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Decision-Making in Project Management

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Abstract

This thesis researched how to improve the Decision-making process of a global IT-transformation programme operating in a complex environment with multiple dependencies. The research problem was approached with an open research question to allow exploratory study on the topic. The study was conducted as a qualitative case study by first analysing existing literature and finding best practice guides for decision-making in businesses. Then it was continued with an empirical research conducted in two parts: first analysing programme internal data and by conducting semi-structured interviews with eleven employees from the programme. The empirical research showed many procedures already in place to formalize decision-making. They were already quite mature and well established. The interviews provided an inside view to the existing process and revealed that though most knew the process, parts of it were unclear. Especially post-decision activities were seen to have room for improvement.

The research yielded interesting results and based on the findings the programme was recommended to define the decision-making process, to establish a demand funnel to filter only management relevant decision requests, to apply a general decision-making model based on theory, improve the post-decision activities by following a four step approach and by using three key performance indicators to measure the quality of the process. These recommendations would improve results and transparency of the process and clarify the linkages and meanings of different parts in it. As a single case study the results cannot be generalised, but the topic has potential for further research.

Keywords	Decision, Decision-making, Project Management, Process

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Glossary

Actor = Individual or group responsible for the decision

AHP = Analytic Hierarchy Process, decision-making methodology

AIT = Allianz IT-Infrastructure Transformation Programme

AMOS = Allianz Managed Operations and Services

DCC = Data Centre Consolidation Programme

Heuristic = "Rule of thumb", strategy, simplification or a common-sense rule (or set of rules) intended to increase the probability of solving some problem

Stream = Team inside the Programme

Sub-Stream = Sub-team inside a Stream

1 Introduction

The importance of good decision-making for organisations has many spokesmen. Companies face more competition and pressure than ever before, as the pace of change increases (Galbraith, 2002:2). They face constantly numerous choices from investment to recruitment decisions. As Selck (2004: 61) argues the balance between organizational stability and decision flexibility can be considered to be paramount for organizational efficiency. It can make a big difference for a business as a research paper published by McKinsey (2014:53) suggests: "Every success, every mishap, every opportunity seized or missed is the result of a decision that someone made or failed to make".

A company's effectiveness in decision-making reflects straight into its agility and therefore organisations need a working process for this to keep up with the changing environment (Grünig, 2009:1). Decision-making is not only vital for an organisation to keep on track but it can be a matter of success and failure as Crainer (1999) shows with several real life cases in his book. For example when Apple decided not to license its operating system to other manufacturers, it lost the chance to hold the monopoly that Microsoft now enjoys (Crainer, 1999: 217). Therefore, this research takes particular interest in studying the decision-making process in a global IT transformation programme, which faces many challenges in its complex operating environment.

1.1   Research Questions and Objectives

Due to many changes and increasing complexity in the Data Centre Consolidation (DCC) case programme, effective decision-making is a constant challenge. Sometimes decisions have not been implemented effectively leading to lost resources and ineffective decisions, which have not fully contributed to reaching the programmes goals. Consequently, the objective of this research is to provide practical recommendations to optimize and streamline decision-making. The research problem and questions are stated in Figure 1, and the central question for this research is: How could the decision-making process in DCC be improved? The author chose to tackle the

Research Problem:	Some decisions taken have lead to unstructured results not fully reaching the initial goals or reaching them less effectively as intended.
Central Question:	How could the decision-making process in DCC be improved?
Sub question 1:	What frameworks and guidelines does literature provide?
Sub question 2:	How are decisions currently made in DCC?
Sub question 3:	What recommendations can be derived based on literature and case specific research?

Figure 1. Research Problem and Questions

problem with an open research question to take a broad approach to the problem, thus leaving space for various definitions aiming at understanding the research phenomena in its real-life context (Jonker, 2010: 50). The problem has been approached from three aspects; first by examining what theoretical aid exists, secondly by conducting an empirical research to understand the context of the problem in its business environment and thirdly by concluding the gaps between the two before mentioned by

creating case specific recommendations based on literature. As a result the case programme should be able to increase quality in decisions, make them more effectively and gain better acceptance for them while improving the workforce's commitment.

1.2   Key Concepts

The key concepts in this thesis are the definitions of a decision, a decision-making process and "the actor". Decisions are chosen commitments to action as Drucker (1967:143) pointed out: "*a judgment, choice between alternatives"*. The decision-making process is the way one gets from finding out the initial problem to reaching a decision. In general it involves a series of information search, judgment and evaluation processes, which are followed by further post-decision processes (Raynard, 1997: 8). What should still be noted is that decisions are made in a social context and need to be justified to oneself and to others especially in an organisation where the impacts go far beyond an individual (Raynard, 1997: 3). Further in the text the decisive entities or person(s) will be referred to as "the actor" to describe the entity with the end responsibility of making the decision, as is often used in literature.

1.3   Methodology

The research was chosen to be done as a qualitative single case study, to produce a deeper understanding of the underlying information and issues. The empirical research was conducted by collecting secondary data from the case programme, meaning data, which has initially been collected for other purposes than this research (Malhotra, 2005: 127). The secondary data was analysed with the help of a theoretical best practice model discovered in the literature review. Preliminary data on the other hand is the data collected merely for this research's purposes, in this case by conducting qualitative interviews (Malhotra, 2005: 85). Eleven semi-structured interviews were carried through with programme employees from different levels of hierarchy, to establish an inside view on decision-making in the programme. The preliminary data was analysed using the interview recordings and summaries. A semi-structured questionnaire used in the interviews is presented in Appendix 1, which was sent to each interviewee beforehand to establish the grounds for the 30-45 minute interview.

In the "Research Methodology" chapter the data gathering and analysis is explained in further detail.

1.4   Structure of the thesis

The structure of this thesis follows the research questions presented earlier in Figure 1. Firstly the literature review establishes the theoretical framework and discovers the Best Practice model by Grünig et al (2009) used in this study. After the literature review the research methodology is described. It justifies the chosen methods of research and explains how the qualitative study was analysed. Following this the empirical study is described where the nature of the case programme and the research findings are presented to understand how decisions have been made in practice. The established processes are linked to theory and the semi-structured interviews show the interviewees views of the current process. The interview also defined from their perspective best practice in decision-making, challenges in the programme and defined the following characteristics of a good decision:

- Easy, efficient and explicit
- Leads to action with an impact resulting in an outcome
- Solves a problem

The research is then summarized in the conclusion chapter where the recommendations are presented. The study showed points in the current process to work on:

- Defining the Process
- Establishing a demand funnel for filtering decision requests
- Defining a DCC Decision-making Model
- Improving post-decision activities by following the "4 Post-decision steps"
- Establishing 3 key performance idicators to evaluate the process.

Lastly further research possibilities for the thesis topic are investigated concluding the research.

2   Decision-making in Literature

2.1   Literature Review

The topic of decision-making is familiar to all, because by taking them we keep ourselves active. As Finkelstein's (2009: 1) quote summarizes it: "Decision making lies at the heart of our personal and professional lives". It might be today's lunch or the education we choose to pursue, nonetheless choices are made constantly. Its significance to businesses is undeniable, because a business that cannot make decisions effectively and act upon them will lose ground (Rogers et al., 2014: 54). Also organisations executing critical decisions efficiently outperform those who implement brilliant decisions slowly (Rogers et al., 2006: 54). This is why businesses can benefit tremendously from decisiveness and action resulting from it.

As a science decision-making has been explored in Economics and Management literature already for some time, of which Decision Theory is evident proof (Gänswein, 2011: V). It has also been studied in mathematics, sociology, psychology, economics and political sciences, each providing a different perspective to it. Decision-making in a business environment is a separate topic in itself, because decisions made in a business context are meant keep the business up and running, grow and profit. As this thesis' research focuses on operations in a business context, the literature review has focused on management theories discovering best practice models creating a foundation for a starting point for this research. The objective was to create a conceptual model in order to find a way to evaluate the empirical phenomena as Jonker (2010: 27) points out being one of the main purposes for researching existing theory. In the next chapters the models for decision-making will be explored followed by a definition of post-decision activities, both then concluded in a summary.

2.1.1   Project Management theory

The case programme that is the focus of this thesis is running in a project structure using project management tools adopted from theory, such as milestone planning. This

provided the research a natural starting point for investigation. As a science project management has risen in significance in the past years and is relatively new. The subject revealed different methodologies to managing projects, which most refer to the widely recognized *Project Management Body of Knowledge* referred to as "PMBOK" created by the Project Management Institute (2013). It provides a theoretical guide to managing projects and programmes from the initiation to the closing phase. With regards to this thesis' topic it describes a "Monitoring and Controlling" part, which consists of processes with the aim of deciding and implementing corrective actions if the project deviates from planning (Project Management Institute, 2013: 57). This is relevant for the research because some of the monitoring and controlling tools from PMBOK theory have been put into practice in the case programme, which relate to decision-making, as will be discovered later in the empirical research part. However what was notable is that though models from the project management theory aid in keeping the project on track, they do not provide tools for decision-making in specific. The monitoring and controlling part rather describes the points where decisions are needed and the kind of decisions and action required. In the light of this discovery it was clear that best practice models and frameworks for decision-making had to be derived from other sources of literature. Therefore, this the present literature review will also look into the Analytical Hierarchy Process, Decision Analysis and then finally the General Heuristic Decision-making Process found most suitable for this thesis purposes.

2.1.2 Analytical Hierarchy Process

There are several models in literature providing tools and frameworks to structure decision-making into a defined, formal process. Saaty (2008) created the recognised Analytical Hierarchy Process (AHP) to enable analytical decisions where a number of alternatives are evaluated with respect to several criteria (Saaty, 2012: 85). The AHP is a theory of pairwise comparison, which uses expert judgment to draw priority scales and creates a mathematical analysis of the possible options (Saaty, 2008: 85). In the simplest manner the decision-problem is depicted in a hierarchy consisting of three levels: the goal of the decision on the top level, followed by a second level consisting of the criteria by which the alternatives, located in the third level, will be evaluated (Saaty, 2012: 86). Each alternative will then get a weighed criteria value indicating how well it complies with the criteria. Figure 2 illustrates an AHP hierarchy in a simple form. In general the AHP creates good results but is very laborious to use. It could be applied to a big one-time decision, but not to day-to-day operations decisions. Therefore, it does not suit the purpose of this research, because the aim is to define a
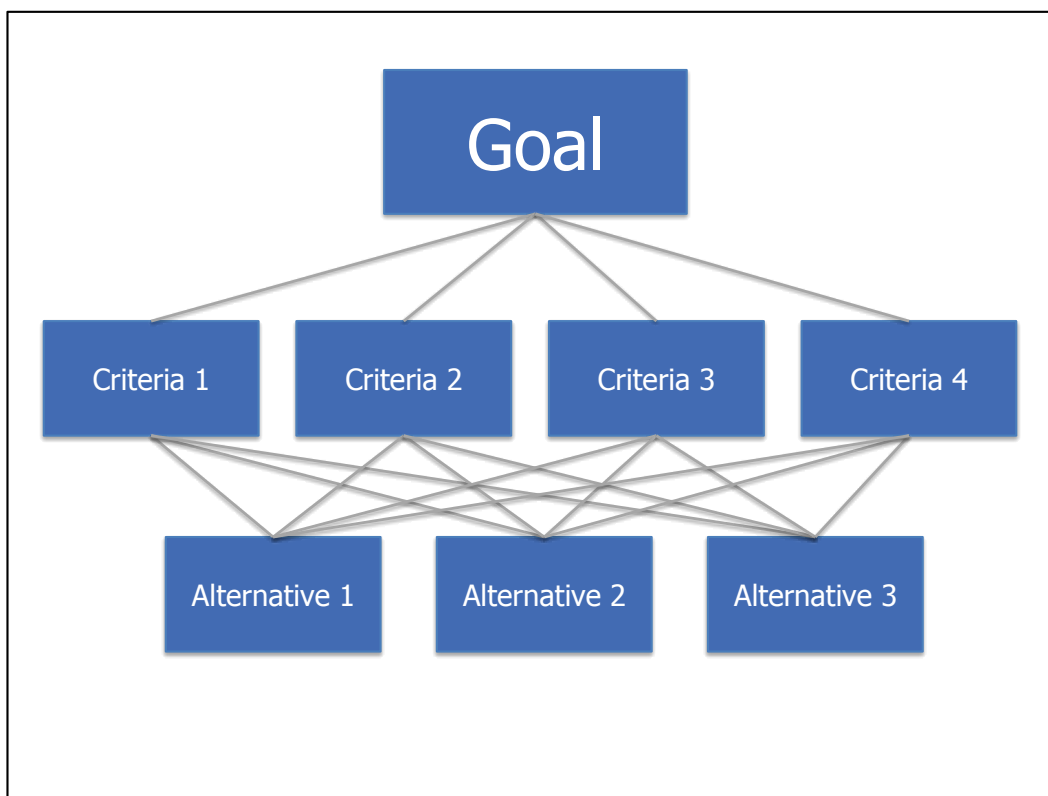
Figure 2. Simple three level decision hierarchy adopted from Saaty (2012)

