# The business processes of ING

*The integration of budget allocation, resource planning and registration of working hours in Clarity 8*

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"*Information systems are only successful if they are used*" (Robertson, 2005, p. 3)

## Preface

In order to graduate for my Master degree Business Administration and therefore conclude my life as a student, I had to do research about a subject that was more or less related to my main subject Financial Management. I have applied for a vacancy at ING Amsterdam, at first sight related to my main subject because of the fact that ING is a financial institution. However the vacancy was at the business unit Operations & IT Banking, the IT division of ING. After a successful application at ING and consulting my supervisor Ir. H. Kroon, I have received permission to make a start with the research.

In September 2009 I started at ING Amsterdam with my research. At that moment the exact subject of my thesis was not quite known due to the fact that the vacancy consisted out of several subjects. After consulting my supervisor of ING, Mr. R. Kelders, we decided to choose for the subject of the three processes budget allocation, resource planning and registration of working hours. And because these three processes will be integrated into Clarity 8, a new and mandated program that will go live in January 2010, I incorporated this subject in this research as well.

In my opinion, things went fast right from the start of this research. Soon I composed a research plan, including a developed theoretical framework that was the basis of my research. Perhaps even more important than a solid basis for this research was the fact that I felt welcome at the division Structured Finance. Everyone was kind enough to reserve an hour for a formal interview. But also during a coffee-break I could walk into someone's office to make a chat about my research. It really contributed to the quality of my research because in this way I obtained new insights. Presenting these new insights to my two supervisors that took up a position as sparring-partner, I was challenged to go beyond the obvious way. Especially when I thought I found the solution for the problems of the three processes, Ir. H. Kroon took up many times the position of devil's advocate. So many thanks to my supervisors and employees of Structured Finance who have provided me for the necessary advice and support to complete this thesis.

Also I would like to take the opportunity to express my gratitude to Edip Can and Farha Mutlu for acting as a sounding board and advising me on various matters. Last but not least, many thanks to my wife Barbara, who supported me greatly during these last four months.

Stefan Bulut

## Management summary

This Master thesis consists out of two subjects that are elaborated through this research. The first subject concerns the three processes budget allocation, resource planning and registration of working hours. With reference to project management, an element of ING's ERP system, these three processes play an important role: budget allocation is important for knowing whether a project can be executed (are there enough funds), resource planning is important for composing a team that executes the project and registration of working hours is important for keeping the budget within tolerances and adjusting resource planning if necessary. A change in one of the three processes means it will have its impact on the other two processes. These three processes operate separately in the current situation, but from January 2010 they will be integrated into Clarity 8. The implementation of this new and mandated program has already started. Therefore this second subject is incorporated within this research. Possible bottlenecks need to be found in order to optimize the three processes so that they can be integrated successfully in Clarity 8. The following main research question will be answered through the answering of several sub questions:

*Investigate and analyze the three processes of project management in order to solve the bottlenecks so that they can operate as one integrated process in Clarity 8, matching employees' preferences?*

In chapter 1 the research plan is developed where background information about ING, the problem description, the objectives, the research questions and the plan of approach are described. In the second chapter a theoretical framework is developed. The three processes are described from top management's perspective using several internal documents. Furthermore, technology acceptance models of Venkatesh & Davis (2000), Nah et al. (2004) and Venkatesh (2000) are used to develop a constructed framework that serves for testing whether or not the new and mandated program is symbolically adopted by its end-users. Guidelines of top management are used to describe in chapter 3 how the three processes should be put into action when a project is executed. The importance of Clarity 8 is described and what this implementation means for employees and management. In chapter 4 ING's employees are specified into four groups, namely team members, project managers, line managers and the Business in order to find out through half standardized interviews how these three processes and the implementation of Clarity 8 are put into practice. In chapter 5 bottlenecks with reference to the three processes and the implementation of Clarity 8 are derived from the half standardized interviews. In chapter 6 the preferences of the various groups are described that are needed to come up with solutions for the bottlenecks. But first the bottlenecks are analyzed in chapter 7 in order to find a pattern in the bottlenecks of the three processes. By breaking this pattern, the majority of the bottlenecks can be solved. The constructed framework is discussed in order to analyze whether the end-users symbolically adopt Clarity 8. In chapter 8 solutions are described with reference to the pattern found in chapter 7. Solutions for the remaining bottlenecks of the three processes and the implementation of Clarity 8 are also mentioned in chapter 8.

In chapter 9 recommendations and a final conclusion are given. When the bottlenecks derived from the interviews with the various groups of employees were described and analyzed, a conclusion was that due to the indistinctness about the requirements and the budget a lot of bottlenecks arose in project management. A main point was to solve the issue of unclear requirements and budget. It was important to take potential risks into consideration and rule them out in order to have a solution based on strong arguments. The solution is to organize the process of project management with reference to the assignment of two new roles, namely a requirement engineer and a cost estimator. The motivation of this new set-up of project management is to relieve the project manager from the pressure of the Business. The two new roles will take over some of the responsibilities of the project manager, namely the formulation of qualitatively well requirements and the cost estimation. The approval of qualitatively well requirements and the budget will result in less Exception Reports. A potential risk lies in the approval of the cost estimation. To ensure the approval of the cost

estimation, it is important to have a balance from top-down and bottom-up in composing a Change MTP. This preference is mentioned by line managers and the Business because they experience in the current situation that this is not the case. By ensuring the approval of the budget and the requirements, money can be saved on overhead and major losses can be prevented.

Although there are some issues in the implementation of Clarity 8, the end-users will accept this new mandated program because one of their preferences was to eliminate other programs. This will be achieved due to the integration of the three processes budget allocation, resource planning and registration of working hours. To ensure the elimination of other programs, the use of standardized reports is necessary. It is advisable that top management should give the right example by also using this standardized tool without accepting reports in other templates. The risk lies in the fact that line managers and project managers revert to the old tools. To overcome hurdles after Clarity 8 goes live, the end-users prefer improvement of top management's communication. A clear end vision of top management, the impact of this change on end-users' jobs and the participation degree of end-users are key elements to take into consideration to prevent resistance. A survey among the end-users after Clarity 8 goes live can contribute to overcome hurdles. Last but not least, effective training, clear manuals and support teams are mentioned preferences of end-users to get acquainted with Clarity 8 and overcome hurdles.

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# 1. Research Plan

This research plan is composed as a starting point for the master thesis that will be fulfilled at ING in Amsterdam. This chapter starts with a short introduction about the ING Group and the division Operations & IT Banking. Furthermore the practical problem description, the objectives, the research questions and the plan of approach will be discussed.

## 1.1 Background information about the ING Group

The ING Group is a result of several mergers and acquisitions over the past century (Website 1 about ING, 09-2009). The foundation of ING Group started with several establishments; 'Rijkspostspaarbank' in 1881, 'Postcheque- en Girodienst' in 1918, and 'Nederlandse Middenstandsbank' in 1927. In 1986 a merger took place between 'Rijkspostspaarbank' and 'Postcheque- en Girodienst', which resulted in the denationalized 'Postbank'. Three years later the merger between 'Postbank' and 'Nederlandse Middenstandsbank' took place which resulted in 'NMB Postbank Groep'. In 1991 a merger took place between 'NMB Postbank Groep' and 'Nationale Nederlanden' which resulted in ING Group. The ING Group operates in more than 50 countries. Finally, in 2009 a merger between Postbank and ING resulted in the 'new' ING.

### 1.1.1 Facts & numbers:

ING is a worldwide bank & insurance company with more than 120,000 FTE's (full time equivalent) active in more than 50 countries, and generates an income over €66,000 million. Over the financial year 2008, ING had a net result of €-729 million. ING is today (21-01-2010) organized around six business lines that all report to the Executive Board (top management). These six business lines are: Retail Banking, Wholesale Banking, ING Direct, Insurance Asia/Pacific, Insurance Europe and Insurance Americas. Today, ING is the 23rd biggest financial institution in Europe with a market value of almost €15 billion (Website 2 about ING, 09-2009).

### 1.1.2 Mission & strategy:

ING operates through a mission where the customer stands in the centre; "*To set the standard in helping our customers manage their financial future*" (Website 3 about ING, 09-2009). ING has a clear vision for what lies at the heart of its business: collecting customer balances and redeploying these in the economy. ING will go back to the basics of finance because of the increased complexity of the financial services industry. Several points are important for the new strategy of ING, namely:

- reducing complexity by separating Bank and Insurance;
- creating a predominantly European bank with one integrated balance sheet;
- further narrowing focus of Insurance to Life and Retirement services;
- fundamental shift in risk profile of US Insurance business; and
- forming one Global Investment Manager including Real Estate Investment Management.

Going forward, ING will take steps to strengthen their financial position and adjust to the reality of the global recession while keeping focus on their long-term priorities. In the short to medium term, ING will step up efforts to steer the business through these turbulent times, to stabilize their company and reinforce their credibility. ING's efforts will be focused on disciplined execution of these plans in 2009, specifically by:

- putting customers first;
- preserving a strong capital position, including divestments that free up capital;
- further mitigating risks; and
- bringing costs in line with the operating environment.

Besides short and medium term priorities, ING also keeps its focus on long-term priorities. ING will maximize business opportunities while maintaining the financial health and growth perspectives of their company. While drawing lessons from the worldwide recession and the debate on the function

of financial institutions in society, ING reviews the portfolio of the company in terms of markets, distribution models as well as product offering, in order to ensure their long-term competitiveness. The focus is on fewer, coherent and strong businesses. Also, ING will simplify the organization, improve the fundamentals of its business and invest in improving commercial processes. Moreover, further strengthening of its brand around a universal ideal of delivering an easier customer experience remains a main objective, as awareness and appreciation of the ING brand is important in building trust, a key driver for long-term business growth.

## 1.2 Background information about Operations & IT Banking (OIB)

OIB supports all commercial activities for Domestic and Wholesale Banking within ING and provides the necessary IT systems and infrastructure. ING has over 16,000 Operations & IT Banking professionals working, of whom 13,000 are active in the Netherlands and Belgium.

### Organization Chart OIB

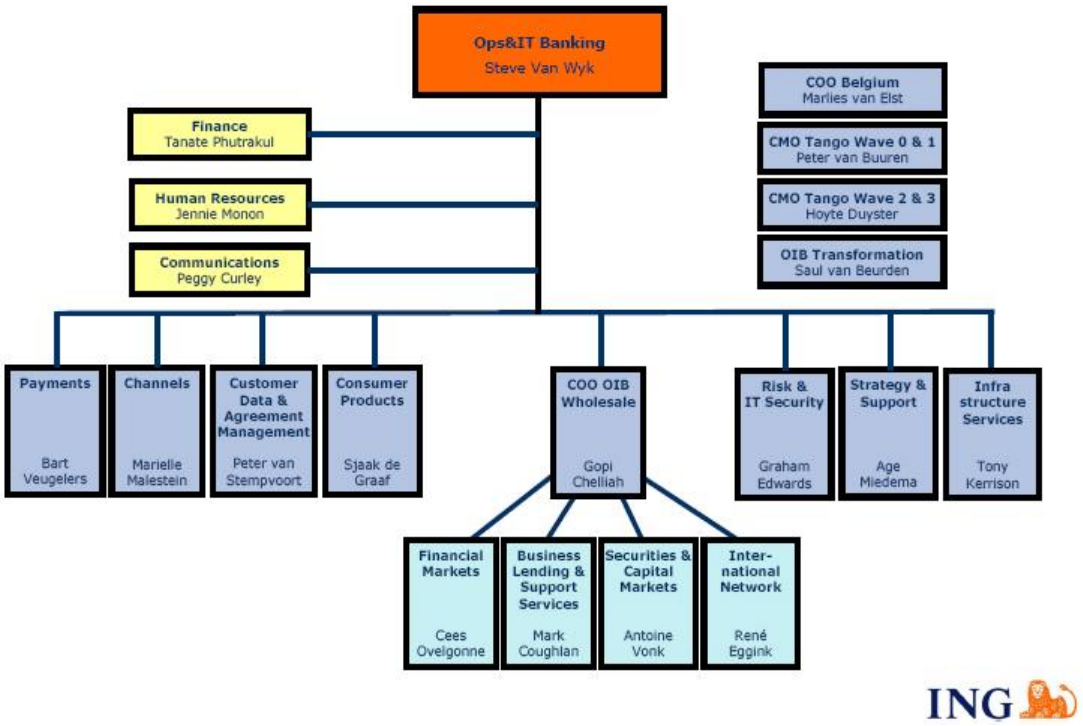


Figure 1: Organization chart OIB. Source:
http://oib.m2s.intranet/Default2/Documents/Organizational%20chart%20OIB%20Def.pdf.

The supply of services of each division to other ING divisions is divided into three main categories (Website 4 about ING, 09-2009):

1. Technology: OIB is responsible for the infrastructure, work station services, IT architecture, Risk & Security and Vendor Management (the basis).
2. Service Delivery: OIB ensures that all its client details and transactions are seamlessly processed correctly, quickly and efficiently. In addition, its focus is on maintaining the systems and on resolving incidents and problems. Its priority also includes Business Continuity Management and Disaster Recovery (ensuring that the bank works).
3. Solution Delivery: OIB realizes projects in order to ensure that ING is ready and well positioned for the future. It continuously develops new products and applications. It improves existing systems and focus on process automation.

