template IT Governance & Management

Interview with ITGI – Mårten Simonsson, Ph.D. Student KTH

1. Presentation and introduction

- My intention with this study is to investigate and show how IT Governance and Management can make an enterprise more efficient and effective.

- I will ensure the following ethical principles:
  - The information claim: that you have received information about the aim.
  - The claim of consent: I will not do or write anything you or the organization don’t approve.
  - The claim of confidentiality.
  - The claim of use: the information will not be used in a commercial context, the information will only be used for this purpose.

2. Questions

1. What is your role within the enterprise?
   1.1. What responsibilities do you have?
   I’m a Ph. D student in the field of IT governance. My research goal is to improve the Cobit framework in terms of search cost and compare the IT governance within Swedish organizations.

2. How do you and your enterprise define IT Governance?
   It governance is about IT decisions: How they are made, by whom they are made and how it is ensured that the IT decisions are actioned.

3. How do you and your enterprise define Management / IT Management?
   It management does not, to the same extent, consider the business impact of IT. IT management lies more within the IT organization.

4. Do you believe IT Governance to be necessary within an enterprise?
   All companies have IT governance, yet some handle it in a more informal way. It is necessary to have a strategy for IT concerns in order to benefit the most from IT.
   4.1. For what reason?
   In order to benefit the most from IT.

5. What could the result and outcome of the implementation of right IT Governance and Management within an enterprise be?
   5.1. In what way?
   Clear roles and responsibilities for IT. Unified language use.
6. What should an enterprise have in mind to not fail when implementing IT Governance and Management?

Consider writing at least a few documents that guide IT. Apply some basic metrics that are valid for your organization. Inform IT staff and, in some cases, other employees, about these metrics. And the results achieved. Involve and inform management regarding IT concerns.
APPENDIX G – Interview Template IT Governance & Management

Interview with ITGI - Urban Jonsson, IT Director Stockholm Country Council

1. Presentation and introduction

- My intention with this study is to investigate and show how IT Governance and Management can make an enterprise more efficient and effective.

- I will ensure the following ethical principles:
  - The information claim: that you have received information about the aim.
  - The claim of consent: I will not do or write anything you or the organization don’t approve.
  - The claim of confidentiality.
  - The claim of use: the information will not be used in a commercial context, the information will only be used for this purpose.

2. Questions

1. What is your role within the enterprise?
   IT-director/CIO and member of the Corporate Management.

1.1. What responsibilities do you have?
   Responsible for IT in SLL.

2. How do you and your enterprise define IT Governance?
   Management system for managing IT.

3. How do you and your enterprise define Management / IT Management?
   It’s about using IT in the right way for right thing and at the right cost.

4. Do you believe IT Governance to be necessary within an enterprise?
   Yes

4.1. For what reason?
   IT is a key thing to establish an effective organisation with well managed processes.

5. What could the result and outcome of the implementation of right IT Governance and Management within an enterprise be?

5.1. In what way?
   Efficiency and effectiveness and cost control.

6. What should an enterprise have in mind to not fail when implementing IT Governance and Management?
   A business driven approach with both external and internal customer perspective and not IT or technology driven.