decision-making process, which can be used on a more general basis, also in everyday work. Nevertheless, the AHP model creates a good formal approach to define options and evaluates how they reach the goal, putting the highest emphasis on the end result that matters the most. The decision hierarchy is in this sense a powerful tool to visualize how well the defined options fulfil the criteria.

2.1.3 Decision Analysis

Another widely known decision-making model has faced similar criticism of being laborious to use. Simplified, the decision-making model called Decision Analysis created by Howard (1988) approaches the problem requiring a decision, a "Decision Problem", with three steps: Formulate, Evaluate and Appraise. The core of the process is generally applicable and simple, but its several sub-phases take time to cover. The overall framework is logical and provides a good structure for thinking, as Figure 3 depicts. The core idea in itself is very practical. The ultimate aim is to develop a solution, which is so right for the actor, that there is no point in continuing the analysis further (Howard, 1988: 683). The overall process of Decision Analysis in detail provides interesting tools for analysis and for structuring thinking. However as this thesis

Figure 3. Decision Analysis Process adopted from Howard (1988)

focuses on the overall decision-making process and not in parts of it, this thesis will not go into detail explaining the tools for analysis, but further readings on the topic are recommended in the end.

2.1.4   General Heuristic Decision-making Process

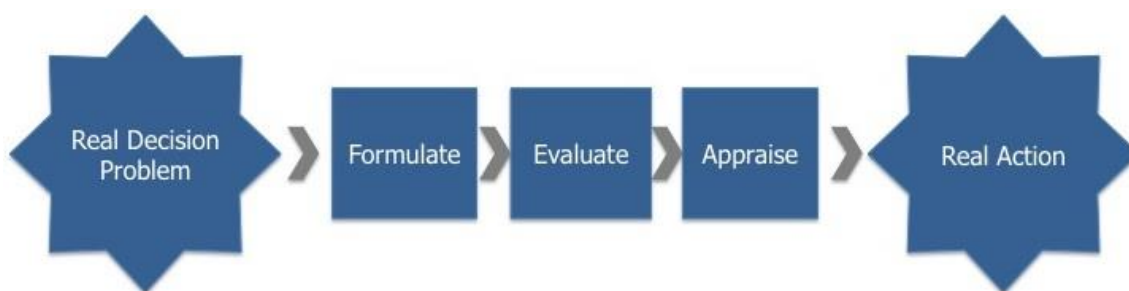In search for a different perspective, Grünig et al. (2009) have examined the subject of
the overall decision-making process keeping a practical point of view in mind. They
defined a seven-step approach called "The General Heuristic Decision Making Process"
presented in Figure 4. It covers phases from identifying the problem to reaching a
conclusion, being easy to grasp and aiming at providing a framework, which could be
used in businesses with relatively low application costs. It describes a process, which is
generally applicable and detailed enough to cover important aspects without

7 Step General Heuristic Decision-making Process
1.   Discovering the Decision Problem
a)   Planning the treatment of the Decision Problem
2.   Analysing the Decision Problem
a)   Planning further treatment of the Decision Problem
3.   Developing at least two options
4.   Defining the Decision Criteria
5.   If necessary, drawing up possible scenarios
6.   Determining the consequences of the options
7.   Establishing overall consequences & making the final decision
Successful Decision-making – A Systematic Approach to Complex Problems *Grünig R. et al (2009)*

Figure 4. General Heuristic Decision-making Process adopted from Grünig et al. (2009)

overemphasizing smaller points. The steps are similar as in the previously described
core decision-making process by Howard (1988) but slightly more detailed. In this
model the word "heuristic" is used as an adjective or noun to describe a "rule of
thumb", strategy or simplification, meaning there is almost total absence of formal
application restrictions and low application costs when using a heuristic process
(Grünig et al., 2009: 59). This is contrary to the two before mentioned models. The
word general indicates it is not designed for a specific problem, but is generally
applicable, which also suits the purposes of this research (Grünig et al., 2009: 59).

These two traits make the process suitable for several kinds of problem situations. The process described is both comprehensive, but simple enough to be adopted quite fast and therefore suits the purpose of this study. Though the general processes are criticised for producing decisions with less quality, they are nevertheless practical and provide a structured approach to ensure that at least no critical aspects are left out. With regards to this the model provides a suitable best practice model to compare the current processes in the Data Centre Consolidation Programme (DCC) to, and also something that can be challenged during the research process in the interviews.

2.2 Characteristics of information

During the literature review it became apparent that in a decision-making process one of the most critical phases is the analysis. It defines the basis on what the decision is made on and will define the nature of the options to be considered (Malhotra, 2005: 59). In general in analysis the nature of information plays a big role. Therefore, this thesis also addresses some general characteristics of information in decision-making. According to Malhotra (2005:59) the actor expects the information in a decision-making situation to be:

- Accurate
- Current
- Sufficient
- Available
- Relevant

The list presents an ideal to use as a target, but in practice all aspects can never be covered. It can be used as an indicator to identify and acknowledge gaps in the information available, to be taken into consideration when using it. From this list the *relevancy* of the information should never be compromised, because the information has to make "sense" to the decision problem at hand (Malhotra, 2005:59). All the other characteristics except this one might be questioned.

In different scenarios, different techniques will offer the best support for the actor (Malhotra, 2005:59). Different actors have different preferences on what kind of information they want and how they want to go through the process, so the dialogue between different individuals is important. The decision-maker should state clearly what expectations, objectives and information gaps he has; otherwise the rest of the team cannot work efficiently. They are likely to lose focus or focus on the wrong things, both being equally as bad and time consuming (Malhotra, 2005:59). Therefore, a decision framework such as the one presented above can be very helpful, but it should be applied according to the specific actor's preferences. Especially with limited time the actor has to prioritize what is needed and often intuition and past experience is used to determine this.

2.3   Challenging Information and Analysis

Once analysis has been conducted and information procured it is worthy to challenge the quality and relevancy of it. One effective way to do this is to take it into discussions with colleagues and others involved in making the decision. Discussion and disagreement stimulate imagination and force others to understand what is behind differing views (Drucker, 1967: 152). Drucker (1967: 152) also states that conflicting views can help ensure that as many different aspects as possible are covered; it challenges the facts, the analysis or even the need for the decision in the first place. Finkelstein (2009: 213) also asserts that a well-chosen decision group is more likely to ensure that assumptions are fully challenged, options rigorously debated, and biases exposed, ensuring the quality of the information.

How can one then decide whether an issue is worthwhile to be considered in a greater extent, when does it become a "decision-problem"? As in the first two steps in Grünig's et al (2009: 62) best practice model, it is one of the first steps that need to be done, to decide whether a decision problem should be put through a formal process or not. The way that Drucker (1967: XVI) suggests to do this is to consider how big is the conflict between the current and the desired future state, and what is the risk of action versus inaction. If the conflict found is significant and is deviating from the desired state remarkably and it will not "solve itself" it is worth taking to the process.

Also, when using a formal process the risk of "paralysis by analysis" should be kept in mind, meaning the decision problem and options are analysed so much that the end decision keeps on being postponed. This can be a tempting path to take because making a decision calls for courage as much as it requires judgment (Drucker, 1967: 157). At some point the actor has to decide when the point of maturity in the analysis has been reached and a course of action can be decided on. This is not usually an obvious phase and especially in a rapidly changing project environment, decisions are taken under uncertainty. Therefore, the actor has to rely on his judgment and experience to make the final call. Sometimes compromises have to be made but the actor has to have clear rules on what is acceptable and what is not. Then the decision can be taken with the information available. When this has been done it is time to consider what should happen after.

2.4   Post-decision activities

Before talking about what happens after a decision, the relevancy of the topic should be discussed. Some might argue that what happens after the decision is out of scope when talking about decision-making processes. After all, the process itself should basically end when a decision has been reached. Nevertheless, if one wants to achieve actual results and effectiveness in practice, the post-decision activities become crucial. This is why it has been taken into the scope of this research. As Drucker (1967: 114) aptly pointed out: "*Unless a decision has "degenerated into work" it is not a decision, it is at best a good intention.*" He also claims that the action to carry out a decision is the most time-consuming part of making one, but also the most important. Therefore, all decisions should be translated as close to the working level as possible, as simply as possible (Drucker, 1967: 114). This is done by defining clear action steps and by answering the question: "What is going to happen now that the decision has been taken?"

Found from another research, Howard (1988: 684) justifies the relevancy of this topic by pointing out that good decisions can lead to bad outcomes and vice versa. If one does not follow-up on it, one will never find out did if it lead to any good, as even the most logically consistent decision will not guarantee desired results. Howard

(1988:684) suggests distinguishing between the outcome and the decision itself to help to keep this in mind. It also helps to improve the quality of action, when it is understood, that the outcome cannot be entirely predicted but through good action it can be affected. In the following part ways to ensure proper action is taken and agreed on are introduced.

The effectiveness of a decision can be for example evaluated by measuring whether the decision has made a difference in time, money, action or impact. Drucker (1967: XVI) also suggests that a proper decision should always cover the following:

- Accountable identified
- Deadline outlined
- Affected people named (directly concerned)
- Names of indirectly effected people ("should-know")
- What needs to be done after, who does it and how

This serves as a good checklist to see that all relevant parties are identified and necessary steps agreed on. Found from Howard's (1988: 684) research the Decision Quality table as presented in Figure 5, takes a similar approach but a step further. It

Decision Framing "The Right Challenge"		
Decision Basis	Informational Excellence	
	Creativity – Significantly Different Alternatives	
	Clear Values	
Integration & Evaluation with Logic		
Balance of Basis		
Commitment to Action		

Figure 5. Quality of a Decision, adopted from Howard, R. (1988)

also considers the aspects of formulating the decision such as the framing, the basis on which it was made on, how the end conclusion was reached and then defining the commitment to action. This helps to understand if the decision itself was good and if it will lead to any action. It forces to evaluate in more general terms how the basis for the decision actually was. Although the post-decision phase is less discussed in literature than the process of making it, the ones that talk about it acknowledge its importance above all. PMBOK (2013: 57) also stresses the importance of monitoring and controlling to re-evaluate the work constantly to ensure things are running smoothly. They stress that the actor has to take interest in the decision outcome and identify persons to follow it in order to see how expectations turn out and to know the actual impact. Only this way the decisions will actually have an effect. These aspects will be taken along with the best practice model to the research, to examine what post-decision activities take place in DCC.