## 1.3 Business Lending & Support Services

One of the subunits of the business unit OIB is Business Lending & Support Services, the subunit where this research will be fulfilled. This subunit is responsible for the maintenance and support of a variety of applications for the overall Wholesale Business and also for the end-to-end cost effective project delivery for the value chains.

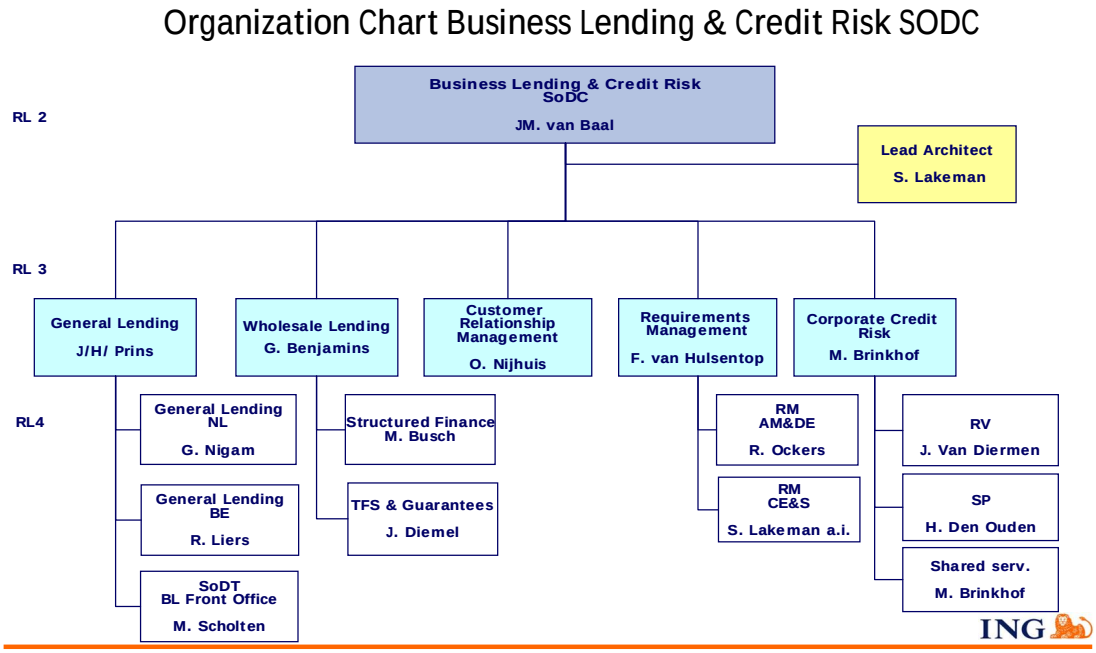


Figure 2: Organization chart SODC Business Lending. Source: http://www.oib.intranet/SiteCollectionDocuments/OrgChart_BLSS_Def.ppt#407,9.

## 1.4 Practical problem description

The aim of this thesis is to investigate the three processes budget allocation, resource planning and registration of working hours which will be integrated in Clarity 8. This is a new and mandated program that will be the substitute of the current program called 'Project Informatie Tijdverantwoording' (next: PIT) used for the registration of working hours and the programs Microsoft Projects/Excel and e-profit used for the budget allocation and resource planning. The three processes are very important for project management, an element of the Enterprise Resource Planning System (next: ERP) of Operations & IT Banking (OIB), but guidelines of top management differ from the current situation. More specific, the processes of budget allocation, resource planning and the registration of the working hours need to be investigated in order to give top management a better insight into the bottlenecks of the three processes of project management. Clarity 8 is a tool that is intended to make project management more efficient. In order to implement the new program successfully, it is necessary to find possible bottlenecks and give advice for improvements in order to take full advantage of the benefits of Clarity 8. The main objective of this thesis is to offer an answer to the following main research question:

*Investigate and analyze the three processes of project management in order to solve bottlenecks so that they can be integrated as one process in Clarity 8, matching employees' preferences?*

A theoretical framework will be composed that will serve as a guidance through this research. The three processes budget allocation, resource planning and registration of working hours will be described from top management's perspective in order to have a reference for interviewing employees of OIB for analyzing how these three processes are put into practice. This will lead to

bottlenecks that need to be solved, taking employees' preferences into consideration. The intention is to solve the bottlenecks of the three processes so that they can operate as one integrated process in Clarity 8 by emphasizing their interrelationship. In this research the implementation of Clarity 8 is also investigated in order to find out whether it will be accepted by its end-users.

## 1.5 Objectives

The following points are the key objectives of this thesis:

- describe the interrelationship of these three processes with reference to project management from top management's perspective;
- describe the new program Clarity 8 where the three processes will be integrated in;
- define in the current situation the interaction of these three processes with reference to project management from employees' perspective;
- give the preferences of the various groups of employees with reference to the three processes and the implementation of Clarity 8;
- make an analysis of the current bottlenecks of the selected processes and the implementation of Clarity 8; and
- give recommendations to solve those bottlenecks.

## 1.6 Research questions

To come up with a proper and solid answer to the main research question, the following sub questions are formulated:

1. How do the three processes operate in project management and Clarity 8 according to guidelines of top management?
2. How do the employees of ING experience these three processes and the implementation of Clarity 8 in the current situation?
3. What are the bottlenecks of these processes and the implementation of Clarity 8?
4. Which preferences are important for the three processes and the implementation of Clarity 8 according to employees?
5. How can the bottlenecks of the three processes and the implementation of Clarity 8 be solved in order to make project management more efficient?
6. What are the recommendations for the three processes and the implementation of Clarity 8?

## 1.7 Plan of approach

This thesis limits the research purpose on the previous mentioned processes and the implementation of Clarity 8. To get appropriate answers for the main research question and the sub questions, literature study will be performed due to use of three databases; Scopus, Google Scholar (SFX) and Web of Science. Literature from the database of ING will be used getting prior knowledge about the subject. Literature study is necessary for developing a theoretical framework that serves as guidance through this research. Besides literature study, a major part of the information will be derived from interviews with ING's employees held. An interview round is held with Project Management Officers to get a broader view about the new program Clarity 8. A second interview round is held with the four main groups of employees that are involved in project management and will be the end-users of Clarity 8, namely; team members, project managers, line managers and the Business. Interviews have several advantages over questionnaires, like a higher response rate, decreasing number of "don't knows" and "no answers", and an interviewer can guard against confusing questionnaire items (Babbie, 2004). There are some issues that have to be taken into considerations when having interviews with volunteers. According to Gramsbergen-Hoogland & Van der Molen (2005), nonverbal aspects are as important as verbal aspects. A first aspect of nonverbal communication is the facial expression, which shows whether the interviewer is truly interested in the respondent. A second aspect is the eye contact, because it is very important to find a balance within the extremes of being strictly fixated and completely avoiding eye contact. A third aspect is the relaxed posture in order to

make the respondent also relaxed. This will result in honest answers from the respondent which is beneficial for the research. The final aspect is the encouraging gesture, for example nodding, in order to give the respondent a trustworthy feeling.

According to Gramsbergen-Hoogland & Van der Molen (2005), there are three types of interviews, namely; open interviews, half standardized interviews and standardized interviews. For this research, the half standardized interview has been chosen. The reason for this choice is that on the one hand it is important that respondents feel free in telling their experiences with reference to the processes budget allocation, resource planning and registration of working hours. And on the other hand, it is important that the respondents feel free in telling their experiences with reference to the implementation of Clarity 8. By giving the respondents the opportunity of telling their experiences, possible bottlenecks can be found. During interviews some adjustments can be made when necessary. By analyzing these bottlenecks, recommendations will be formulated in order to solve these bottlenecks. Besides formal interviews, also informal interviews are held to get an insight about the possible solutions for the bottlenecks found. Because of the promised anonymity of the respondents of the formal and informal interviews, no details of the respondents are given.

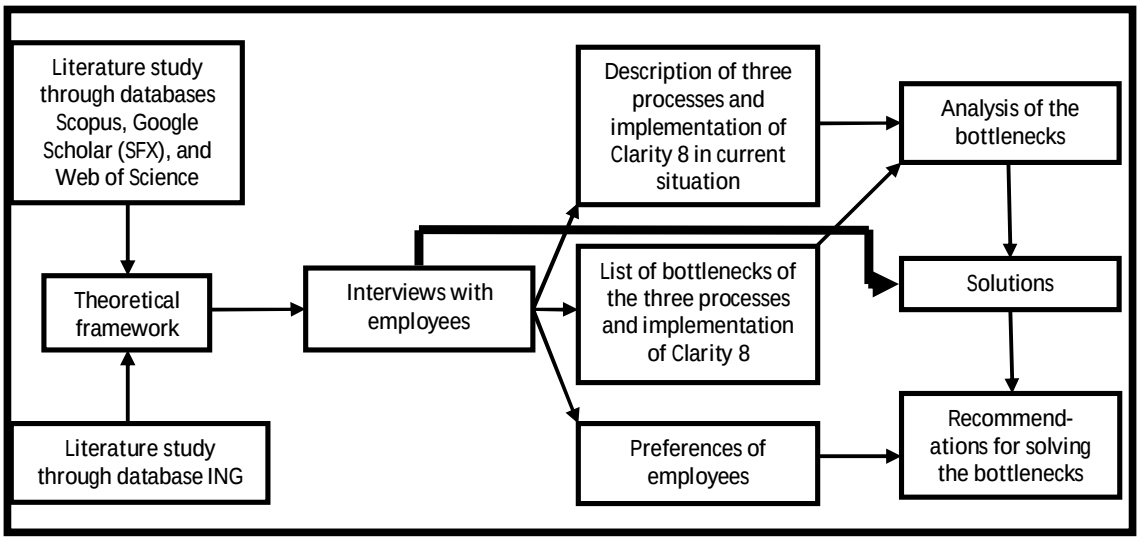


Figure 3: Research model for master thesis.

Figure 3 shows the approach how to answer the main question and sub question in this research. When the theoretical framework has been developed through literature study, it will serve as a basis for the interviews with the various groups of employees. The current situation, bottlenecks and the preferences with reference to the three processes and the implementation of Clarity 8 will be described. When the current situation and the bottlenecks are investigated, an analysis will be done to find a pattern in the bottlenecks. Solutions will be introduced taking preferences of employees into consideration which will lead to recommendations.

# 2. Theoretical framework

Based on the sub questions formulated in the previous chapter, a theoretical framework is developed through literature study from the databases Scopus, Google Scholar (SFX), Web of Science and the database of ING. This developed theoretical framework serves as guidance to complete the answering of these sub questions and finally the main research question. Extensive literature study has led to the following theories that are important for this research. The three processes budget allocation, resource planning and registration of working hours are investigated by using the database of ING because guidelines of top management need to be compared with how these processes are put into practice by the employees of OIB. By investigating on the one hand how these three processes are spread out by top management and on the other hand how employees put these three processes into practice, bottlenecks can be found that cause problems in project management. Analyses can lead to solutions in order to execute project management without running each time into the same problems. Theory about ERP systems is incorporated in this theoretical framework because project management is an element of ING's ERP system. The theory about the implementation of ICT is incorporated in this theoretical framework because the new mandated program Clarity 8 will be implemented as a substitute for other programs. Theory about the resistance to change is important in order to investigate whether this is an issue for the end-users of Clarity 8. By incorporating various models of technology acceptance in this theoretical framework a constructed framework is described which will be tested in order to do well-founded statements about the acceptance of Clarity 8 by its end-users. Of course, bottlenecks are taking into consideration that need to be solved.

## 2.1 Budget allocation

The process of budget allocation is the starting point of executing a project. Without a budget a project cannot be executed. To set up a Change MTP ("Middel Lange Termijn Planning"), a budget planning for change projects for the following year, it is necessary to follow the process shown in appendix 1. In the following sections, the subjects reserved budget, operational budget, actual and forecasts, and cost estimation of a project are described, derived from internal documents of ING. The description about budget allocation is necessary in order to acquire prior knowledge for this research.

### 2.1.1 Reserved budget:

A Change MTP will be composed at the Executive Board of ING. The Executive Board will make a reservation of funds based on new initiatives for the following year and sets strategic targets and budgetary guidelines which will be reviewed by the Project Review Board. This board sets the budget constraints and issues an instruction letter composed by the Enterprise Project Management Office. The Financial Region department allocates budget to various regions. For example: a budget allocated to OIB in the Netherlands and OIB in Belgium. These funds will be allocated to Supply OIB and non OIB. This budget will be matched with the funding from Demand Value Chain (client). This Demand Value Chain has also set the strategic objectives for next year. The Demand Value Chain lists the projects for next year based on what kinds of projects it expects and on figures of previous years (Internal Document 1, 12-07-2007).

### 2.1.2 Operational budget:

Now budget has been reserved by the Executive Board for the various business units. When a portfolio manager of the Business has a project to source out, managers of both parties (demand and supply) make their program of demands and wishes known. The supply budget will be requested and compared to the reserved budget. This requested supply budget must be within the tolerances of the reserved budget in order to get approval (Internal Document 2, 09-2007). Every time a stage within the project has been finished, a part of the supply budget will be released in order to control the requested budget.

### 2.1.3 Actuals and forecasts:

Reports are composed in order to inform the Executive Board about the progress made during each project and also when each project has been finished. The Executive Board stays responsible for the financial results. That is why actual budget (called Actuals by ING) is compared with forecasted budget to keep the reserved budget within tolerances. The line managers, the Project Board and the project managers play an important role in informing top management. For instance: when an adjustment is made in resource planning and this will affect the supply budget, a report is composed in order to forecast profit of the project. Then the Executive Board can decide whether to continue the project. But reports are also composed to find out if projects match the Executive Board's strategic targets.

### 2.1.4 Estimating costs of a project:

The project manager fills in a Project Brief in order to give an estimation of the costs of the project. For estimating, it is critical to reference historical data from prior projects with similar characteristics. To assist with performing or validating an estimate, this historical data can be retrieved from the organization's project asset library (Internal Document 3 from Advanced Management System: Estimating Costs, 09-2009). In a later stage, the Project Brief will be extended into a Project Initiation Document (next: PID). When the project manager expects to exceed the budget, he must request more funds by filling in an Exception Report. The Project Board will decide whether to settle with the request.

## 2.2 Resource planning

"*The resource planning is nothing more than an overview of the activities of all BL & SS employees four months in advance. The resource planning is a useful tool which allows management to gain an exact insight in the available resource capacity for the coming months. It is also helpful to determine the impact of new projects on the current resources* (PowerPoint Presentation Resource Management Business Lending)".

Although this definition of resource planning suggests that this process is nothing more than an overview of the activities of the resources, it is an important process for project managers and line managers in order to plan the project step by step. An overview of resources allocated to tasks will result in a time planning of the project. So the importance of resource planning should not be neglected. In the following sections the subjects team planning and Resource Allocation Management will be discussed, derived from internal documents of ING. The description about resource planning is necessary in order to acquire prior knowledge for this research.

### 2.2.1 Team planning:

Generally, the internal client becomes the Executive and appoints a project manager. The project manager identifies the various roles and appoints the right persons to those roles. Within an Excel sheet the project manager can keep up an overview of the team members, their tasks and the hours allocated to their tasks (resource planning). The resource manager can also keep up an overview of all his employees (appendix 2). The employees need to fill in their expected working hours for each project on SharePoint four months in advance. By doing so, the resource manager can keep an overview of the resource planning of his department when other projects need to be fulfilled. This makes it easier to schedule employees into different projects because he knows who is available and who is not.

### 2.2.2 Resource Allocation Management:

When resource planning starts in the Start up stage of project management and the project manager cannot find suitable employees for the identified roles within the project, Resource Allocation Management (next: RAM) can put into action. The tool in appendix 3 can be used to determine

whether the available resources match the needed resources. The project manager must define the resources needed (identifying roles) and must find out whether they match the resource allocation sheet. This is a sheet that shows the roles of the employees and if they are available. If there is a match, the project manager must look if the resources are available. The request can be executed when the resources are available. When the resources are not available, the project portfolio can be reprioritized in order to execute the request. RAM can be put into action to find the right employees for the right roles if there is not a match between the identified roles and the available resources or when the resources are not available.

RAM is part of the Technology Office, which search for internal employees that match the identified roles by project managers for a particular project (appendix 4). When internal employees match the identified roles but are not available, RAM can search for external employees for the duration of a project. A project manager that cannot find the right persons for the right roles within a project team, can fill in a Resource request form in order to let RAM search for internal employees. If there is an internal match, the request will be executed. If there is no internal match, RAM proposes to hire externally. When the proposal is disapproved, RAM can search again internally or let the request expire. When it is decided to hire externally, a request goes out to an external supplier. The external supplier takes over the process of finding the right persons for the right roles and compares CV's with the requirements of the particular role. If there is a match, the request will be executed by starting the procedure of HR intake interviews and setting up the contract for the duration of the project.

## 2.3 Registration of working hours

PIT is a legacy system which processes registration of working hours. There is a distinction between a change project and a baseline project. The former is a project which is an order of a client, the latter is a project which is maintenance of an application of a client. On the one hand, employees use PIT only to register their working hours for a specific project (baseline or change), on the other hand project managers and clients check the registered working hours that employees processed in PIT to control the budget allocation and resource planning. This is how the three processes are related to each other.

## 2.4 ERP systems

In January 2010 Clarity 8 will be implemented as substitute for the current program PIT and other manual processes. Clarity 8 will fulfil an important role within project management, which is an element of ING's ERP system. In the following sections, the history of ERP systems, the reason why ERP systems are designed and several definitions of ERP systems are described in order to acquire prior knowledge for this research.

### 2.4.1 History of ERP systems:

In the 1960's, the focus of manufacturing systems was on inventory control. It was possible to stay competitive, although companies kept lots of 'just-in-case' inventory to satisfy customer demand. Back then, there were customized software packages to manage large volumes of inventory in the most efficient way. In the 1970's, the introduction of Material Requirements Planning (next: MRP) systems took place because companies could not afford it anymore to keep large volumes of inventory. This was an enormous step forward in planning inventory. This system made it possible to see which products were in stock, as well as the quantity of each product. It meant that stocks could be kept at a minimum level in order to keep inventory costs as low as possible. This MRP system was a revolutionary tool to systematically and efficiently schedule all stocks. Tools were developed to support the planning of aggregate sales and production levels, the development of a specifically build schedule, forecasting, sales planning and customer-order promising, and high-level resource analysis. These developments made the users to consider their systems as company-wide systems. In the 1980's, companies began to consider all the previous mentioned tools more as integrated business

systems. The increased power and affordability of the available technology coupled the movement of inventory with the financial activities, which resulted in Manufacturing Resources Planning (next: MRP II) systems. In the early 1990's, continuous improvements in IT resulted in the expansion of MRP II, which incorporated all resource planning for the entire enterprise. This meant that areas such as product design, information warehousing, capacity planning, communication systems, human resources, finance, and project management could now operate from one database available for the entire enterprise (Ptak & Schragenheim, 2004).

### 2.4.2 ERP designed for..?

The business environment dramatically changed over the past decades and is still changing. On the one hand, companies face the challenge of increasing competition. On the other hand, companies also face the increasing pressure of stakeholders. These stakeholders are for example; employees, suppliers, customers, labour unions and shareholders. Especially this last group of stakeholders is demanding more and more profits from companies. In order to realize more profits, companies are implementing all kinds of strategies and information systems that should result in lowering total cost in the entire supply chain, shorten throughput times, drastically reduce inventories, expand product choice, provide more reliable delivery dates and better customer service, improve quality, and efficiently coordinate global demand, supply, and production (Umble et al., 2003).

ERP systems are fulfilling a major role in these processes. In order to understand the attractiveness of ERP systems, it is necessary to understand the problem they are designed for to solve: the fragmentation of information in large business organizations. Every big company deals with the same problem: how to manage all the collected data? Hundreds of separate computer systems are collecting and storing different data. This leads to enormous cost in managing this data: storing data, deleting redundant data, updating, and debugging obsolete software code. When certain information has to be found, were can it be found? This problem of fragmentation can be solved with the implementation of an ERP system in order to create one central database (Davenport, 1998).

### 2.4.3 ERP definitions:

Literature review has shown that the concept of ERP is widely known in the theory. For example: according to Axam & Jerome (2003, p. 1) an ERP is "*de facto backbone of business intelligence*". Or according to Nah et al. (2001, p. 285) an ERP is "*a packaged business software system that enables a company to manage the efficient and effective use of resources (materials, human resources, finance, etc.) by providing a total, integrated solution for the organization's information-processing needs*". According to Bingi et al. (1999, p. 8), "*an ERP system can be thought of as a companywide information system that integrates all aspects of a business*". Lastly, according to Barker & Frolick (2003, p. 43), "*ERP systems are information systems that allow an organization to run a synchronized configuration that strategically connects all aspects of a business*".

An ERP system supports a process-oriented view as well as standardizing all business processes across the enterprise. An ERP system is organized in one database, one application, and a unified interface across the entire enterprise. This means that many benefits can be achieved when it is implemented well. For instance; quick reaction to competitive pressures and market opportunities, cost reduction by eliminating redundant data entry and other inefficiencies, strengthen sales and forecasts, enhancing employee productivity and satisfaction, breaking barriers between departments and allows the fluid movement of critical data between functions. Besides benefits, ERP systems also has disadvantages. But these disadvantages are mostly related directly to the implementation of the ERP itself. Implementation is not handled properly when employees are not involved, when there is a lack of training, inconsistent management support, and a lack of clear communication between management and employees (Barker & Frolick, 2003).

## 2.5 Implementation of new technology

Figure 4 shows the model of Van den Hooff (Bouwman et al. 2005, p. 4). The model combines two lines of reasoning. The first line of reasoning is the ICT domain and emphasizes the opportunities that a specific technology offers an organization in order to make data communication more efficient. The second line of reasoning is the organizational domain, which emphasizes the demands of an organization according to technology that handles processing of data communication.

According to Bouwman et al. (2005), it is important to ensure that, on the one hand ICT applications are adopted that match existing structures and processes within the organization, making sure that technological choices fit the existing situation. On the other hand, those possibilities of the applications that do not directly match the current situation are also kept in mind. The technical possibilities may lead to innovation of processes and structures, and provide insight into those effects of the application that may not have been expected or intended.

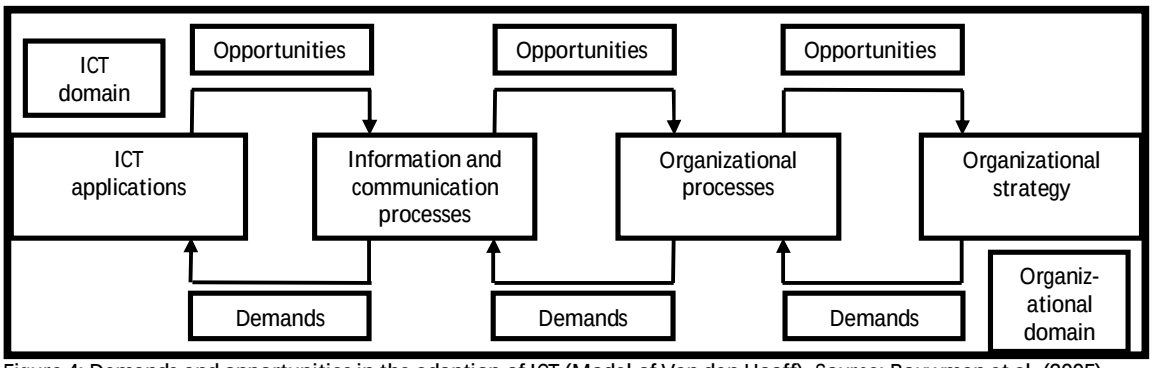


Figure 4: Demands and opportunities in the adoption of ICT (Model of Van den Hooff). Source: Bouwman et al. (2005)

Literature review has shown that there are many critical factors for successful ERP implementation. Umble et al. (2003) mentioned the following critical success factors: clear understanding of strategic goals, commitment by top management, excellent project management, organizational change management, a great implementation team, extensive education and training. Nah et al. (2001) mentioned: ERP teamwork and composition, top management support, business plan and vision, effective communication, project management, project champion, and change management program and culture. Bingi et al. (1999) mentioned: top management commitment, integration, ERP consultants, implementation time, selecting the right employees and employee morale.

This theory about implementation of new technology has been incorporated within the theoretical framework because top management of ING plans to implement Clarity 8. The three processes will be integrated within Clarity 8, which should result in a better overview for management and should make data communication flow better. It must substitute PIT, a program which is intended for registration of working hours. The most commonly known problem with this program is that it is an old and user-unfriendly program that does not integrate resource planning and budget allocation.

## 2.6 Resistance to change

As mentioned before, ING plans to substitute the current program PIT by a newer program called Clarity 8. This theory has been incorporated within the theoretical framework because it is important for top management to acknowledge the possibility of resistance among employees against organizational change (Bouwman et al., 2005). Top management has to consider carefully which implementation strategy is suitable in order to lower the level of this resistance of employees against organizational change. There are three factors that influence resistance to change, namely:

1. Visibility of the end situation: this factor is important because organizational members faced with an uncertain future are likely to resist change. This is why it is important for top

management to provide a clarification of the situation after the change has been made in order to lower the level of resistance with organizational members.

2. Size and impact of the change: this factor is important for top management because generally speaking, changes evoke both enthusiastic reactions and resistance among the organizational members. Changes that have a large impact on organizational culture create resistance among organizational members because they are afraid that the corporate identity disappears.
3. Degree of participation: this factor relates to the degree of participation in the decision and design process. Top management can put responsibility by itself through a top-down approach, or put responsibility as low as possible in the organization through a bottom-up approach.

## 2.7 Acceptance of Technology

A commonly mentioned reason for technology failure is end-users' aversion to adopt or to use the newly implemented technology system (Barker & Frolick, 2003; Krasner, 2000; Scott & Vessey, 2002; Umble & Umble, 2002). Morale problems within the organization are the result of lack of end-users' acceptance. For this reason an understanding of end-users' acceptance of technology systems is fundamental for the success of technology implementation. In the following sections the acceptance models of Venkatesh & Davis (2000), Nah et al. (2004) and Venkatesh (2000) are discussed to acquire prior knowledge about this subject and be able to compose a constructed framework.