2.5   Summary

The literature review identified many relevant theories for this research. There are decision theories and analytical models, which allow thorough analysis of different aspects of a decision problem. However, as this case study focuses on understanding organisational reality, the theoretical base for it was chosen to be as pragmatic as possible. The fast changing project environment leaves little room for extensive analysis with mathematical probability modelling, so even with the chance of losing some accuracy in the analysis, the theoretical model for the research had to take a simpler approach.

As a result of the literature review the author decided that Grünig's et al (2009) best practice decision-making model serves the research's purpose best and can be used to evaluate the research findings from the empirical study. It covers the main aspects holistically that an effective decision-making process needs to ensure all is taken into account. With a focus on the overall process, specific tools for decision-making are out of scope for this thesis, but further readings are recommended in the end.

Characteristics of information and analysis were also discussed as they play an important role for the final decision. Above all the information should be relevant for

the decision problem. Information and analysis can be effectively challenged in group discussions to ensure their quality.

Of the post-decision activities follow-up, monitoring and tracking are repeatedly mentioned in literature. Project management theory base also describes how the monitoring and controlling processes are important for constant evaluation of the results in order to do adjustments when something is not working (Project Management Institute, 2013: 57). Drucker (1967: 114) pointed out the purpose of action by stating that without it a decision is at its best "a good intention", and really stressed the importance of what happens after a decision has been taken. For this thesis this is deemed to be one of the most critical points for the research, as the real change happens after a decision has been made. Therefore, it is crucial to know if the process is creating worthwhile actions, so proper follow-up has to be in place. The authors Drucker (1967) and Howard (1988) have defined checkpoints to ensure this. As a result the author took interest in examining how it is handled in the case programme and will take the post-decision checklists along with the best practice model to the research and analysis.

3   Research Methodology

This chapter explains the methodology of the research describing what methods were chosen to gather, process and analyse information and why. The author chose to use qualitative research methods as they address the goals of the open research question most suitably (Jonker, 2010: 78). This allows the researcher to try to understand the phenomena and develop an insight to the 'organisational reality' by cooperating in it (Jonker, 2010). A closed research question would not allow this sort of an exploratory research. As Malhotra (2005) asserts the qualitative method is also suitable when researching a complex phenomena, digging into sensitive information, looking at the holistic dimension and developing new theory, which all apply to this case study.

Also notable is that the author worked for the case company and therefore was well integrated into the organisation. This made her familiar with many of the existing

processes and provided good base knowledge. On one side this can be desirable, because qualitative methods aim at getting an "inside out" view (Jonker, 2010). On the other hand this can also be deemed as a threat because objectivity is hard to maintain when you are highly involved in the organisation. The researcher then has a double role as a researcher and a colleague, which can be hard to balance (Bryman et al, 2003). The author has taken this into account when evaluating the quality of the research in the last part of this chapter. In the following part the research process will be described.

3.1 Research Process

Semi-structured interviews were used to gather preliminary data for the purposes of this particular research (Malhotra, 2005: 16). Before this the secondary data, initially collected for other purposes than this research, were collected and analysed (Malhotra, 2005:). The two different sources of information provided two view points: the more fact based "hard-data" and the case specific data. In the following, the secondary and primary data collection processes are described.

3.1.1 Secondary Data Gathering

As Malhotra (2005: 16) argues, the secondary data may form a vital foundation and a clear focus for primary data collection, which was why it was collected and analysed before the interviews. As the case programme is vast in size it handles plenty of information. The author used past experience and discussions with the programme members to identify sources. The following criteria were used to determine the relevant ones: it had to contribute or be a part of the DCC Management level decision-making directly or indirectly. By direct meaning the source has been defined by the programme to contribute to decision-making and by indirect meaning it is not meant for decision-making solely or is for another purpose. With this in mind it was relatively effortless to distinguish the sources. The vague criteria allowed inclusion of different kinds of sources permitting the researcher to get a comprehensive picture of the phenomena. This way the picture became more accurate providing a good foundation for the preliminary data gathering.

3.1.2 Preliminary Data Gathering

After the secondary data analysis the preliminary data was gathered with semi-structured, direct, personal interviews allowing deep exploration of the topic (Jonker, 2010: 127). Each interviewee was selected based on their relevancy and the role they had in decision-making. This "purposive-sampling" means that each provided the opportunity to learn a great deal about the issues central to the research (Greener, 2008: 49). The aim was to interview ten employees of the DCC project from different levels of hierarchy: operational, middle- and top-management. This approach ensured that decision-making was examined from different viewpoints to get a holistic view of the overall process. The variety in the sample also reduced the risk of the researcher getting too much influenced by the interviewees' subjectivity, which is possible especially if such a small sample is from a homogenous group.

The interviews followed the structure of a direct, depth interview described by Malhotra (2005) encouraging the interviewee to talk freely on his/her thoughts on the subject. The interviews were all conducted in a similar manner. All participants were informed beforehand on the topics and question. Each one was asked permission to record the interview for the researcher's use only and that all quotes used in the thesis would be sent for approval, to reduce the risk of misinterpretation by the researcher. All interviewees were informed to be kept anonymous in the research and from each other to minimize external pressure. This also helped to build trust to ensure openness in the discussion, supported by the interviewers discretion (Greener, 2008: 83). Therefore, the results give an accurate picture of the interviewees' understanding of the decision-making in DCC. The semi-structured questionnaire used and sent to the interviewees is presented in Appendix 1. In the beginning of each interview the aim and structure of the interview were explained, followed by brief introductory questions. After this the interview was kicked off with the first topic and the subsequent flow of the discussion was determined by the interviewees responses.

After each interview the author wrote comprehensive summaries of the interviews and used the recordings when extracting direct quotes and making conclusions of the research results. In the following chapter the methods of analysis will be explained.

3.2   Data Analysis

The secondary data analysis was started by grouping the sources according to their characteristics, such as the medium it used or the type of information it was (written, process, meeting occurrences etc.). This was done because the author noticed that similar sources played a similar role, for example meetings were used for communication, analysis and decisions mostly. The grouping helped to characterize the nature of the source allowing it to be linked to Grünig's et al (2009: 62) best practice model described in the literature review. This way the author formed a picture of the programmes decision-making process based on a theoretical perspective and was able to see differences in theory and practice.

The preliminary data from the interviews were analysed in two parts: first separately and then by comparing the answers to the similar questions, which were the core ones asked from each interviewee and marked with a star in Appendix 1. In the separate analysis the author used the recordings and summaries to analyse the responses sentence by sentence, to understand each interviewee's point of view on the topic. Any conclusions or findings made were supported by exact word-to-word quotations. In the other part of the analysis the answers to the similar questions were directly compared and analysed sentence by sentence or if necessary word-to-word. The questions were formulated in a way that the responses could directly be linked to the theory base, which was further elaborated based on the research findings.

 This approach complies with the approach of "Grounded Theory" where the theory is used as a guide to examine the "real world" phenomena (Locke, 2001: 10). This is especially suitable for researching social processes such as decision-making, as Locke (2001:42) asserts: "its analytic approach can support the researcher in interpreting and conceptualizing social units found in the research situation". This then leads to the formulation of a "mini-theory" for the particular case based on formal theory, which is often the result of qualitative case studies (Jonker, 2010: 78).

3.3   Quality of the research

For the research findings to be of value, the validity and reliability of the study have to be taken into account (Seitovirta, 2011: 38). Reliability refers to the consistency or repeatability of the study and the term validity that the research actually answers rigorously the research question (Greener, 2008: 37). As these terms are originally defined for quantitative research, this thesis prefers the term "quality" to describe the overall trustworthiness of the case study and to establish confidence in the findings as Golafshani (2003: 599) suggests.

Qualitative methods are criticised for bearing the risk of strong subjectivity, which was recognized as early as possible by the author and included in the preparation, realisation and assessment of the research as recommended by Jonker (2010: 107). The author has described all research phases in detail to ensure the research is transparent to the reader. Jonker (2010: 89) also points out that qualitative methods lack an explicit theoretical model in the beginning, which was taken into account by forming a theoretical base and using a best practice model from literature to carry throughout the research. This ensured preparation was done in a proper manner. The realisation and assessment have been explicitly explained in this chapter to remove ambiguity on the research practices.

Jonker (2010: 81) also asserts that qualitative studies do not distinguish so clearly between facts and interpretations and that working with open questions means working with uncertainty. The author asserts that the nature of the open question was inevitable, so the aspect of uncertainty had to be dealt with in the research. The author did this by keeping the focus on the topic and constantly worked towards answering the research question as effectively as possible. It has been clearly stated where the author herself interpreted material to assure transparency. Jonker (2010: 104) suggests further research criteria for qualitative data such as understandability, transferability, utility and saturation. To ensure the logical and understandable flow of thought, the author asked third parties to review the research. The utility factor was evaluated and determined by the company supervisor, independent of the author. The author took all aspects into consideration found relevant for the research and hence ensured that with the given resources and time frame all possible aspects were covered and saturation achieved. The single criterion, which is not directly applicable

for this thesis, is the transferability of the research. One could argue that this case study is tailored for the case programme and therefore does not fulfil the mentioned criteria. Nevertheless, the author argues that the research methods have been described to a detail that allows a similar research to be conducted in a programme with similar characteristics (size, scope etc.) with minor case specific adjustments. This would allow the discovery of more generally applicable results.

Malhotra (2005: 41) asserts that as the secondary data has been initially collected for other purposes, so it may lack in accuracy or it may not be completely current or dependable. The author has taken this into account by evaluating the characteristics of the secondary data, not directly the content such as sales figures or the decision content. As long as the information the sources tell about the existing procedures and ways of working in the programme, their actual content is irrelevant for this research. Therefore, the only way the secondary source could be completely irrelevant is when it is not related to the research topic or it describes a process, which is not a part of the programme anymore. This possibility was ruled out by applying the before mentioned two criteria when choosing the relevant sources.

In the empirical study the conclusions and research findings from the interviews rely on the author's analysis and are therefore subject to human error, bias and subjectivity (Jonker, 2010: 104). These have all been taken into account when analysing the interview outcomes, using direct quotes to justify conclusions. This allows the reader to examine whether the authors reasoning is reasonable or not. Also the author's employment in the case programme created possible conflicts of interest and can make the author subject to directing the research for the organisations advantage. This might lead to wrong interpretations or misleading questions, which the author has avoided by taking solely the role of a researcher in all interviews conducted and by not imposing any of her own views in the discussions.

When conducting interviews in a language other than the interviewee's mother tongue, it is possible that some aspects will be missing, miscommunicated or misinterpreted by the researcher (Van Nes, 2010). During the interviews the author made considerable effort in making sure she understood the interviewees by summarizing during the discussions and asking them to confirm the way she formulated the answer to her own

understanding. Also all quotes used have been sent for approval to the interviewees to prevent any misinterpretations and understandings.