### 2.7.1 Technology Acceptance Model:

The original Technology Acceptance Model (next: TAM) from Davis et al. (1989) is well established and tested and a variety of extensions have emerged to further investigation of different constructs and adapt the model to a variety of IT environments (Youngberg et al., 2009). TAM's focus is on the initial acceptance of a new technology by its end-users and it theorizes that system use is directly determined by behavioural intention to use and in turn motivated by the end-user's attitude toward system use (Liao et al., 2009). TAM's key purpose is to provide a basis for tracing the impact of external factors on internal beliefs, attitudes and intentions. Two key variables are central in TAM: perceived usefulness and perceived ease of use. Davis (1989, p.320) gives two clear definitions of these two key variables: the perceived usefulness of an information and communication technology is defined as "*the degree to which a person believes that using a particular system would enhance his or her job performance*" and the perceived ease of use is defined as "*the degree to which a person believes that using a particular system would be free of effort*".

An important finding is that perceived usefulness is often found to be a more important determinant of system use than perceived ease of use and that perceived ease of use is often found to be a determinant of perceived usefulness. The easier a technology is to use, the more useful it can be. An implicit assumption of TAM is that end-users of a particular technology have a choice about the extent to which they use the technology. As a matter of fact, the majority of studies based on TAM have been conducted in environments in which adoption was voluntary, as noted by Brown, Massey, Montoya-Weiss, and Burkman (2002; from Nah et al., 2004, p. 36) and Melone (1990). Voluntary adoption is present when "*the end-user has freedom, without retribution, to decide whether or not to utilize the technology*" (Rawstorne et al., 1998, p. 326). Mandatory adoption is present when "*the end-user is forced by the organization, through reward inducements or threats of punishment or a combination of both, to utilize the technology in a way that replaces at least one previous work practice*" (Rawstorne et al., 1998, p. 326). Thus one must look beyond TAM to examine end-users' acceptance of new technology in the context of mandatory adoption and usage.

### 2.7.2 Determinants of Perceived Usefulness:

The determinants of perceived usefulness have been relatively overlooked while the determinants of perceived ease of use are modelled (Venkatesh & Davis, 1996; from Venkatesh & Davis, 2000, p. 187). Venkatesh & Davis (2000) have done research to extend TAM into TAM 2 in order to include the key determinants of perceived usefulness and to understand how the effects of these key determinants change with increasing end-user's experience in time. Figure 5 shows that TAM 2 used TAM as a starting point in order to incorporate additional theoretical constructs spanning social influence processes (subjective norm, voluntariness and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability and perceived ease of use).

Venkatesh & Davis (2000) have shown that TAM extends into TAM 2 by showing that subjective norm exerts a significant direct effect on usage intentions over and above perceived usefulness and perceived ease of use for mandatory systems. The effects of social influence processes were consistent with TAM 2. Individuals that gain more direct experience with a system over time relied less on social information in forming perceived usefulness and intention but continued to judge a system's usefulness on the basis of potential status benefits resulting from use. The effects of cognitive instrumental processes were also consistent with TAM 2. Judgements about a system's usefulness are affected by an individual's cognitive matching of their job goals with the consequences of system use and that the output quality takes on greater importance in proportion to a system's job relevance.

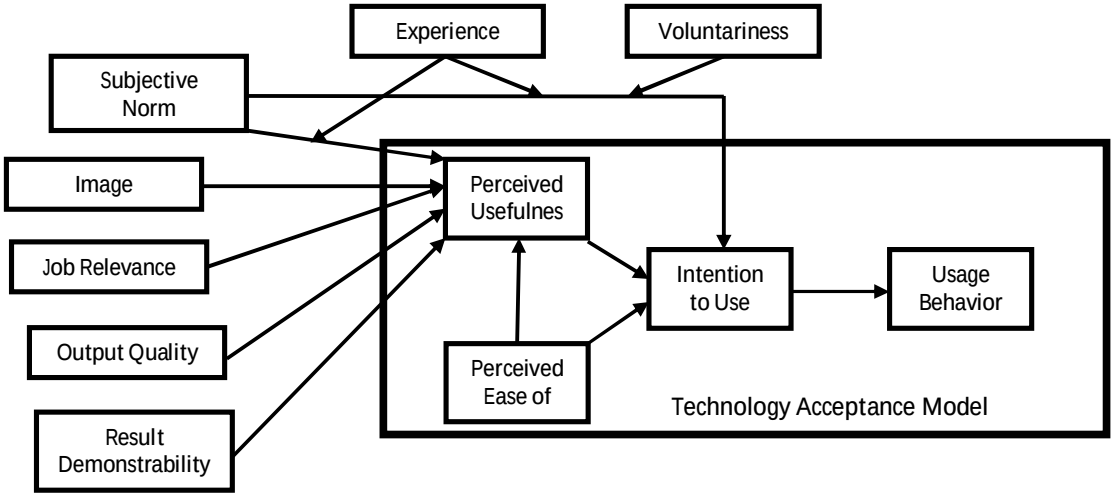


Figure 5: Technology Acceptance Model 2. Source: Venkatesh & Davis (2000).

Rawstorne et al. (1998, p. 326) saw a potential limitation in a pure mandatory adoption setting, namely "*the user intentions construct, which is typically used as a gauge of usage behaviour, is inappropriate because it would be extremely skewed and unusable in model testing*". Therefore Nah et al. (2004) conducted a single-site survey based on the research model (figure 6) that incorporated the original TAM constructs perceived usefulness and perceived ease of use.

In addition to the two key variables of TAM, they added perceived fit and perceived compatibility because "*they are highly relevant and influential in the ERP context*" (Nah et al., 2004, p.42). Nah et al. (2004) found the constructs perceived usefulness and perceived ease of use significant relevant to attitude toward system use. This result agrees with prior empirical TAM studies (Davis, 1989 and Davis et al., 1989). The new constructs perceived fit and perceived compatibility were also significant relevant to attitude toward system use. Symbolic adoption considered as the dependent variable, the three variables perceived ease of use, perceived compatibility and attitude toward system use were found significant.

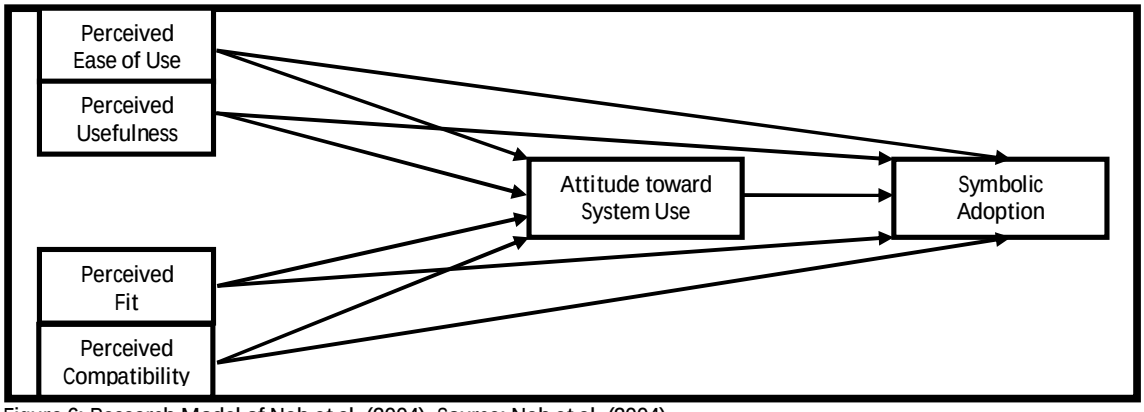


Figure 6: Research Model of Nah et al. (2004). Source: Nah et al. (2004).

Although the key determinants were significantly relevant to attitude towards system use and the results of this study provide some empirical support for the construct of symbolic adoption, the study executed by Nah et al. (2004) has several limitations. First the study was conducted in a non-profit organization, hence the issue of generalization may be of concern. Second the focus of this study was limited, because it does not include characteristics of the end-users and characteristics of the environment. Lastly, due to privacy and confidentiality concerns, the study did not directly measure end-users' usage behaviour. Future research is needed to investigate other factors that contribute to end-users' acceptance of technology.

### 2.7.3 Determinants of Perceived Ease of Use:

TAM posits that perceived usefulness will be influenced by perceived ease of use, meaning the easier a technology is to use, the more useful it can be (Venkatesh, 2000). A theoretical framework is proposed by Venkatesh (2000) that describes the determinants of system-specific perceived ease of use as individuals evolve from the early stages of experience with the target system to stages of significant experience. In the absence of specific knowledge, it is suggested that individuals rely on general information that serves as an "anchor". If additional information becomes available, individuals lean to adjust their judgments based on this new information, but still rely on the anchored information (Venkatesh, 2000). In the study of Venkatesh (2000), these "anchors" and "adjustments" are integrated within TAM (see figure 7).

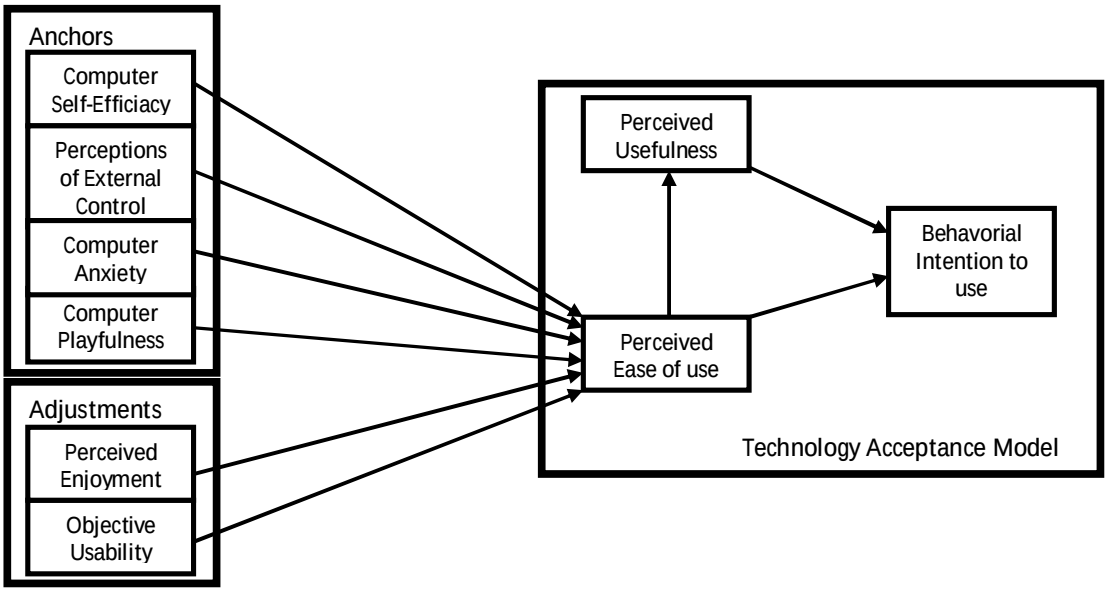


Figure 7: Theoretical Model of the Determinants of Perceived Ease of Use. Source: Venkatesh (2000).

TAM does not explicitly include intrinsic motivation, but earlier research has shown that there is empirical evidence regarding the importance of the role of intrinsic motivation on technology use in the workplace (Venkatesh & Speier, 2000). Venkatesh (2000) proposed computer playfulness as a system-independent, motivation-oriented anchor for system-specific perceived ease of use. In general, those who are more "playful" with computer technology are expected to find the use of the computer technology easier in comparison to end-users of computer technology with less "playfulness".

Venkatesh et al. (2003) established a new Unified Theory of Acceptance and Use Technology (next: UTAUT) model which incorporates elements from eight validated models into a 'Unified' causal model. UTAUT has been hypothesized and empirically supported. This model includes "*three direct determinants of intention to use (performance expectancy, effort expectancy and social influence) and two direct determinants of usage of behaviour (intention and facilitating conditions)*" (Venkatesh et al., 2003, p. 466). But to date, empirical testing is still limited (Youngberg et al., 2009). Youngberg et al. (2009) examined technology acceptance variables for highly educated, professionally autonomous end-users of an ERP component to understand significant variables' correlation and predictive effects on perceived usefulness and usage constructs. The ultimate implication of this research regarding end-users' acceptance is the need to educate and hire individuals who meet redefined proficiency parameters as end-users (Youngberg et al, 2009).

## 2.8 Constructed framework

It is widely believed that the adoption process influences successful use of new technology (Karahanna et al., 1999). Therefore, the acceptance of Clarity 8 by its end-users is very important in order to make it a success. Without technology adoption, end-users might only use the system superficially to enter/store data but not to explore its full potential; to analyze the information to gain a competitive advantage. To find out whether end-users accept Clarity 8, even though it is a mandatory technology, a constructed framework (figure 8) will be combined by using the previous mentioned theories of technology acceptance as a framework. TAM was tested in a voluntary setting and related to the implementation of relative small technology, such as e-mail accounts. The extensions of the original TAM were tested in mandatory settings and related to implementations of relative large technologies, such as ERP systems (Nah et al., 2004). The constructed framework will be tested in a mandatory setting related to the implementation of a relative medium technology, namely Clarity 8.

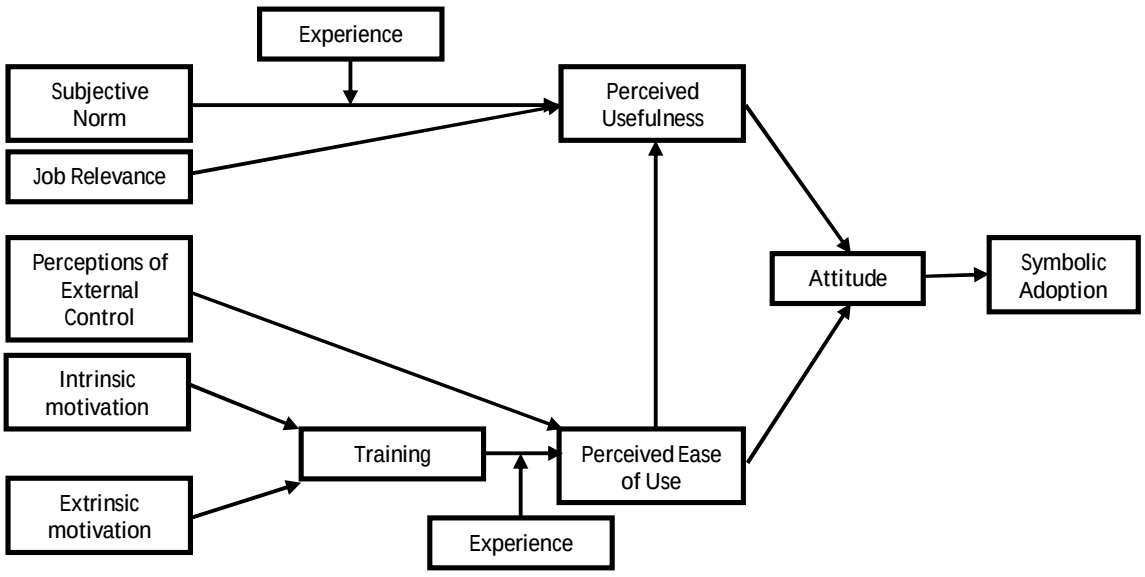


Figure 8: Constructed framework.

### 2.8.1 Original TAM:

Central in this constructed framework are the two key variables perceived usefulness and perceived ease of use, which were defined earlier on (chapter 2.7.1). Prior research showed that the key variable perceived ease of use is positively correlated with the key variable perceived usefulness (Davis, 1989; Amoako-Gyampah & Salam, 2004). Nah et al. (2004) found the basic relationships perceived usefulness-attitude and perceived ease of use-attitude of the original TAM to be significant, which are in line with prior empirical studies (e.g. Davis et al., 1989). Attitude refers to "*the degree of a person's positive or negative feelings about performing the target behaviour*" (Davis et al, p. 984). Symbolic adoption has been incorporated within the constructed framework because it refers to "*end-users' voluntary mental acceptance of a system, as the primary variable for assessing end-users' acceptance of ERP systems*" (Nah et al. 2004, p. 39). The construct symbolic adoption is an appropriate construct to explain IT adoption when usage is mandated (Karahanna, 1999; from Nah et al., 2004, p. 39).

### 2.8.2 Determinants of Perceived Usefulness:

The determinants of perceived usefulness are subjective norm and job relevance, which are relevant for this constructed framework because end-users of Clarity 8 can influence each other and these end-users will wonder what the added value to their job is. The integration of subjective norm within the constructed framework is considered especially important in a mandatory setting (Hartwick & Barki, 1994). Subjective norm refers to "*a person's perception that most people who are important to him think he should or should not perform the behaviour in question*" (Fishbein and Ajzen, 1975, p. 302; from Venkatesh & Davis 2000, p. 187) and job relevance refers to "*an individual's perception regarding the degree to which the target system is applicable to his or her job*" (Venkatesh & Davis, 2000, p. 191). Job relevance is incorporated within the constructed framework as a determinant of perceived usefulness, because those potential end-users who view a specific technology as being relevant to improving their job performance, will be more motivated to actually use it (Kim & Garisson, 2009). The variable experience has been incorporated in the constructed framework to find out whether an end-user is still impressionable by people who are important to him after he gained experience with the technology and this affects his view of the enhancement of job performance by the technology usage.

### 2.8.3 Determinants of Perceived Ease of Use:

One of the determinants of perceived ease of use that has been incorporated in the constructed framework is the perception of external control. In the context of workplace technology use, specific issues related to external control include the availability of support staff, which is an organizational response to help end-users overcome barriers and hurdles to technology use, especially during the early stages of learning and use (Bergeron et al. 1990). The importance of additional help in the form of support staffs for end-users of Clarity 8 in order to overcome hurdles should not be ignored by management.

The other determinant of perceived ease of use that has been incorporated in the constructed framework is training, because training makes end-users familiar with the new technology. "*A key issue facing information systems researchers and practitioners has been the difficulty in creating favourable user reactions to new technologies*", according to Venkatesh (1999, p. 239). Insufficient or ineffective training has been identified as one of the key factors underlying this disappointing reality. It is important to figure out how employees feel about the received training to get acquainted with Clarity 8. Does training encourage favourable perceptions among end-users about the ease of use of a technology, which in turn should lead to acceptance and usage? Two variables determine training; the first one is intrinsic motivation that leads to a more effective learning among end-users of a specific technology during training (Deci et al, 1991). Intrinsic motivation refers to "*the pleasure and inherent satisfaction derived from a specific activity*" (Vallerand, 1997; from Venkatesh 1999, p. 240).

And the second one is extrinsic motivation that emphasizes performing behaviour to achieve a specific goal, for example achieving a reward (Deci & Ryan, 1987). Again, the variable experience has been incorporated within the constructed framework. This time to find out what the effect of experience is on the degree to which a person believes that using the new technology would be free of effort.

## 2.9 Conclusion

The intention of this chapter was to develop a theoretical framework that will be used as a guidance throughout this research. This chapter started by investigating how the three processes budget allocation, resource planning and registration of working hours are spread out from top management in order to have a foundation when investigating how employees put these processes into practice. This will make it easier to find possible bottlenecks in one of the three processes. These possible bottlenecks can be analyzed in order to solve them so that project management can be executed without running each time into the same problems. By incorporating theory about ERP systems, implementation of ICT, resistance to change and various models of technology acceptance in this theoretical framework a constructed framework (figure 8) is described which will be tested to find out whether end-users of Clarity 8 accept this new technology. The most important determinants of the key variables perceived usefulness and perceived ease of use are incorporated in the constructed framework. The framework of the original TAM has been kept intact, because prior studies showed the significance of these relationships. Symbolic adoption has been added because in a mandatory setting this construct is appropriate to explain the degree of voluntary mental acceptance of the technology. The aim of this constructed framework is to investigate how the employees of ING are responding to the implementation of Clarity 8. An adoption of Clarity 8 by its end-users is necessary for a successful implementation. This will be tested by interviewing the end-users of Clarity 8. Chapter 3 will describe the interaction of the three processes with project management and why Clarity 8 will be implemented.

# 3. Project management and Clarity 8

In the chapters 2.1, 2.2 and 2.3 the three processes budget allocation, resource planning and registration of working hours were described from top management's perspective. The first sub question will be handled in this chapter where first the manifestation of the three processes in project management is elaborated in-depth to give a complete description from top management's perspective. With reference to project management, these three processes play an important role: budget allocation is important for knowing whether a project can be executed (are there enough funds), resource planning is important for composing a team that executes the project, and registration of working hours is important for keeping the budget within tolerances and adjusting resource planning if necessary (Internal document 4 from Advanced Management System: Project Management, 09-2009). A change in one of the three processes means it will have its impact on the other two processes. Second, the new program Clarity 8 will be described because the three processes will be integrated in this new mandated program. Clarity 8 is intended to eliminate redundant programs and make project management efficient.

## 3.1 Project management

Before the entire process of project management can start, a client sends an application to OIB. OIB supports all commercial activities for Domestic and Wholesale Banking within ING and provides the necessary IT systems and infrastructure. These divisions are the clients of OIB. After the application of a project has been received, an intake meeting will take place where the client and the line manager will make their program of demands and wishes known. Approval (Project Mandate) is necessary from the Operations Change Team to start with a project. Project management is based on the principals of PRINCE 2, a structured method to execute a project. The sub processes of the stages of project management (figure 9) that are related to one of the three processes budget allocation, resource planning or registration of working hours will be elaborated.

Overview of Project Management

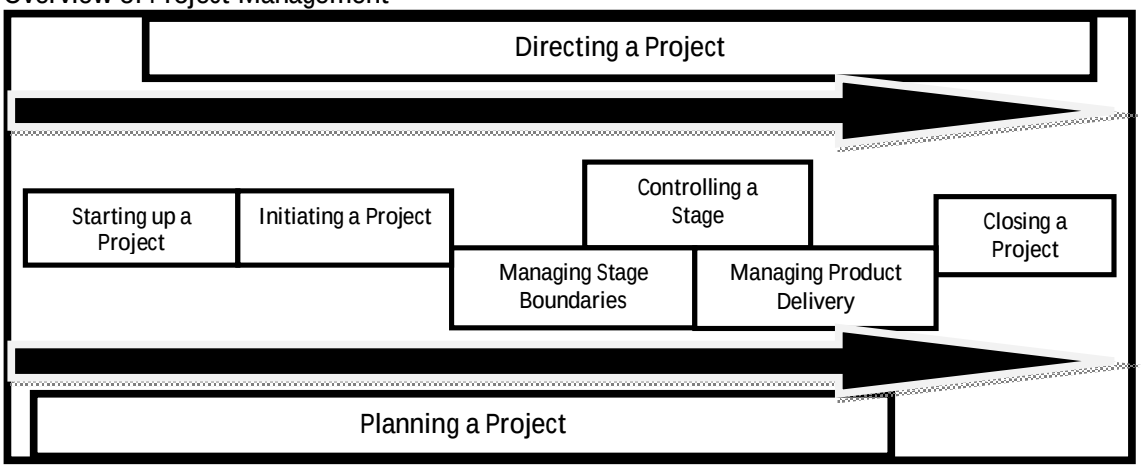


Figure 9: Blueprint of Project Management. Source: http://www.wiki.intranet/oib-ams/index.php/Category:Overview_Process_Assets

## 3.2 Directing a project

This procedure can be applied to all projects and runs from Starting up a Project until Project Closure (Internal Document 5 from Advanced Management System: Directing a Project, 09-2009). The following points are important for the Project Board in directing a project:

- approve the initiation of a project against a Project Brief and other documents produced during Starting up a Project;
- approve the commencement of work on the project's deliverables against a PID produced during Initiating a Project;

- monitor the progress of a stage by reviewing Project Status Reports, setting stage tolerances, providing ad hoc guidance to the project manager, dealing with escalated issues and making decisions about exceptional situations arising during Controlling a Stage;
- approve the start of subsequent stages of work against updated plans and other information produced during Managing Stage Boundaries; and
- approve the recommendation from the project manager to close down the project and ensuring this happens correctly during the stage Closing a Project.

Overview of Directing a Project

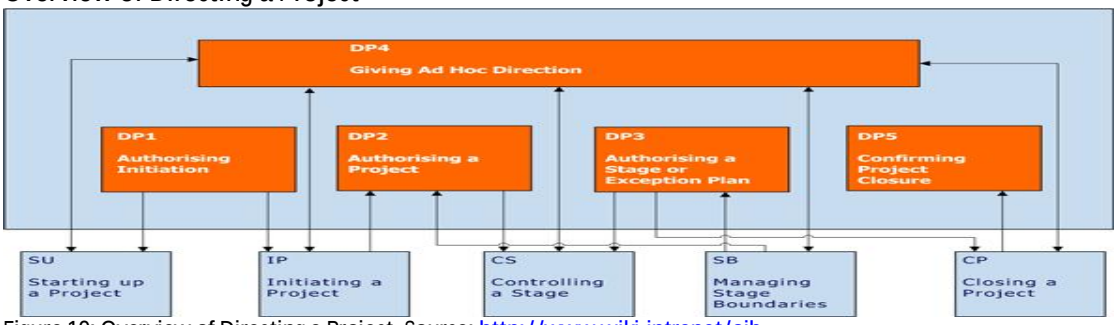


Figure 10: Overview of Directing a Project. Source: http://www.wiki.intranet/oib-ams/index.php/Procedure_for_Directing_a_Project

At the bottom-line of figure 10, five out of six initial stages of project management are shown. During this chapter, it will be clear how these initial stages of project management are directed by the Project Board. As clarification, a Project Board represents those senior line managers who have a major interest in the project and who will be the key stakeholders. All key stakeholders supply the top level commitment to the resources, timescales and impact of change that will be involved. The Project Board consists of three roles: Executive, Senior User and Senior Supplier. All roles must be present in the Project Board.

## 3.3 Planning a project

This procedure starts when a plan is required from various project management stages (Internal Document 6 from Advanced Management System: Planning a Project, 09-2009). Planning is an iterative process which means that there will be a series of loops through the planning steps as extra information becomes available or adjustments are made (figure 11). For planning, it is critical to reference historical data from prior projects with similar characteristics. To assist with planning, this historical data can be obtained from the project asset library. Figure 11 gives a clear overview of the sub processes that are related to four out of six of the initial stages of project management. These sub processes will be elaborated according to their connection with the initial stages of Project Management during this chapter.