With all the before mentioned considerations the results of this thesis should be grounded and justified as reliable and trustworthy.

4   The Empirical Research

The previous part described the research process, data analysis and validity of this research. This chapter explains and examines the results of the empirical research conducted for this thesis. First the case company and programme are described to provide the necessary background information and context of the research. Then the research results will be discussed following a short summary of the key findings.

4.1   Company Overview

In order to understand the research, it is important to know the context where it is conducted and the environment it is pursuing to describe. The case programme is interesting and complex because of its various dependencies to different organisational and project entities. First the company is described because it is the context for the programme. Then in the next part the special characteristics and aims of the Data Centre Consolidation Programme are further clarified.

4.1.1   Allianz Managed Operations and Services SE

Allianz Managed Operations and Services SE (AMOS) is a fully owned subsidiary of the Allianz Group, which is a global company specialised in insurance and asset management (AMOS, 2013). Headquartered in Munich, AMOS has an international presence in eight countries and is currently employing about 2000 people. The objective of AMOS is to provide in-house IT Services and Operations for the entire Allianz Group, to support its strategic and business goals today and in the future. As high-quality, reliable IT-services are invaluable for a financial services company AMOS focuses on developing and offering the top-notch IT, operations and internal services

freeing up resources for the core business. It is supporting the Allianz Group strategy in ensuring sustainable growth, providing technological innovation, increasing quality, responsiveness and ensuring group security. One of the current targets is to drive digitalization in order to fully utilize the possibilities in IT. AMOS plays a key role in this by being the centrepiece of the harmonization and change projects affecting the entire Allianz Group. The Data Centre Consolidation Programme, the case programme for this thesis, is one of the most significant change drivers transforming and harmonizing the Group IT-infrastructure.

4.1.2   Data Centre Consolidation Programme

The aim of the Data Centre Consolidation Programme (DCC) is to harmonize, standardize and optimize the current IT-infrastructure of the group (DCC Validation Results Presentation, 2012). The programme is divided into work streams each specialised in one aspect of the programme, for example procuring data centre facilities and calculating business cases for the effected organisational entities (OE). The streams evolve in the course of the programme, but the structure stays the same: the programme management team manages the programme centrally and each work stream has its own deliverables and a lead responsible for delivering them. As the programme is quite big with some 200 employees, even the streams can be divided into sub-teams with their respective leads. This creates many levels of hierarchy and communication, which from the perspective of decision-making, increases the amount of stakeholders and people involved.

4.2   Research Overview

There are two sources from which the information of this thesis has been derived from: internal material provided by the programme and conducted interviews. The programme internal material, the secondary sources for this thesis, have been analysed first to develop an understanding of the current processes and ways of operating. Following this the outcomes of the interviews are presented.

4.2.1 The Current Decision-making Process

As a starting point for this research, the relevant secondary sources of information were identified. The sources were chosen based on their contribution and relevancy to the decision-making process either directly or indirectly as mentioned in the methodology part. The following sources and procedural information were identified, grouped together by common characteristics:

- Logs
- Memos
- Reporting
- Weekly Meetings

In the following Figure 6 the sources have been linked into Grünig's et al (2009) best practice model, to depict how the practical elements follow the theoretical model. As the figure shows, activities and procedures can be linked to each step in the Best Practice model showing how it is currently handled in the programme. Each source of information will be examined separately in relation to their content and contribution to the overall decision-making process.

Logs

The DCC Programme used two main logs to identify and track arising topics: risks and issues log (RID-log) and decision log. These two are a significant part of the overall process. As the names indicate the first log is used to input risks and issues, which come up in everyday work and the second one focuses merely on decision requests. These two logs are intertwined because risks and issues many times require action, which needs to be decided on. The RID-log tracks also risk items with lower priority whereas the items in the decision log are only issues that have been decided on or need a decision.

In the decision log they can also be raised to the programme management attention. The initial identification of decision needs, the problem identification, is often documented in the RID-log at first. When the issues evolve to require management attention, they are transformed into decision requests to the decision log. With regards

to the best practice model described by Grünig et al (2009) the RID- and decision log could be mapped to Step 1: Problem Discovery. The decision log coincides also with step 7: Establishing the overall consequences of the options and making the final decision, because it is used to present the final steps of the analysis to take a decision. Also step 3 where options are developed is relevant because they are defined in the decision log before raised to management.

7 Step General Heuristic Decision-making Process	DCC Current Process
1.Discovering the Decision Problem	Decision Log, Risk & Issues Log, reporting, weekly meetings
2.Analysing the Decision Problem	Change Requests, weekly meetings
3.Developing at least two options	Change Requests, Decision Log, weekly meetings
4.Defining the Decision Criteria	Weekly meetings
5.If necessary, drawing up possible scenarios	Weekly meetings
6.Determining the consequences of the options	Change Requests, weekly meetings
7.Establishing overall consequences & making the final decision	Decision Log, Change Requests, weekly meetings

Successful Decision-making – A Systematic Approach to Complex Problems Grünig R. et al (2009)

Figure 6. DCC Process linked to Grünig's et al (2009) model.

Memos

There are two types of memos used in the Programme that document relevant information for this thesis' research topic: change requests and the decision memo. Change requests are formal requests to expand, adjust or reduce project scope, product scope or quality requirements and schedule or cost baselines (Project Management Institute, 2013). They document and summarize a discovered problem

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Metropolia
University of Applied Sciences

and also include a suggestion for a possible course of action. They contribute to step 7: Establishing the overall consequences of the options and making the final decision, because it is presented when the final decision has to be made.

The decision memo documents the results from the decision point meeting, which is a management meeting intended for decision making as will be described later. The decision memo's purpose is to communicate programme wide relevant decisions taken by the DCC management. It is distributed to everyone in DCC and is issued on a weekly basis. However, the decision memo cannot be mapped to any of Grünig's et al (2009) best-practice steps because it is a part of the post-decision activities, communication. Communicating the decisions taken is the first step in transforming them into action.

Reporting

There are several kinds of different reports issued in the programme weekly, bi-weekly and monthly. As this research is concentrated on programme internal topics, there are two documents relevant: status reports and meeting minutes. The relevance of status reports is their role in continuously tracking the status and occurring events in the project, also adopted from project management theory (Project Management Institute, 2013). It is a feeder to step 1: problem discovery, as it is usually the first phase where arising topics are documented for discussion. Meeting minutes are one source of information where decisions taken are also documented. Though they are not classical reports they still "report" the outcomes of meetings and are used in all levels of hierarchy. Their purpose is to keep the meeting participants and other relevant stakeholders aware of important outcomes of discussions and therefore also contribute to post-decision activities and problem discovery.

Weekly Meetings

Managing a DCC scale programme requires communication and discussion, which is often conducted in formal meetings. Of the weekly meeting occurrences, four were of interest for this research:

- Stream Status Meetings

- DCC Status Meeting
- Decision Point
- AIT meetings

The meetings have been placed in order according to their management level involved, starting from stream internal meetings to cross-programme ones. Stream status Meeting is a team internal meeting where the stream lead is in contact with his/her operational team. This is the root level where problems are often identified and start escalating higher up. The stream lead takes up the issues that touch other streams to the DCC status meeting. If the issues still require programme management attention and decision-making, the issues are raised as decision requests to the Decision Point. If there are topics generally relevant to the whole AMOS organisation or if they affect the Allianz IT-Infrastructure Transformation Programme, they can be raised in the AIT meetings where AMOS top management is participating in the discussion. Though the information flow here is described bottom-up, it also goes top-down. For example decisions and DCC relevant topics discussed in the AIT meeting can be taken to the Decision Point and from there to internal status meetings and so on. Meetings act mainly as step 1: Problem discovery and step 7: Making the final decision points, but the problem points are also analysed and options for proceedings in various meetings are discussed. Therefore, the meeting occurrences play a role in all of the steps in Grünig's et al (2009) best practice decision-making procedure.

After establishing an understanding of the current procedures and research context, the following chapter will describe the outcomes of the interviews.

4.2.2   Perceptions of Decision Making

In this chapter the results of the interviews will be discussed following a key findings chapter of the empirical research part. The author interviewed ten people from the case programme plus one external stakeholder directly related to the programme. The interviewees were from various levels and roles. There were people from the central project management office (PMO), the operational level such as subject matter experts, the work stream leads level, country managers, and members of the

management team. Most had several years, even decades, experience of IT and project management. Over half had worked as a project manager or team lead where decision taking was a crucial part of the work. This allowed them all to reflect upon a broad pool of practical experience accumulated over time, to know what had really worked, which was of special value for the research.

The interview structure was explained before in the research methodology part and the interview questions are presented in Appendix 1. In the introductory part the interviewees were asked to explain their position, professional background and to identify themselves in one or more of the following three roles in a decision-making process: receiver, decision-maker or input provider. Interestingly ten out of eleven (90%) identified themselves as an input provider, five out of eleven (45%) as a receiver and seven out of eleven (63%) as a decision-maker in their daily work. For the relevancy of this study this means that the interviewees looked at the process from various perspectives, all had part in decisions taken by others. The respondents therefore presented a vastly diverse group of people and employees who were able to provide significant insights to the decision-making process in DCC and in general.

The interview itself was structured around three topic areas: Current decision-making process in DCC, best practice in decision-making and challenges in DCC. The findings will also be presented by these topics. The aim has been to establish an understanding of each employee's standpoint and then trying to identify the connecting and differentiating factors amongst the interview pool. Individual differences have been raised when they provided significance to the study and the interviewee's answers to the common question set were directly compared, as explained in the research methodology part.

Decision-making in DCC

In the first part the author wanted to understand what the interviewees knew and thought of the current process in DCC. Half of the respondents who had experience of other cultures than Germany, or came from one, reflected upon this on the decision-making topic as well. In different cultures the preferences for organising decision-making vary and one of the differences raised was consensus and commander-control

driven decision-making cultures. The programme was seen as following the firstly mentioned one where hierarchy plays a big role. Decision-making power lies in clearly defined hands and decisions can be imposed top-down throughout the hierarchy. Firstly the interviewees were asked to describe how they understand the current decision-making process in the programme to be. As the interviewees worked in different levels and tasks, their views on the decision-process were also different. Some had a very clear view on it and one interviewee even expressed it to be nearly "best practice" level. The process was described as follows:

"There is the tool support in SharePoint, where decisions are input to the Decision Log from which they are taken up to the Decision Point. Then the decisions are published."

"Typically issues come up on the working level, then when people "hit a wall" they escalate it in the project Management structure to the project manager, then with the project managers understanding the issue is evaluated if it can be solved internally, if not it will be escalated to DCC Management through the Decision Log."

To sum up the responses: the issues were mostly identified on the operational level from where they were escalated in the programme structure through the decision log when needed. For some, especially those closer to the operational level, the process was less clear as one stated:

"I would say this is an area where I have struggled in the programme, for me it wasn't clear how to get through the programme management to get a decision. -- Not a clear process on how your topics will be addressed, how to decide if your topic should be there or not."