Overview of Planning a Project

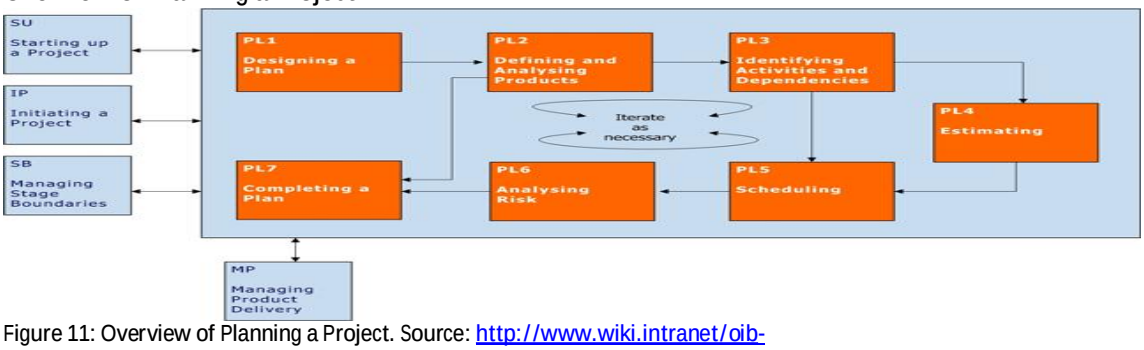


Figure 11: Overview of Planning a Project. Source: http://www.wiki.intranet/oib-ams/index.php/Procedure_for_Project_Planning

## 3.4 Project Start up

The first stage in project management is the Start up of a project (figure 12). This process will be used to develop a Project Brief which includes a plan for Initiating a Project in response to Project Mandate (approval) in order to ensure that the aims of the project are known, realistic, committed, and agreed to support the discussion whether to continue (Internal Document 7 from Advanced Management System: Project Start up, 09-2009).

Overview of Project Start up

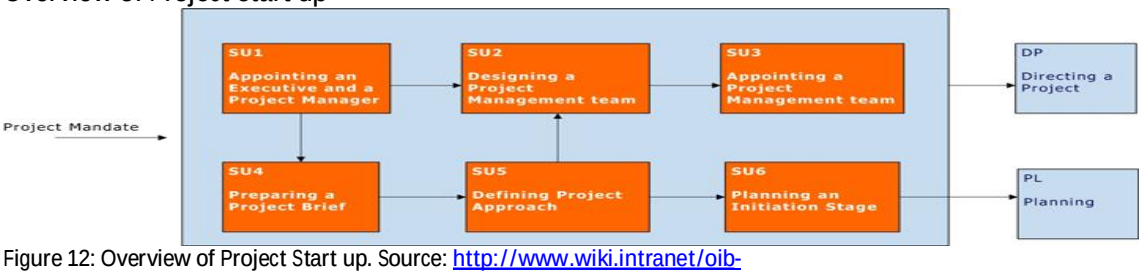


Figure 12: Overview of Project Start up. Source: http://www.wiki.intranet/oib-ams/index.php/Procedure_for_Starting_Up_a_Project

Within the first stage of project management resource planning and budget allocation are important processes. During this stage the different roles will be identified. The Project Mandate is a very important framework for this stage. The Project Mandate should indicate the general type of project, its size and complexity and its political and business sensitivity. This information will help to identify appropriate candidates for the project manager role and the Executive role (sub process 1). After they are appointed, the Executive identifies candidates (resources) for the Project Board roles and creates their job descriptions, he assesses whether any members of the Project Board are likely to delegate any of their assurance responsibilities, and he considers whether Team Managers are needed or that the project manager fulfils this task (sub process 2). The Executive assigns candidate names to all identified roles, appoints people to the Project Board, Project Assurance, Project Support, and Team Management. The Executive ensures that these individuals understand their roles and responsibilities in the management and support of the project. Furthermore the Executive ensures that these individuals will carry out their roles and responsibilities (sub process 3).

The Project Mandate information may not be complete or accurate, that is why a stable statement of project requirements is set in the form of the Project Brief. Project requirements mean the business, customer and system requirements. A business requirement represents the high-level objectives of the organization or the customer requesting the system or product. Business requirements describe how the world will be better with the new product in it. Business requirements explain why the organization/customer wants to implement the system and provide the basis for the Business Case (Internal Document 8 from Advanced Management System: Business Requirements, 12-2009). A customer requirement forms a translation of the goals, objectives and needs into a (simple) description of desired and useful behaviour of the system. A customer requirement describes what needs to be accomplished to fulfil the business requirements and what functionality and system behaviour is desired (Internal Document 9 from Advanced Management System: Customer Requirements, 12-2009). A System Requirement is a specification of the customer requirements and a translation into a logically structured (often technical and IT-) language (Internal Document 10 from Advanced Management System: System Requirements, 12-2009).

The Executive is ultimately responsible for the production of the Project Brief, but in practice the project manager will do most of the work. The Project Brief needs to include high-level information about resource planning; what needs to be done and why, who will need to be involved and how and when it will be done (sub process 4). After a Project Brief is prepared, a project Architect must be involved into the project in order to make the guidelines clear for a successful sign-off of the project,

identifies any training needs for users, identifies any constraints on time, money, quality and resource use or availability (sub process 5). These factors may influence the supplied budget.

## 3.5 Initiating a Project

The second stage in project management is the Initiation of a Project (figure 13). This stage will start when the Project Brief has been approved (Internal Document 11 from Advanced Management System: Initiating a Project, 09-2009). In this stage, a contract in the form of a Project Initiation Document must be drawn up between the Project Board and the project manager, in order for a common understanding of:

- the reasons for doing the project;
- what key products the project will deliver;
- how and when these will be delivered and at what cost;
- the scope of what is to be done;
- any constraints which apply to the product to be delivered;
- any constraints which apply to the project;
- who is to be involved in the project decision making;
- how the quality required will be achieved;
- what risks are faced; and
- who needs project progress information, how and when.

Overview of Initiating a Project

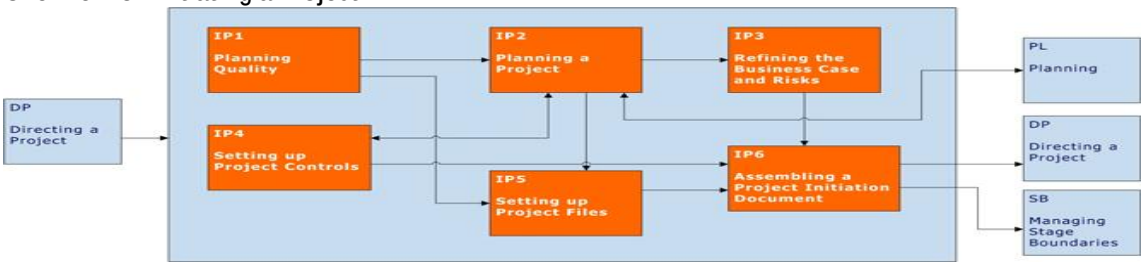


Figure 13: Overview of Initiating a Project. Source: http://www.wiki.intranet/oib-ams/index.php/Procedure_for_Initiating_a_Project

Within the second stage of project management resource planning and budget allocation are again important in order to initiate successfully the project. It is important that the project manager must understand at a high level the totality of the work of the project. This can be done by identifying the major activities which have to take place in order for the products to be delivered. Furthermore the suppliers must be involved, the major risks of the project must be assessed, the timescales must be identified and the overall resource requirements and costs must be identified (resource planning and budget allocation). Within this process, an Architect must be involved for the following tasks:

- identification of the key decision and review points for the project;
- confirmation whether the project approach selected in the Project Brief is still valid; and
- preparation of the project plans based on the information in the Project Brief.

The planning must cover at least the first three months after the expected approval date of PID (sub process 2). Furthermore, the project manager has to fulfil the following tasks:

- allocation of the various levels of decision making are required within the project;
- confirmation of the stage boundaries to provide the appropriate level of control;
- confirmation of the tolerances for the project and the escalation processes;
- establishment of the information needed associated with each of the decision-making processes;
- establishment of the monitoring mechanisms to satisfy these information needs;

- establishment of the resource requirements to provide the monitoring information; and
- planning the needed knowledge and skills (sub process 4).

## 3.6 Managing Stage Boundaries

The third stage in project management is Managing Stage Boundaries (figure 14). This stage ensures that all products in the current Stage Plan have been completed (Internal Document 12 from Advanced Management System: Managing Stage Boundaries, 09-2009). After this the Stage Report must be prepared, information needed for the Project Board need to be assessed and authorization for the start of the next process must be obtained.

This stage of project management is important for the registration of working hours. If the working hours of the team members are registered well, resource planning and budget allocation can be adjusted if necessary. During the project certain points of the Project Management Plan need to be revised: work products, overall approach and project structure and overall project schedule (sub process 2). This is an important stage because when it actually occurs that some changes need to be made after consulting the registered working hours, it will have its impact on the resource planning and budget allocation. For instance, when the actual workload is higher than expected, more resources are needed and the budget must be adjusted in order to finish the project right on time. In this case an Exception Plan must be produced which has to be approved by the Executive in order to receive more funds.

Overview of Managing Stage Boundaries

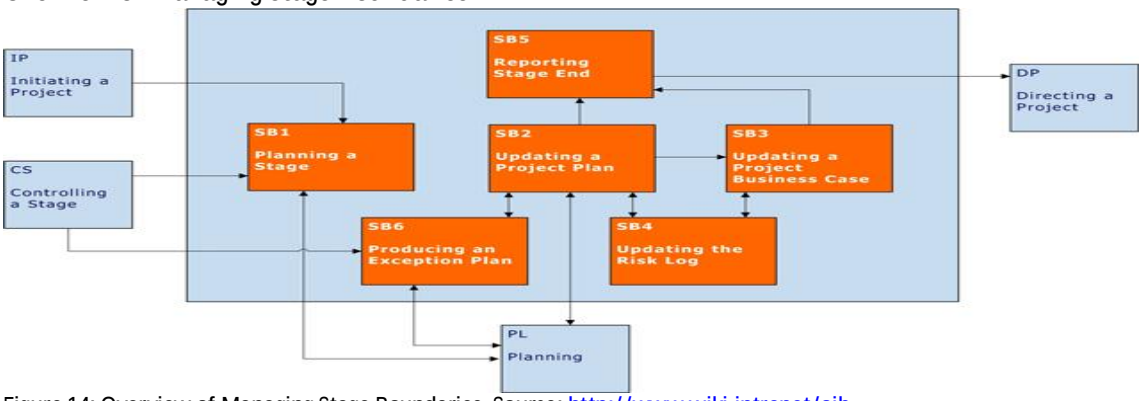


Figure 14: Overview of Managing Stage Boundaries. Source: http://www.wiki.intranet/oib-ams/index.php/Procedure_for_Managing_Stage_Boundaries

## 3.7 Controlling a Stage

The fourth stage in project management is Controlling a Stage (figure 15). Again within this stage it is necessary to control the three processes budget allocation, resource planning and registration of working hours. This stage ensures a controlled production of the agreed products, it tracks and reports the project status, it collects and analyzes project variances, it provides visibility into the project's progress, and it keeps the risks under control (Internal Document 13 from Advanced Management System: Controlling a Stage, 09-2009). Without a strict control of the three mentioned processes it is impossible to anticipate on problems. There is a 'natural' pattern of events to ensure that all necessary actions are carried out on a regular basis. However, project management is of an ad hoc nature, driven by problems and circumstances as they arise. This means that any or all of Controlling a Stage may be used in an event-driven manner as well as on the regular basis indicated. When the registration of working hours is processed, it can give project managers better insight into resource planning and budget allocation. Because of this insight it is possible that resource planning and budget allocation need to be adjusted in order for a better realization of the project.

Overview of Controlling a Stage

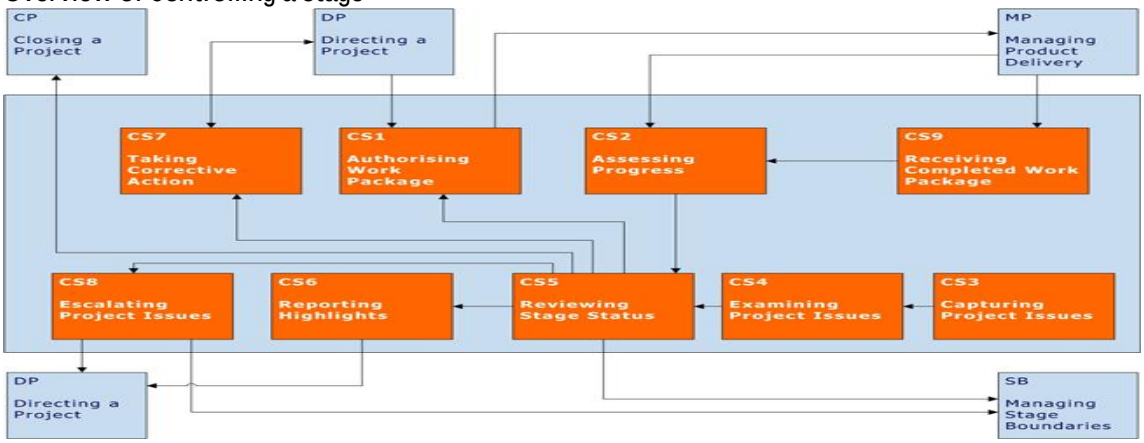


Figure 15: Overview of Controlling a Stage. Source: http://www.wiki.intranet/oib-ams/index.php/Procedure_for_Controlling_a_Stage

In this stage of project management, the project manager periodically checks whether the current stage is kept within the tolerances (budget control), reviews the project status and conducts Process and Quality Assurance (sub process 5). Furthermore, tasks of the project manager within this stage are:

- identifies the causes of the key variances;
- determines a response approach based on input of previous steps;
- looks for areas of possible improvement;
- identifies actions;
- raises issues for problems that cannot be resolved immediately;
- solicits feedback from the project team on the progress of the project (time planning); and
- records feedback collected from project team members (also called lessons learned) in the Lessons Learned Log (sub process 7).