This signifies that decision-making in the programme seems more relevant and familiar to the people with more decision-making power. The ones not directly involved in it are not familiarized with the process so much or taken into the round. This might be an intended choice also. While discussing the decision-making process it became clear that the amount of decisions is vast for such a large-scale programme. Some of the respondents regarded some of the decision information as "trivia". It raised concerns whether "the real" decisions disappear or get forgotten. Two interviewees mentioned:

"There was often lack of information and reasoning behind some decisions."
"Sometimes decisions taken by the Management seemed unnecessary and irrelevant."

On the other hand this also might be a conscious choice and intended, especially when the decision-making power is very clearly separated. Only a small group of people might be familiar with the backgrounds of the topics and therefore the underlying reasons are not apparent for others in the programme. This is supported also in the way leading people decided on their own whether to escalate decisions upwards or not. They used their own judgment to evaluate this and other teams might have not been involved in the discussion at all, or it might have been seen as unnecessary. The interviewees stated that when they could not solve the issue internally, they lacked the authority to make the call or it had heavy implications on others, it was taken upwards. Some quotes on the topic are below.

"A decision is escalated when we come to a dead end, when we've exhausted all the options we can."
"When the issue has two dimensions: dependencies on others or conflicting with own targets."

Two of the interviewees even mentioned "gut-feeling" and "intuition" as being deciding factors on whether to escalate topics or not. This means the judgment of the person in position of making the decision played as the filter in between the teams and the management. The available knowledge from the team and past experience were the guidelines on deciding what issues should be taken upwards and what not.

Another important aspect of decision-making in DCC and escalation raised in the interviews was the dependencies, especially to the Programme sponsors. As one interviewee described: "*they have the power to overrule the decisions taken*". This is an important aspect to take into account in the process, especially as such significant authority has a big influence. Overall the current decision-making process in DCC has been quite well established and understood by the interviewees as they all were able to describe the basic steps and knew how to drive topics further.

Defining Best Practice and a Good Decision

After the DCC Process, the interviewees described what was for them best practice in decision-making. Firstly, they all agreed on one thing: that the decision-making process for a programme of such nature should be formalized. The arguments for this did not vary a lot. The topic that came up most often was documentation. As the respondents said:

"To have the quality of thought behind the decision."
"There should be formal decision-making to have the audit trail with documentation."
"…You document how a decision has been made, and in hindsight it can said to be a good or bad but at the time you can only use the information you have at hand."

Documentation helps in sticking with what was agreed. When written down: "*The chance of a decision being forgotten is smaller*". What also came up was that documentation gives transparency and explains the logic behind the decision. It leaves less room for misunderstanding, as an interviewee mentioned: "*With this the "Grapevine" effect is reduced, thus keeping the message intact until it reaches the final audience.*" In a documented form everyone interprets at least the same words. In written a message can also be effectively communicated. With regards to this and the best practice model one respondent mentioned: "*this is the way it should look when presented outside to our stakeholders*" so when communicating decisions in best practice one needs consideration and carefully formulated decisions. Stakeholder management was deemed as a big aspect, that they are informed about decisions taken. As the interviewees mentioned:

"…Communication has to happen to realize it (the decision)".
"We had a disconnect between our stakeholders and ourselves, we didn't have enough airtime together. So I think we are improving and we can do more to improve senior stakeholder communication."
"If people don't know how to align, do stakeholder management and ask the right questions upfront, we have a high rejection rate and you always need more information."

When the initial target has been laid out and documented it is easier to look back after a certain time what progress had been made towards the goal.

These above mentioned aspects of documentation and communication came up another time when the interviewees were asked to share their opinion on the best practice model by Grünig et al (2009: 62) and to define what is a good decision. Firstly, to define a working process one needs to know what is the goal of it and this is why particular attention was paid to the answers of: "What is a good decision?" The quotes (answers) are presented in total in Appendix 2. Each quote was analysed word by word and the key words used for the analysis are underlined in Appendix 2. These underlined words such as "action" and "efficiency" were used to spot shared ideas and common topics between the quotes. As a result the following points were identified:

- Action, impact and outcome
- Efficiency, ease and explicitness
- Problem solving

These aspects sum-up the characteristics of a good decision for the respondents. A good decision should lead to action with an impact resulting in an outcome; it should be easy to take, efficient to act upon and explicit to be easily understood. In the end it should always contribute in solving a problem. As one of the quotes sums it up: "*A good decision is taken at the maximum of the elements you have.*"

When the interviewees were faced with the 7 Steps Best Practice Model by Grünig et al (2009) presented in the literature review in this research, the feedback was various. The respondents were asked whether the model was logical and practical to them. The majority agreed it was logical, but many also questioned its practicality. One respondent said: "*It is too much for everyday work, but could be applied to a one time big decision*" whereas another thought: "*Should and could be adopted into work more often*". Other comments were for example:

"*This process can be done only to very complex decisions. Sometimes this kind of an analytical approach can lead to over engineering.*"
"*Sub-consciously we indulge in practice such processes in most given circumstances.*"

There was a lot of discussion about the wording, for example an interviewee mentioned that "*a decision may not be the result of a problem, this is a model for decisions of choice"* meaning it is not applicable to all decision situations. In total seven respondents suggested adjustments, which have been added in red font to the following Figure 7. Steps 1 and 2 were suggested to be combined, because while discovering a problem, it was thought that the analysis of it should follow automatically. The inclusion of stakeholder alignment was regarded so important that it was mentioned multiple times in the interviews and has been therefore separately included. What sparked discussions the most were step 4: define criteria, step 5: draw scenarios and step 6: determine consequences. For the criteria definition there were different opinions and understandings:

"No two decisions can be based upon the same criteria."
"The criteria you can define just once since it is a more general topic."
"Defining the criteria is done before developing options."

The answers might differ because there are several kinds of criteria applied just for one decision. When reading the model it is not clear are these the criteria to evaluate if the decision should be taken forward, to formulate or eliminate between options or to make the final decision and so on. For example one could argue that a criterion such as "only issues of overarching relevance should go to this round" is a general one, because it can be applied to all decision problems, but then there can be many case specific ones as well, for example financial criteria for problems with a financial impact.

Another interest point was the scenarios. Even though the scenarios were in the original model put as "optional" all the interviewees mentioned that scenarios should be drawn, to understand where the options would lead. This is linked to thinking of your target state, to have an idea how and where you end up, or else it is impossible to make a decision. As was mentioned in the discussions:
"When you come up with options, the corresponding scenarios need to be already prepared."
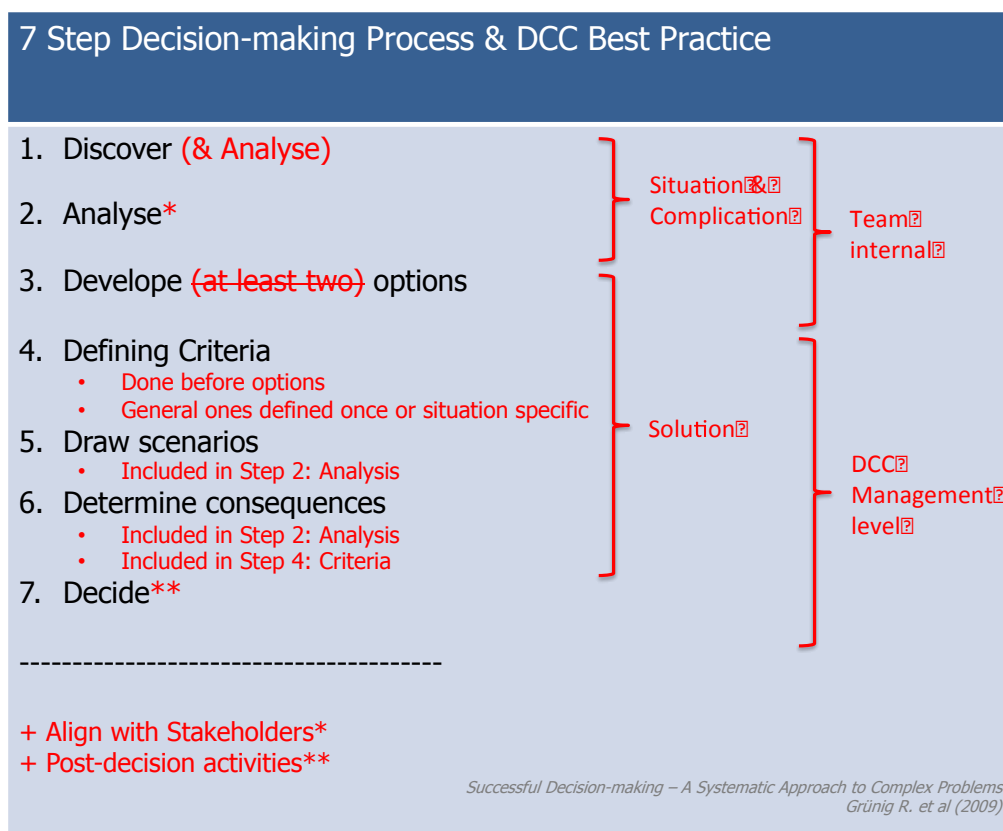
Figure 7. Grünig's et al 7 Step Process and DCC Best Practice

Determining consequences was also regarded as something done already earlier, not just on the last stages: *"Consequences need to be evaluated for the options because you need to know where the options take you."*

These were all seen as crucial points to the process, but just in different points than in the Best Practice Model presented.

Key Performance Indicators

The interviewees suggested Key Performance Indicators (KPI) to measure the process' quality. These suggestions are presented in total in Appendix 3. There were many ideas on what to take into account and what would be relevant to know. It became apparent that for decision-making metrics are not so simple to define because decisions by their nature are different. As one of the respondents put it:

"The question is: When is a decision-making process successful? If you're looking at a project then the answer is just how successful is your project. A well working process is worth nothing if you are not reaching your goals."

Some obvious measurements, such as the number of decisions taken, were not deemed as a good metric, because it would just increase the amount of trivia. Amongst others, what was suggested to measure was the amount of rejections or postponements to a decision.

"The amount of rejections or postponements to a decision is an indicator for a level of quality, because if the decisions are well prepared they can be straight away processed fast without any back and forth conversations."

Also many other interesting suggestions for KPI's came up such as amount of action and follow-up, measuring the satisfaction of the decision requester through a direct feedback channel, measuring repeat incidents – is the decision driving the outcome or more decisions, number of escalations and so on. The most interesting ones for this study will be further examined in the conclusion–chapter.

Post-decision Activities and Challenges

All the interviewees realized that no matter what the nature of the decision was, what counted were the actions. This is why post-decision activities were also included in Figure 7. No matter what the decision, it is merely a tool or a formality to take a certain course of action. As already became apparent in the literature review, decisions are nothing without the actions resulting from them. Therefore, it was an integral part of the research to understand what happens from the people's perspective after a decision had been taken. The follow-up activities turned out to be the part where the decision process had not been so far defined. What happened usually was documentation and communication, as already discovered in researching the secondary data:

"Actions and the decision itself are documented in the Decision Log and then communicated via the Decision Memo."

All interviewees recognized these steps. However the agreement for actions and implementation was not a part of the formal process. Quote: *"Your way of action is confirmed and you continue with your work, no formal follow-up."* On the DCC Management level it was trusted that the one requesting the decision takes care of necessary follow-up activities. As an interviewee mentioned:

"When I'm preparing a decision, also the required next steps and implementation are part of this. -- The follow-up and responsible are not identified on the Management level decisions concretely."

Challenges in decision-making

In the last part of the interview the interviewees were asked to identify the biggest challenges in decision-making in DCC. The aim of the question was to separate the most clear problem points to tackle, to help aim the recommendations to the right parts. Here the respondents' answers differed the most. The variation can be probably explained by obvious factors such as the position of work and experiences in the programme. The six biggest challenges identified are presented below in Figure 8. One of the main challenges raised was communication due to the difficulty of identifying the right audience and the right way to present especially challenging technical information. Quote:

Biggest Challenges in Decision-making in DCC	
Communication	Changes
Complexity	Dependencies
Content knowledge	Limited Resources

Figure 8. Challenges in DCC

"Communicating the information to the right audience, keeping the receiver in mind, generalizing when required, should minimize the risk of misunderstanding the message. Wording is especially crucial."

This has also been noticed in the programme earlier, which resulted in communication mediums such as the decision memo, which was put in place. Other big challenges were related to the large size of the programme and its highly specialised topics (complexity, content knowledge, dependencies) that requires an extensive workforce, expertise knowledge and strong management. These are all hard to manage in a large-scale programme. The other two challenges, changes and limited resources, are also related to the programmes vast size leading to challenges in managing it. Constant changes make people lose focus and limited resources are one of the classic project constraints.

4.3   Key findings

The case programme operates in an international environment with multiple dependencies. It is a global change programme, aimed at harmonizing and standardizing the IT infrastructure of the entire Allianz Group. In the secondary data research it became apparent that there are many things in place to formalize decision-making in the programme. There were various sources of information identified, which were categorized into the following: logs, memos, reporting and weekly meetings. As presented in Figure 6, these were then further mapped with the best practice model derived from theory. It presented how the current practices coincided with the theoretical model. It showed that the case programme had established many pillars to formalize decision-making. These processes had been in place for some time and were quite well established. The programme had adopted formality to quite an extent and worked on continuously improving. Its global nature created complexity also to decision-making, as many dependencies inside the company and into other Allianz entities across borders had to be taken into account. Regular meetings for decisions, memos and logs kept the programme up to date on the newest issues.

The second part of the research was conducted by semi-structured interviews with ten employees, from various roles and levels of hierarchy. The interviews defined the key aspects of decision-making in the programme, the definition of a good decision and best practice form the viewpoint of the employees. In the interviews it became apparent that people had idea of what was in place but some parts were not fully understood or were unclear. Documentation and communication of decisions were regarded important, to realize them and keep track of following actions. The interviewees were also familiar with all the aspects found out in the secondary research. They pointed out that decision problems were mostly identified in the operational level and then taken to the Management level in the programme structure. The current process was criticised not always being transparent enough and that strong stakeholder dependencies created big challenges and changes. Also the definition of what should be escalated to the formal decision-making process was not clear to all; everyone used their own judgment in deciding what was relevant.

What the respondents agreed on is that a formal process is needed for a programme of this size. It brings clarity and documentation preventing the loss of decisions. This is also supported in literature, as Grünig et al (2009: 59) points out a formal process helps focus on the overall objective, produces transparency and optimizes the use of the available knowledge base. Key aspects of decisions found in the research have been concluded into Appendix 4 such as why they are made and what different types of decisions exist. Overall especially acting on decisions was regarded as the most important thing. All interviewees emphasized that the result of the decision is what counts. Decisions should always be thought through, aligned with relevant stakeholders, documented, communicated and then afterwards the outcomes evaluated.

In the last part of the interview where the interviewees described the biggest challenges in decision-making in DCC and commented on the best practice model from literature, response varied the most. Especially what people thought as the biggest challenge in decision-making in DCC differed individually. Some themes, such as complexity, communication and dependencies came up more than once but in general there were more differences than similarities. All respondents had very clear views on how decisions should be made and had and were able to identify key aspects of it from

the case programme. The best practice model by Grünig et al (2009: 62) raised discussion and opinions. Mostly all agreed that the parts are logical but some wordings and order were suggested to be changed.

5   Conclusion

The research results have been summarized in this chapter with recommendations to the case programme, concluded with further research possibilities. The literature review revealed many different theories related to decision-making. There are several models from complex mathematical ones to a few word frameworks, providing aid and guidance for decision-making. For this research Grünig's et al (2009: 62) General Heuristic Decision-making process was found suitable to help evaluate the current DCC decision process. Its low application costs and suitability for problems of different nature allowed it to be adapted in different situations (Grünig et al, 2009: 45). The empirical research's secondary data analysis revealed that the programme had formalized its decision-making to quite an extent, but the interviews showed the process was not clear to all. The key findings and recommendations summarized below in Figure 10 answering the research questions presented in the introduction. In the following part the recommendations are explained.

Research Questions	Key Findings	Recommendations
How could the decision-making process in DCC be improved?	The process for decision-making was not clear or transparent to everyone	Define the process and a DCC specific decision-making model, use 3 KPIs to measure quality, establish a demand funnel
Sub question 1: What frameworks and guidelines does literature provide?	Several models have been created from mathematical accuracy to rough few word frameworks	Best Practice model from literature to be used as a guide for decision-making
Sub question 2: How are decisions currently made in DCC?	Decision-making has been formalized to an extent with various tools.	Define the role and purpose of current tools and their connection to the overall process.
Sub question 3: What recommendations can be derived based on literature and case specific research?	Some gaps were identified between practice and theory	Use the findings to adjust theoretical models to fit the case programme's needs.

Figure 9. Research Questions with Key Findings

5.1   Recommendations for the Case Programme

Based on the key findings this thesis recommends the case programme the following five points to improve its current decision-making process:

1. Define the decision-making process
2. Establish a demand funnel to filter decision requests
3. Apply a general decision-making model in DCC
4. Improve post-decision activities by following "The 4 Post-decision Steps"
5. Use 3 KPIs to measure the quality of the decision-making process

Each recommendation will be explained in more detail in the outlined order, starting with number 1: Define the decision-making process.

5.1.1   Define the Decision-making Process

By creating an overall framework for the programme, by defining the process and the linkages of different parts in the process, the usability and aims of it should become clearer to its users. Figure 10 below presents a model of the DCC Decision-making process as discovered in this research. It describes on a high-level the connections in a format, which is concise and easy to communicate. The starting point identifying the "Decision request" is equivalent to the term "Decision Problem" earlier used in this thesis. It is an issue, which requires a decision one way or another. The idea of this simple framework is to remove ambiguity from anyone who is faced with having to enter the formal process to get a decision. The figure of the process is a visual tool to help grasp the big picture. In addition to this process each of its steps should be documented on top to identify roles, interfaces, prerequisites and indicative timelines for each, who is or should be involved in each step. It should be documented how the process should be understood and which parties are involved in what phase, who has the responsibility to for example decide how issues are taken forward. In the process figure the mentioned Demand Funnel and the Post-decision Steps will be explained to clarify their aim and purpose.
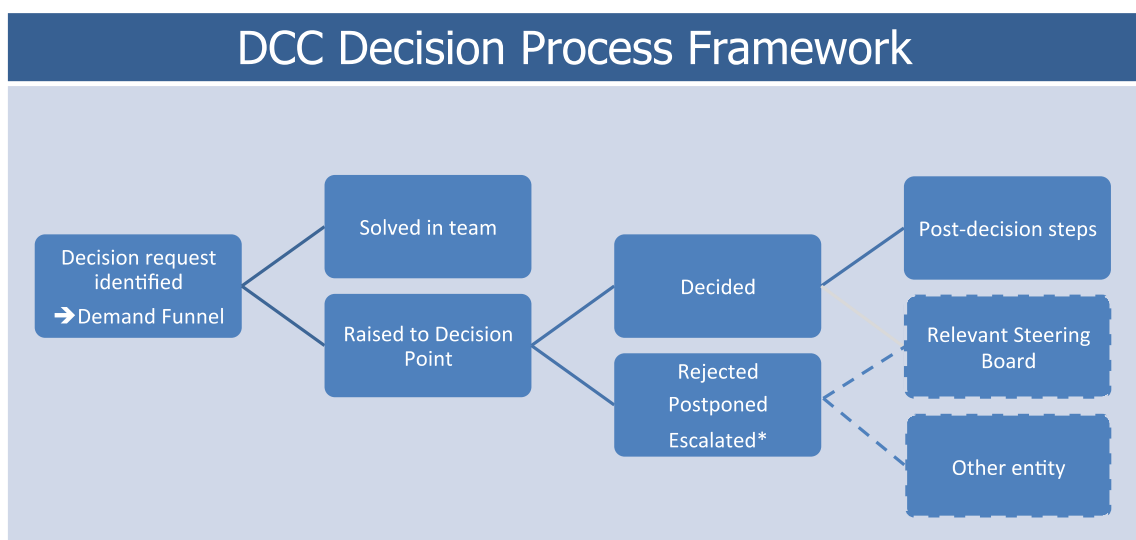

Figure 10. DCC Decision Process

5.1.2   Demand Funnel

After establishing the framework for the process the next step is to decide what information should go through the process. To filter the demands the author recommends the use of the concept of a "Demand Funnel". The concept of the Demand Funnel is depicted in Figure 11 and the idea is simple: each decision problem identified establishes the "demand", which is evaluated against a similar set of criteria.

Demand Funnel

All Decision Requests

Criteria

Level 0-2 Milestones compromised?
Strong dependencies?
Financial impacts?
Out of own scope?

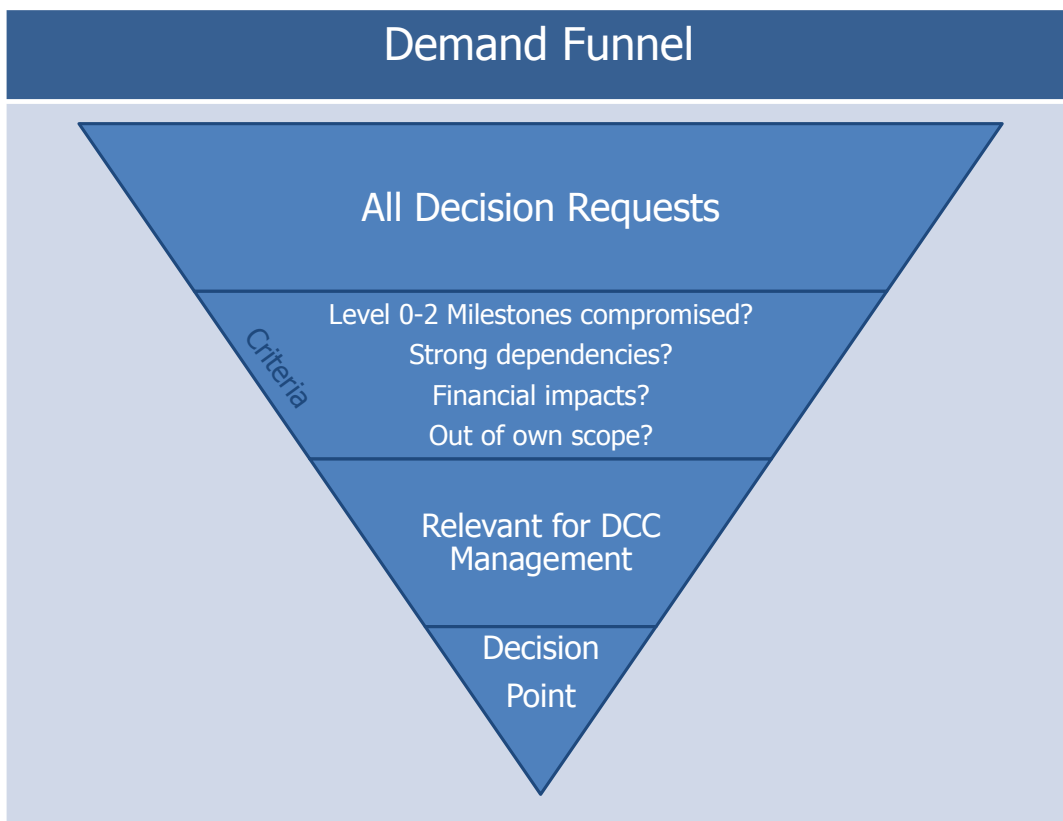### Relevant for DCC Management

Decision Point

Figure 11. Demand Funnel

These criteria determine whether the issue moves forward or not and are so general that they can be applied to all decisions. If the demand for a decision fulfils at least one criterion, it will be taken to the DCC Management. With this the amount of trivia should be reduced, which should further enhance the quality of the topics taken to the management level. Before the decision requests go up to the management level they have to be prepared accordingly. The third recommendation addresses this.