## 3.8 Managing Product Delivery

The fifth stage in project management is Managing Product Delivery (figure 16). The objective of this stage is to allow a controlled break between the project manager and team manager or between the project manager and product creation/provision by third-party suppliers to agree work with the project manager, get it done and hand it back to the project manager (Internal Document 14 from Advanced Management System: Managing Product delivery, 09-2009).

Overview of Managing Product Delivery

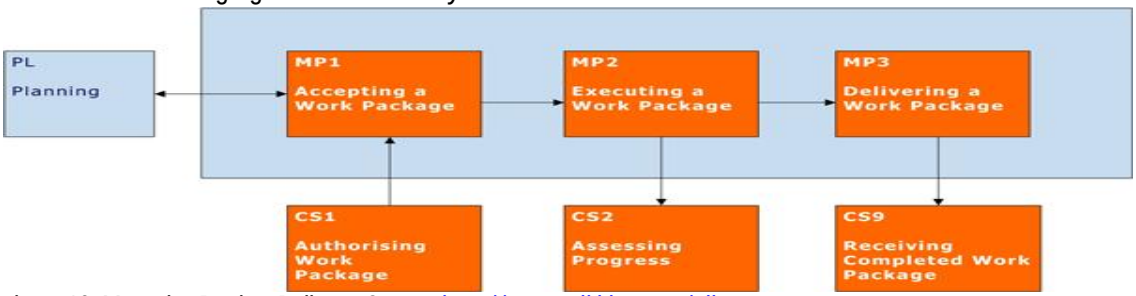


Figure 16: Managing Product Delivery. Source: http://www.wiki.intranet/oib-ams/index.php/Procedure_for_Managing_Product_Delivery

In this stage of project management, the Team Manager must obtain acceptance for the products developed from the recipient (client), hands over the completed products, checks that the Quality

Log entries are complete for the product(s) and advises the project manager of completion of the Work Package (sub process 3).

## 3.9 Closing a Project

The last stage in project management is to close a project after reviewing its performance, improvement opportunities and successes (Internal Document 15 from Advanced Management System: Closing a Project, 09-2009). This stage will start when the end of a project is approaching and when all deliverables are released and accepted by the Senior User. A second possibility for starting this stage is when the Project Board decides to discontinue the project prematurely, because it became apparent that the project is no longer viable for some reason. All the sub processes shown in the overview of figure 17 may be done in parallel or at least with considerable overlap.

In this stage, the project manager has to close the Supplier Agreement together with the procurement specialist (sub process 1). One of the actions necessary to be fulfilled is reviewing the agreement to identify any areas where terms may not have been met. The project manager will collect feedback from the client on project management, communications, deliverable function and quality, project conditions, project team and business attitude. Furthermore, there will be feedback collected from suppliers, project team and management (sub process 3). Lessons learned from mistakes of the current project can help to prevent them from occurring in future projects. The project manager must also consolidate the measurement and tracking data gathered throughout the duration of the project in accordance with the Detailed Standard for Organizational Measurements and Analysis and the Procedure for Controlling a Stage. One of the responsibilities of the project manager is reviewing the financial performance of the project for feedback of the supplied budget.

Overview of Closing a Project

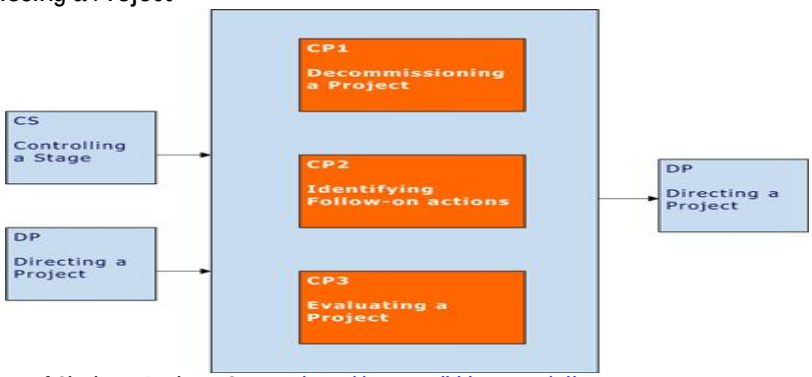


Figure 17: Overview of Closing a Project. Source: http://www.wiki.intranet/oib-ams/index.php/Procedure_for_Project_Close

Based on the evaluation and the project's work products, the project manager identifies together with the project team intellectual capital candidates. This information will help to compose better project teams for future projects (resource planning). They will look for:

- unique project information;
- methodologies utilized, enhanced or created;
- techniques utilized, enhanced or created;
- skills utilized, enhanced or created;
- industry knowledge, new or enhanced;
- client information, new or enhanced;
- asset to be used as a competitive edge; and
- unique concepts or approaches.

This evaluation must be documented in an End Project Report. This End Project report must be submitted to the Project Board for approval or rejection according to the Procedure for Directing a Project. Authorization can be provided either by e-mail or an entry recorder in meeting minutes.

## 3.10 Clarity 8

The three processes budget allocation, resource planning and registration of working hours are important for project management. In the current situation these three processes are seen as separate processes, although they are related to each other. Each process is handled through another program which would not cause problems if they would be synchronized. As mentioned before, ING will implement a new program called Clarity 8 which will substitute the programs PIT, e-profit and Microsoft Projects/Excel in January 2010. Clarity 8 is intended to make project management efficient by integrating the three aforementioned processes into one program. A first release of Clarity was rolled out in July 2009, including basic functionalities of portfolio management, project management, resource management and time recording. A second release will follow in the second half of 2009, built on the first release. First users (TANGO & OIB Belgium) will also start using Clarity as from the first release. As of 1 January 2010, all users will be able to write time in Clarity 8. PIT can then be switched off (Factsheet 2009 Management). In the following sections the importance and the advantages of Clarity 8 will be emphasized. Furthermore, what this change means for employees and management will be described.

## 3.11 Importance of Clarity 8

Clarity 8 will make an end to performance problems and it will give users full access to all functionalities. It will give project managers a better insight into their projects and it will simplify progress reports. Management will gain better insight into demand and supply, with support for priority setting and decision making. Clients will benefit from better insight into budget allocation and resource planning (Factsheet 2009 Management).

Resource management (resource planning) will give up-to-date insight in resources (jobs, roles and skills) in order to create better forecasts. Clarity 8 will give the resource manager:

- Capacity planning; the process of determining the production capacity needed by an organization.
- Skills management; the practice of understanding what kind of resources are available for allocating to projects.
- Resource search and qualification; the process of finding the right employee for the right task.
- Staff requirements; the process of assembling the right staff.

Clarity 8 will give project managers:

- Project planning, Work Breakdown Structure creation and project templates; this means a better work flow of the project.
- Estimating, budgeting and forecasting; this means a better forecasting of budget.
- Time capture; this means a better insight in time planning.

## 3.12 Advantages of Clarity 8

ING will go from scattered (PIT) to one source of information for the full portfolio and project management processes. Clarity 8 will be much easier to use because of (Factsheet 2009 Management): easy access to standard 'graphical' reports and storyboard; better insight into projects, time spending and demand; and CMMI (Capability Maturity Model Integration) support (risk & issue logs, document storage). Clarity 8 will be easier to use and it has major benefits over PIT, namely: priority setting for decision making; reliable planning; online help and training; less

administration for employees; better use of working time; and budget request (financial cost plan) based upon team & tasks.

## 3.13 What does Clarity 8 means for employees?

Clarity 8 is a project and portfolio management system for a structured, professional and understandable working method for projects, in which registration of working hours plays an important role for the team members. With the implementation of Clarity 8 the registration of working hours will not be very different for employees than it was in PIT. This process is still very important because both management and employees benefit from a proper registration of working hours. It means that budget allocation and resource planning can be controlled and updated if necessary. The registration of working hours still needs to be done by employees themselves. This process will be completed through other activities than PIT. In Clarity 8 it is almost impossible to make errors with the registration of the working hours because employees do not need to fill in the PID codes themselves. This makes the program more efficient than PIT ever has been.

## 3.14 What does Clarity 8 means for management?

All processes in one software package and thus one way of working and thinking, will lead to project transparency, easier reporting and better decisions (Factsheet 2009 Management). Clarity 8 will give project managers better insight into their projects and simplify progress reports. This simplification is very important for management in order to make use of this program. When the program is easy to use, management will see that the program is also useful for their purposes. With a few simple clicks it is possible to print out a report. So it will be very easy to analyze data, because Clarity 8 already does most of the work. For the client (demand) a lot will change. The client can easily find an overview of budget, resources and the registered working hours. This makes decision making more efficient. The registered working hours need to be controlled in order to adjust the resource planning. Adjustment of the resource planning has its impact on the budget. The main point for the client is to keep all the data up-to-date. This means more time will be spend on paperwork.

## 3.15 Conclusion

In this chapter the first sub question is handled where the manifestation of the processes budget allocation, resource planning and registration of working hours in project management is handled from top management's perspective. Project management has shown that the three processes are very important but also related to each other in order to execute a project. Without a budget, no project can be executed. Resource planning is important because in the Project Start up stage a project team must be composed. Identifying the roles and their tasks within a team is necessary to find the right person for the right job. Registration of working hours is a process to keep the other two processes within tolerances. When the working hours are registered correctly, project managers and clients can adjust the resource planning and the budget allocation with mutual arrangement. A project manager is the key figure within project management and has to manage the different stages carefully in order to execute the project according to client's requirements. In this chapter the new program Clarity 8 is described because the three processes will be integrated in this new mandated program. Clarity 8 is intended to eliminate redundant programs and make project management efficient. In the following chapter the current situation of how the three processes are put into practice by the employees is described. Furthermore, the constructed framework of figure 8 is tested to find out whether end-users of Clarity 8 accept this new technology.

# 4. Three processes and implementation of Clarity 8 in practice

The previous chapter has described from top management's perspective the manifestation of the three processes budget allocation, resource planning and registration of working hours in project management. Furthermore, Clarity 8 has been described because the three aforementioned processes will be integrated in this new program. The subject in this chapter is how ING's employees experience the three processes and the implementation of Clarity 8 in practice, the second sub question. In order to investigate the experiences of ING's employees, half standardized interviews were held. The reason for this choice is that it is important that respondents feel free in telling their experiences with reference to the three processes and the implementation of Clarity 8. By giving the respondents the opportunity of telling their experiences, possible bottlenecks can be found. ING's employees are specified into four groups, namely team members, project managers, line managers and the Business in order to give a view of how the three processes and the implementation of Clarity 8 are put into practice from different perspectives. These different perspectives are important because these four groups of employees are the main groups involved in project management and will be among others the end-users of Clarity 8. The processes are not described to redesign them in a later stadium, but to analyze experiences of ING's employees with reference to the three processes and the implementation of Clarity 8 in practice. This chapter is set up by describing for each of the three processes and the implementation of Clarity 8 the perspectives of the four groups of employees.

## 4.1 Budget allocation

A major process in project management is budget allocation. In chapter 2 this process was described in-depth from top management's perspective in order to make clear in chapter 3 how this process is manifested in project management. From half standardized interviews held with the various groups of employees, experiences have been investigated with reference to the process of budget allocation. The described experiences in this section with reference to the process of budget allocation are the lead to find possible bottlenecks, analyzed in chapter 5.

### 4.1.1 Team members:

Team members know that a Change MTP is composed at top management and, when participating in a particular project, that they can be asked by the project manager to give an estimation of the required hours for a particular task. They only receive feedback from the project manager about the financial situation of a project when the project manager forecasts that one of the team members is exceeding the tolerances of the reserved hours. The team members do not have to deal with budget allocation because it is not a part of their daily job.

### 4.1.2 Project managers:

Generally, project managers work in accordance of AMS, but flexibility is sometimes necessary to deflect from guidelines of top management depending what kind of project is running. The first stage in project management is the Start up of a project (figure 12). This process will be used to develop a Project Brief which includes a plan for initiating a project in response to Project Mandate (approval). This is in order to ensure that the aims of the project are known, realistic, committed and agreed by the Business and OIB in order to support the discussion whether to continue or not. Depending on the size of the project, a PID needs to be composed. Project managers see this framework as an essential part in completing a project successfully. Due to indistinctness about the requirements and the budget this process is not followed each project. When a project is ready to start, the project manager gives an estimation of the total costs of the project. Generally, discussions arise between the Business and OIB about the required budget for a project. There is an uncommon distinction between the accountability of Business and OIB. The Business project managers do not feel accountable for the deliverables of IT. That is why they do not clarify what they really want from OIB,

perhaps subconsciously. In the case that OIB does not deliver what it wants, then they can hold the project managers of OIB accountable and not themselves.