5.1.3   The General Decision-making Model

As a result of the empirical research the Seven Step General Heuristic Decision Making Process by Grünig et al. (2009: 62) identified in literature has been modified according to the interviewees' feedback. This model, represented in Figure 12, is a general decision-making guideline for everyone to use in the programme. It is not restricted to management level decisions only, as the elements are applicable generally. Its idea is to provide a tool with main principals to use as a checklist ensuring the decision taken covers all necessary aspects. It is more of a "good decision checklist" rather than a detailed tool for analysis. Its core idea is to ensure the options available can produce a
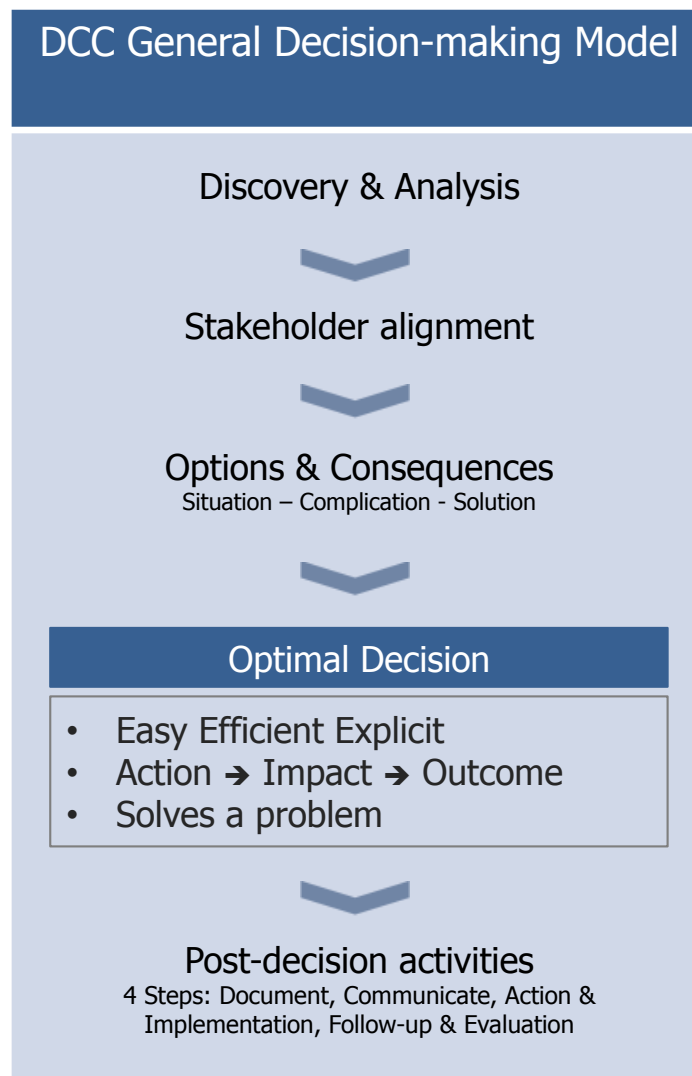

Figure 12. DCC General Decision-making model

decision, which is easy to make, take and can be formulated explicitly. Then it is already on a good track. Then it should lead to action with an impact resulting in the desired outcome solving the initial problem. If these aspects are fulfilled the decision is an optimal one. Most likely all can never be covered, but they provide a high aim.

5.1.4 Four Post-decision Steps

To ensure proper impact results from the decisions, they have to be carried out properly. The case programme has procedures in place to make a decision, but what happens after is not really controlled. As pointed in the literature review both Howard (1988: 684) and Drucker (1967: XVI) had defined checklists to ensure that follow-up activities are properly conducted. In a program as wide as DCC formal follow-up might mean lengthy tasks, logs and follow-ups, so it is proper to evaluate what is the length and extent to which it is necessary. If the follow-up is not conducted the effort, which is put into getting the decisions, is pointless. A boundary rule should be identified where one can say that the decision has reached or not reached its desired outcome where after it can either be closed or re-evaluated. In this research the necessary post-decision steps have been defined below in Figure 13 and they are as follows: Documentation, Communication, Action & Implementation and Follow-up & Evaluation. From these four stages especially action is important, as this was also a part of Howard's (1988: 684) and Drucker's (1967: XVI) post-decision checklists. In the research the interviewee's mentioned often re-evaluation of the taken decision so it has been raised as an independent point along with follow-up. The main point is to recognize if the decision has not sparked the wished effects, it should be rethought. Otherwise the initial problem will never be totally solved, it will just continue creeping on and creating more problems.

The first two steps documentation and communication might seem obvious, as they create the base on which all future activities will be evaluated on afterwards. As one of the interviewees mentioned: "*whether a decision is good or not can only be evaluated in hindsight*" and to be able to do this the decision taken has to be written down somewhere in black and white and communicated. In the communication step all relevant stakeholders should be identified and informed, ensuring everyone who should know about the decision knows about it. Communication should also be efficient

and active, especially with important information. It should not be assumed that people inform themselves; the information should come in a way that people get informed. The post-decision activities should be coordinated centrally to ensure proper documentation in a way that is easily accessible and stored in one place. Therefore especially the first step, documentation, should be done by the central project management office (PMO). In addition to this it is beneficial if the concerned teams document this for their internal use as well. For communication the central PMO is

4 Steps: Post-decision Activities

Documentation
- Write down the decision and who took part in taking it
- Short justification and topic background
- Agree action steps & timeline

Communication
- Identify relevant stakeholders
- First step in realizing the decision

Action & Implementation
- Follow the Action steps
- Take the decision to practice

Follow-up & Evaluation
- After the timeline assess the progress
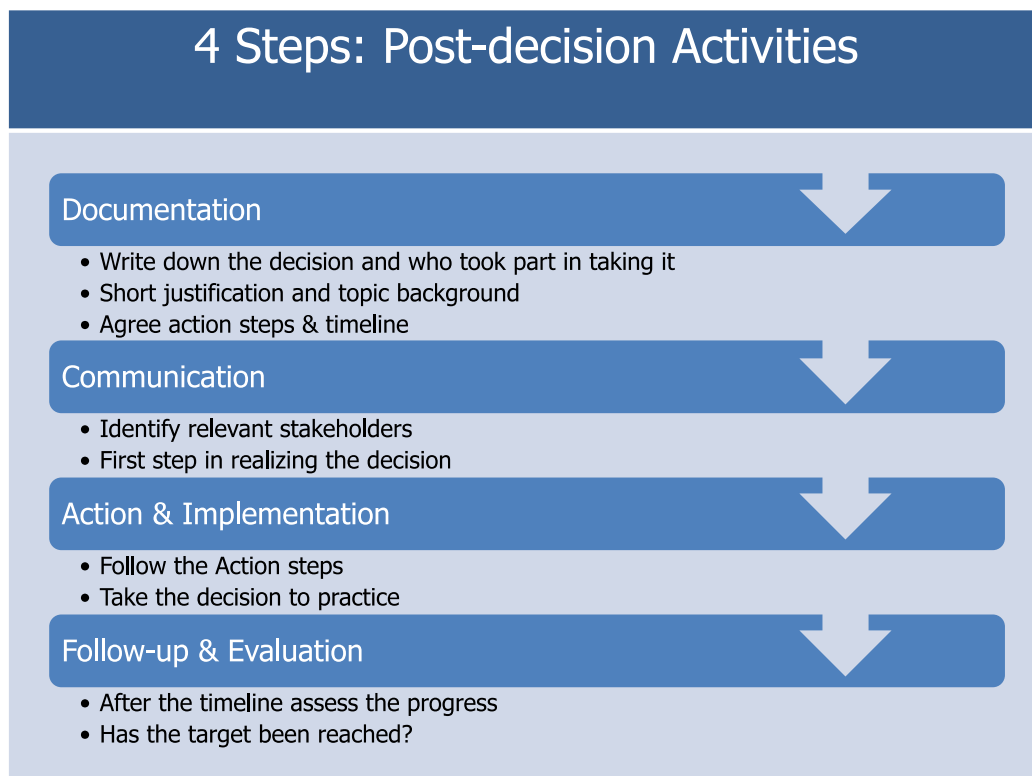- Has the target been reached?

Figure 13. Post-decision steps

again playing a main role as it is the interface all teams and outside stakeholders. Therefore the PMO's communication team should also with decisions solely handle outside communication to avoid confusion and mixed messages. Stream leads should make sure their teams are aware of important matters but communication to external stakeholders should be handled centrally.

Then followed by the action and implementation part, the decision is actually realized. Action and implementation lie in the hands of the affected Stream, as they are the ones carrying out the decision. Follow-up and evaluation should then again be

coordinated centrally to have an overall picture of on-going activities, albeit the streams should also keep track of activities internally as well. This will also ensure that the actions they report to the central PMO are properly evaluated and looked through.

5.1.5   Key Performance Indicators

The last recommendation is concerned with monitoring the quality of the overall process. When the goal is to improve a process it is just as important to define metrics for measuring it than it is to define the improvement points. As a result from the KPIs suggested, presented in Appendix 3, the author chose three to recommend to the case programme. The ones recommended are:

1. Total number of rejections and postponements in a month
2. Average number of escalated decisions in a month
3. Direct feedback channel

The justification for these three are that they are usable, do not require a huge effort and still provide key information easy to understand and interpret. In the case of the first KPI, in the beginning of a new month all previous month's decision rejections and postponements would be counted in total. A high amount of these will indicate immediately that there is some fault in the decision preparation if a decision on an issue could not have been made. The second KPI requires the calculation of all decisions which were not postponed or rejected, but which had to be taken to another decision board, meaning they were not addressed to the relevant entity in the first place. Especially when using a formal process this sort of issues should and could be avoided by aligning beforehand. When taking irrelevant issues to the DCC management round they consume time from other programme relevant topics that could be pushed forward. It is also more efficient to identify this sort of overarching issues at once so that the decision can be reached faster.

The last KPI recommended is the direct feedback channel, which would give the management an idea of how their decisions are perceived by the programme and especially by the ones asking for them. One of the interviewees suggested a simple

"star-rating" system where each decision communicated for example in the Decision Memo, would be evaluated from a scale of 1-5, 1 being the worst and 5 being the best. If a certain decision gets an average value of 1-2 it is clearly perceived as questionable by the programme members. It indicates that perhaps some re-evaluation might be in place to understand reasons behind.

By implementing and communicating these five recommendations the DCC programme can enhance decision-making by making it more transparent and clear for all parties involved in it.

5.2   Further Research

The outcomes of this thesis have yielded some interesting possibilities for further research, but the research itself has some weaknesses. The drawbacks of this study are its applicability to a single case only and that the analysis is based on the researcher's subjective interpretation of the data (Jonker, 2010: 94). Therefore, the results as such cannot be applied to a broader concept, they merely add to theory or provide one practical point of view.

Nevertheless, the study could be taken further to produce more generalizable results. As Jonker (2011: 96) asserts, the qualitative research could be a subject of further quantitative research. Both would compliment each other instead of contradicting. The methodology used to conduct this case study has been described comprehensively allowing it to be adopted for another research. If the results of two or more similar studies on company change programmes yielded similar results, quantitative variables could be defined for an extensive research. The results of such research could add or develop existing theory or define a method for companies to assess their decision-making holistically. The management team of a company could have an idea how well decision-making is perceived to work in their company and how much people in different levels have faith in the choices made by management, how much they trust the decisions coming from them. This has further implications on a company's flexibility, agility and to the general ability to adapt to changes, as described in the introduction. Especially in innovative industries and in today's fast paced business

world it can be a difference of success or failure. The results of such analysis could identify crucial problem points to harmonize the quality of the process, identify key weaknesses and improvement points for the organisation to strive for better agility and responsiveness to change.

References

Adler, P. 2011. Building a Collaborative Enterprise. Harvard Business Review, July, p. 3-9.

Bryman, A. and Bell, E. (2003). Business Research Methods. Oxford: Oxford University Press.

Crainer, S. 1999. The 75 Greatest Management Decisions Ever Made: ...and 21 of the Worst. 1 Ed Edition. AMACOM.

Drucker, P. 2002. The Effective Executive. 1st Edition. Collins.

The Economist Intelligence Unit. 2012. The Deciding Factor: Big Data and Decision Making. Capgemini - Point of View, June 4 2012, [ONLINE] Available at: http://www.capgemini.com/resource-file-access/resource/pdf/The_Deciding_Factor__Big_Data___Decision_Making.pdf [Accessed 13 March 2014].

Eiselt, H. 2012. Operations Research: A Model-Based Approach (Springer Texts in Business and Economics). 2nd ed. 2013 Edition. Springer.

Ferguson, C. 2011. Prince2 for small-scale projects. Best Management Practice, September, p. 3-9.

Finkelstein, S. 2009. Think Again: Why Good Leaders Make Bad Decisions and How to Keep it From Happening to You. 1 Edition. Harvard Business Review Press.

Galbraith, J. (2002). Designing Organizations. San Francisco CA: Jossey-Bass, John Wiley and Sons.

Golafshani, H. 2003. Understanding Reliability and Validity in Qualitative Research. The Qualitative Report, Volume 8 Number 4 December 2003, p. 597-607.

Greener, S. 2008. Business Research Methods. 1st ed. London: Ventus Publishing ApS.

Grünig, R. and Kühn, R. 2009. Successful Decision-making: A Systematic Approach to Complex Problems. 2nd ed. Edition. Springer.

Gänswein, W. 2011. Effectiveness of Information Use for Strategic Decision Making (Entrepreneurship). 2011 Edition. Gabler Verlag.

Horine, G. 2012. Project Management Absolute Beginner's Guide. 3rd ed. Indianapolis: Que Publishing.

Howard, R. 1988. Decision Analysis: Practice and Promise. Management Science, Vol. 34, No. 6, p. 679-695.

Jonker, J. 2010. The Essence of Research Methodology: A Concise Guide for Master and PhD Students in Management Science. 2009 Edition. Springer.

Karlsson, J. 2012. Decision-Making In a Multinational Manufacturing Organization. Master's thesis. Helsinki: Aalto University School of Business.

Kerzner, H. 2013. Project Management: A Systems Approach to Planning, Scheduling, and Controlling. 11th ed. New Jersey: John Wiley and Sons Inc..

Leppäsyrjä, E. 2011. *Decision-Making Processes in International Maritime Organisations*. Degree Programme in Maritime Studies. Satakunta: Satakunta University of Applied Sciences.

Locke, K. 2001. Grounded Theory in Management Research (SAGE series in Management Research). 1 Edition. SAGE Publications Ltd.

Malhotra, N. 2005. Marketing Research: An Applied Approach - European. 2 Edition. Financial Times Management.

Papamichail, K. Rajaram, V, 2007. A Framework for Assessing Best Practice in Decision Making. Bachelor. Manchester: The University of Manchester.

Project Management Institute. 2013. A Guide to the Project Management Body of Knowledge: PMBOK® Guide. 5 Edition. Project Management Institute.

Raynard, R. 1997. Decision Making: Cognitive Models and Explanations (Frontiers of Cognitive Science). 0 Edition. Routledge.

Rogers, P.; Blenko, M. 2006. Who has the D? How Clear Decision Roles Enhance Organizational Performance. Harvard Business Review, [Online]. January/2006, p. 52-61. Available at: http://www.asec-sldi.org/dotAsset/292785.pdf [Accessed 13 March 2014].

Rosenzweig, P. 2014. The benefits - and limits - of decision models. McKinsey Quarterly, February/2014, 1-10.

Saaty, T. 2008. Decision making with the analytic hierarchy process. International Journal of Services Sciences, vol. 1, no. 1, 83-98.

Saaty, T. 2012. Models, Methods, Concepts and Applications of the Analytic Hierarchy Process (International Series in Operations Research and Management Science). 2nd ed. 2012 Edition. Springer.

Selck, T. 2004. The Impact of Procedure: Analyzing European Union Legislative Decision-Making. 1st ed. Göttingen: Cuvillier Verlag.

Seitovirta, L. 2011. The Role of Strategic Intelligence Services in Corporate Decision Making. Master's thesis. Helsinki: Aalto University School of Economics.

Smith, J. 1982. Evolution and the Theory of Games . 1st ed. Cambridge, United Kingdom: Cambridge University Press.

Subhendu, D. 2006. Introductory Economics (Micro and Macro): A Textbook for Class XII. Edition. New Age International Pvt Ltd Publishers.

Van Nes, F.; Abma, T.; Jonsson H.; Deeg, D. 2010, Language differences in qualitative research: is meaning lost in translation? Springer: European Journal of Ageing Nov 19, 2010 [ONLINE] Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2995873/. [Accessed 24 March 2014].

Company Internal References

Allianz SE. 2014. Allianz Managed Operations and Services. [ONLINE] Available at: https://www.allianz.com/en/products_solutions/global_lines/amos/amos.html. [Accessed 17 February 2014].

Allianz Managed Operations and Services - Company Presentation, July 2013.

Allianz Managed Operations and Services - Validation Results Presentation, October 2012.

Appendix 1. Semi-structured Interview Topics and Guiding Questions

Questions asked from all are marked with a star (*).

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Thesis Interview

The aim of this interview is to understand the views of the DCC employees on decision-making processes in general and in their work in DCC. This interview consists of open questions, which all aim to stimulate in-depth discussion about the topics. The interview will take approximately 30-45 minutes and the interviewees will be kept anonymous in the thesis. Upon request, all quotes from the interviewee, which are used in the text, can be sent for approval before publishing it in the research.

By consent of the interviewee, the discussion will be recorded for the interviewer's personal use only and the recordings shall not be published or used for any other purpose than this research.

3 topic areas:

- Current Decision-making process in DCC
- Best Practice in Decision-making
- Challenges in DCC

Questions

*Introductory questions:

- Job description & responsibilities in DCC
- Professional background
- Past experience, if relevant
    o Other projects
    o Other companies
    o Other cultures (company or country)

- How would you describe your current role with regards to decision-making? For example:
    o Decision-maker
    o Receiver
    o Input provider
    o Other

Current Decision-making process in DCC

*Describe the decision-making process in DCC from the beginning to the end

- Is there a critical path?
- What is the "moment of truth"?
- How long does the process take from discovering the problem to taking a decision?

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Which events trigger the decision-making process?

- How are decision problems identified, e.g. ad hoc or from systematic follow-up actions?

How are decisions in DCC prepared?

- What kind of data/information is used?

Are they mostly based on facts, intuition, combination or other?

- How well structured?
- Quality of the process?
- What is the quality of the results (=decisions)?
- How reliable is the process, its outcomes?

*What happens after a decision has been taken?

Describe a typical decision-making situation that you have taken part of.

Best Practice in Decision-making

*Should there be a formal process defined for Decision-making?

- If yes, why?

- If no, why?

How should the process look like from the beginning to the end?

Do you personally have a process or a preference for making decisions?

How do you decide if the decision is worthwhile to be put through a formal process?

- Is there a certain threshold such as financial value, impact on customer, impact on other Streams?
-

*Can you think of metrics to measure the efficiency of the process?

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10 March 2014

- E.g.
    o Number of decisions taken in a month
    o End-to-end time from discovery to implementation
    o Costs & Savings

*Does the following 7 step process seem logical and practical to you?

A General Heuristic Decision Making Procedure as adopted from Grünig (2009):

1. Discovering the Decision Problem

    a. Planning the treatment of the Decision Problem

2. Analysing the Decision Problem

    a. Planning further treatment of the decision problem

3. Developing at least two options

4. Defining the decision criteria

5. If necessary; Drawing up possible scenarios

6. Determining the consequences of the options

7. Establishing the overall consequences of the options and making the final decision

*What is a good decision?

Challenges in DCC
*

What is the biggest challenge in DCC regarding Decision-making?

Has your past experience been of help?

*Would you improve something in the process?

- If yes, what?
- If no, why not?

Are you lacking something specific in the process? For example one of the following:

- Information

Aliisa Tiainen EBA10

BBA

10 March 2014

- Discussion
- Documentation
- Implementation/Execution
- Communication
- Expertise knowledge

Thank you for your participation!

Appendix 2. Definitions of a good decision

The underlined words were used to identify common nominators and shared themes from the responses.

What is a good decision?

"Decisions, which create action"

"A good decision always solves problems and allows the team to move on providing some guidance."

"A quick one, an easy one and one that has an impact."

"A decision, which does not get revoked."

"A decision is good when you invest some brain into it, use for example the presented best practice model."

"One that reaches the right outcome."

"A good decision is one, which is not reflected towards making people happy, but ensuring that the final goal is achieved within the framework."

"If it solves the problem efficiently and effectively in relation to the target."

"Fulfils the customer's requirements within the programmes area."

"One that's made, is very clear, has no ambiguity and has a measurable outcome."

"A good decision is taken at the maximum of the elements you have."

Appendix 3. Suggested Key Performance Indicators

Suggested Key Performance Indicators

1. Number of postponed decisions

2. Amount of action and follow-up activities

3. Project success (achieved goals)

4. Average rate of decisions

5. Measuring impact, e.g. Financial, adjusting planning, goals

6. Measure the satisfaction of the decision requester (star-rating, bottom-up feedback)

7. Does the solution cover resources, budget and feasibility?

8. When the timeline has passed, compare your state to the initial target

9. Measure the End-to-end decision-making time

10. Repeat incidents - does a decision drive the outcome or more decisions

11. Number of escalations

12. Number of change requests

Appendix 4. Characteristics of Decisions

Characteristics of decisions summarized from the interviews in the following figure.