Estimations are based on project managers' experience and team members' knowledge, because of a lack of a testing tool. A project is broken down into different parts. Suppliers, specialists, architects, and team members are asked to give an estimation of the required hours for their task. From this data the project manager is estimating the total costs of the project. According to project managers, experience is more important than using historical data from executed projects. It occurs that projects are not analyzed thoroughly due to lack of time. The estimation is only an advice because the final responsibility for the budget lies at the Business. When during a project the project managers expect that budget or time planning exceeds its tolerances, an Exception Report is handed in at the Project Board. Depending on sufficient motivation the Project Board will decide whether or not to agree with the Exception Report. PIT is a major tool in this process; project managers consult data from PIT to find out if the project stays within the tolerances of its budget or if the resource planning needs to be adjusted.

### 4.1.3 Line managers:

Generally, a project should not start before the requirements are clear and the budget is known and both are approved. The reason that the Business pressures to start the project early is due to the fact that in the past the relationship based on mutual trust was harmed because OIB was not the most reliable in meeting the deliverables on time. And why OIB was not reliable is because the requirements were not clear. A vicious cycle started.

A Change MTP is coordinated from top management and budget is allocated through the various departments depending on the forecasted projects for the coming year. There is hardly influence of line managers in a Change MTP. If needed, line managers are asked to give an estimation of a certain project. But this process of budget allocation is out of reach of line managers. Departments only hear what their budget for the coming year is and have to deal with it. Monitoring this budget means a lot of paperwork. The financial process is not as transparent as it should be. More specifically, there are a lot of different tools (e.g. Microsoft Projects/Excel, PIT, e-profit) to find the required data.

### 4.1.4 Business:

In a Change MTP cycle there are no project managers involved when a budget reservation for the various projects is made. When a project starts, a project manager is involved to give his estimation. A project manager divides the project into different tasks and appoints the resources that match the identified roles for the different tasks of the project. These resources give their estimation of the required working hours for the tasks and finally it will be summed up to a total. This estimation will be challenged most of the time. The Business knows which business resources are needed and what the testing stage will cost in order to come up with their part of the estimation. From then on the Business needs the expertise of OIB for their part of the estimation to execute the project. Discussion arises because the Business thinks that a project can be executed with less budget due to cost containment. Generally, the Business decides about the supplied budget and OIB can only give advice. It occurs that budget and requirements are not approved yet while a start is made with a project.

## 4.2 Resource planning

A major process in project management is resource planning. In chapter 2 this process was described in-depth from top management's perspective in order to make clear in chapter 3 how this process is manifested in project management. From half standardized interviews held with the various groups of employees, their experiences are investigated with reference to the process of resource planning.

The described experiences in this section with reference to the process of resource planning are the lead to find possible bottlenecks, analyzed in chapter 5.

### 4.2.1 Team members:

Team members never heard of SharePoint, a tool to fill in the schedule for the coming four months so that resource managers have a clear overview of the availability of resources. Furthermore, they see the relevance of setting up a social network in order to acquire a role within a project team. The team members agree that they do not have much influence in resource and time planning of a project. An example derived from interviews; a project had a very strict planning that was not feasible. After mentioning this to the project manager without success, this expectation turned out and an Exception Report was handed in for extending the deadline. These team members also revealed that after a Project Close Up no feedback is given on their skills, methodologies and techniques that has been used, while they prefer feedback in order to develop their competences.

### 4.2.2 Project managers:

There is no standardization in the process resource planning, but project managers are processing the planning in Microsoft Excel or Microsoft Projects. Names of team members, tasks and allocated hours are processed in a sheet. A social network is a very important aspect within ING to get appointed for the role of project manager. Formally (1% of the cases), the Business approaches the resource manager to appoint a project manager. Informally (99% of the cases), the Business approaches the project manager first to inform him about the project. When there is mutual interest, the resource manager is approached to make it a formality. The project manager follows the same process for composing a project team. When the project area is unknown, a call upon the social network of the Business or the resource manager is made for finding the right resources. When the resources cannot be found internally, the project manager searches externally through his social network. When this is not a success, RAM is put into action to search for the right external employees. The use of RAM is mandatory when contracting external employees.

### 4.2.3 Line managers:

Line managers also fulfil the role of project managers. Sometimes they find it hard to find the right resources for the identified roles. A mentioned cause is cost containment; due to a lack of budget no external resources can be attracted. Another cause is the fact that you need approximately six weeks to hire an external resource through RAM (finding and contracting). This is quite difficult to manage if considered that everyone is working with a strict planning. Furthermore, there is a chain of paperwork for hiring external resources and extending contracts. There is no standardization for keeping an overview of your resource planning. Every project manager does it in his own way, which means that a line manager gets data from different tools that are not synchronized. Line managers confirmed the importance of setting up a social network for obtaining resources and new projects. Resource planning is not always processed at SharePoint. It is a useful tool if everyone keeps it up-to-date but it is neglected soon because everyone is too busy to keep it updated.

### 4.2.4 Business:

First the Business Change Portfolio Manager talks with the Business to find out what it really wants. Broad ideas are discussed with OIB and a project manager gets appointed that can help the Business to develop these broad ideas. Generally, the project manager at OIB is directly appointed by the Business. In cooperation with the client a draft is made that functions as a framework. When the requirements are clearly formulated, the project manager contacts the resources and allocates them to different tasks. The Business can give a preference in resource planning, but the final decision lies at OIB. The social network within ING is important for acquiring required resources for a specific task. It is a natural process to work with a resource with which you share nice experiences with.

## 4.3 Registration of working hours

A major process in project management is registration of working hours. In chapter 2 this process was described in-depth from top management's perspective in order to make clear in chapter 3 how this process is manifested in project management. From half standardized interviews held with the various groups of employees, their experiences are investigated with reference to the process of registration of working hours. The described experiences in this section with reference to the process of registration of working hours are the lead to find possible bottlenecks, analyzed in chapter 5.

### 4.3.1 Team members:

Team members received a manual about registration of working hours and PIT codes necessary for allocation of working hours when starting at ING. PIT is an old and user-unfriendly tool for registration of working hours that has many bottlenecks. Team members see the relevance of registering working hours for management. This process is seen as necessary to keep budget within tolerances.

### 4.3.2 Project managers:

Project managers have more responsibilities in PIT than team members; besides registration of their working hours they must give authorization to the different project members, check registered working hours and keep budget within tolerances by comparing allocated working hours with reserved working hours. Project managers agree that the introduction with PIT could be much better because of the importance of registration of working hours. Paperwork is maintained to analyze the working hours because of a lack of links to other systems (e.g. e-profit or Microsoft Projects) in order to find possible bottlenecks in the resource planning and the budget allocation. Project managers are aware that a change in one of the three processes has its impact on the other two processes. But it will save time if there is only one system that integrates these three processes.

### 4.3.3 Line managers:

Line managers did not receive any guidance with PIT when they started at ING. One of the line managers did not even know for the first three months where to register his working hours and outsources it to an administrative employee. Line managers share the opinion that PIT serves fine as a tool for registering working hours, but a tool with more possibilities such as integrating the aforementioned processes will be far more efficient. Thereby, it is very important to emphasize the interrelationship of the processes because a change in one of them has its impact on the other two.

### 4.3.4 Business:

At the Business there are less mistakes made because it is an easy tool and everyone knows how to register his working hours into PIT. Within the Business, registration of working hours is not as large-scaled as it is at OIB. It occurs that a specific project in PIT is accessible for everyone to allocate working hours, even though they are not authorized. The project manager's responsibility is to authorize only those resources that work in a specific project. It costs more time to allocate resources to a PIT code, but eventually time is saved because the project manager does not have to check allocation of working hours without authorization anymore and undo these errors. Project managers also have targets to meet which means controlling allocated working hours as essential.

## 4.4 Clarity 8

Clarity 8 will go live from January 2010 and it means that the process of implementation is in full movement. A successful implementation of Clarity 8 is important in order to make project management efficient. As mentioned before (chapter 1.3), the three processes will be integrated in this new mandated program. From half standardized interviews held with the various groups of employees, their experiences are investigated with reference to the implementation of Clarity 8. The

described experiences in this section with reference to the implementation of Clarity 8 are the lead to find possible bottlenecks, analyzed in chapter 5.

### 4.4.1 Team members:

According to team members, communication from top management is not very well. One team member has received a manual and e-mails about the possibilities of Clarity 8, how to register the working hours and the progress of this implementation. However, three other employees have not received anything from top management. But the team members agree that it is not necessary to keep them informed about Clarity 8, because it does not matter to them in which tool they have to register their working hours. If it is a user-friendly tool that is intuitive, everyone can use it because within OIB all the employees are IT specialists. The expectation is that Clarity 8 will go live from January 2010 because of rumours heard and the implementation of Clarity 7 at Tango and OIB Belgium. Critical success factors are clear manuals, clear end vision, effective trainings and communication from top management in order to create support among employees.

### 4.4.2 Project managers:

Project managers are uncertain about the impact this change will have on their job. This results from bad communication from top management. They did not receive any e-mails, factsheets, print screens to be informed about the progress made of the implementation, benefits of Clarity 8 and the impact on their job. None of the interviewed project managers followed a training or e-learning course. From rumours heard they have already formed their opinion about the e-learning, because it seems to be a click course and at the end of the course you still do not know what you have learned. "*Resistance among employees derives from the fact that top management is forcing them to follow different kinds of courses, while they have a very busy schedule*" (quote of a project manager). It seems there is a lot of frustration among this group of employees. One of the project managers already works with Clarity 7 purely out of curiosity. That is why he already sees the possibilities of Clarity 8 and is looking forward to the implementation. The expectation is that Clarity 8 will go live in January 2010 because of rumours heard and also the successful implementation of Clarity 7 at OIB Belgium and Tango. But in their opinion there is still a lack of critical success factors, such as a clear end vision, support among project managers and line managers, effective training and clear communication from top management.

### 4.4.3 Line managers:

A remark is that line managers do not share the opinion about communication between top management and employees about the implementation of Clarity 8. One opinion is that Clarity 8 is a mandatory tool which is fine, but to get acquainted with Clarity 8 top management has forced e-learning and training for its employees. "*This is a very arrogant attitude because top management is not considering the fact that everyone has a very strict schedule and is not capable of taking three days off (two for e-learning, one for training) in three weeks"* (quote of a line manager). When the implementation of Clarity 8 started earlier, this mandatory e-learning and training could be spread out more over time. Another opinion is that the mandatory training followed was very clear and showed a lot of improvements of Clarity 8 in comparison to Clarity 7. Factsheets, print screens and e-mails are received about the benefits of Clarity 8, but also the progress made in accordance to the implementation. Top management started in time with the announcement of implementing Clarity 8 and providing training. The only remark is about the e-learning course that was terrible. Although different opinions about the implementation strategy of top management with reference to Clarity 8, the line managers are clear about Clarity 8 as a tool; it is a progress that the three processes will be integrated and synchronized in one tool. This will make their work much more efficient.

In order to be successful, Clarity 8 must support the three processes instead of dictating step by step what to do. Flexibility is necessary because a process cannot be always followed by the rules. Clarity

8 must be an easy, user-friendly and supportive tool because support from employees is created at a certain point by the system and not by management. But top management could make the acquaintance with Clarity 8 much more pleasant when there are actually support teams at the work floor that help overcome hurdles such as allocating resources to certain projects.

### 4.4.4 Business:

A lot of focus is put into a successful implementation at the Business. All the project managers within the Business already followed the training of Clarity 8 that was organized very well. This also counts for the Change Portfolio Managers who were enthused by the training. Direct access to the SPOC (Single Point of Contact) at the Business makes the acquaintance with Clarity 8 more pleasant. The only concern is whether or not using Clarity 8 will create more administrative work. A critical success factor of the implementation is whether standardized reports, a feature of Clarity 8, are accepted at every level of the organization. A standardized report is a helpful feature if everyone is using it in the same way. A great advantage of Clarity 8 is that the three processes budget allocation, resource planning and registration of working hours are integrated and synchronized. A much better view of the financial situation of a project is provided and because of project portfolio it will be clearer how the financial situation of the business unit is. The current situation is that these processes are done more or less manually and that all the fragmented data are scraped together.

## 4.5 Conclusion

This chapter answers the second sub question where the experiences of the various groups of employees with reference to the processes of budget allocation, resource planning, registration of working hours and the implementation of Clarity 8 are described. The various groups of employees interviewed were team members, project managers, line managers and the Business. It can be concluded that the various groups of employees are frustrated because in their opinion the three processes can be performed better than in the current situation. Optimizing these three processes leads to a better execution of a project. From investigation of the experiences of the various groups of employees with reference to the implementation of Clarity 8 it can be concluded that this process can be improved. The Business was pleased about the implementation of Clarity 8 in contrast with team members and project managers, while line managers were divided in their opinion. The findings of this chapter will be used as a foundation to describe the bottlenecks in chapter 5, to define the preferences in chapter 6 and to analyze the bottlenecks in chapter 7.

# 5. Possible bottlenecks

In chapter 4 the experiences of the various groups of employees have been described with reference to the processes of budget allocation, resource planning, registration of working hours and the implementation of Clarity 8. This chapter will treat the third sub question where the bottlenecks derived from the interviews held with the various groups of employees are described, again with reference to the aforementioned processes including the implementation of Clarity 8. This chapter is set up by describing for each of the processes the bottlenecks mentioned by the four groups of employees. Again, ING's employees are specified into four groups, namely team members, project managers, line managers and the Business in order to describe the bottlenecks of the three processes and the implementation of Clarity 8 from different perspectives. These different perspectives are important because these four groups of employees are the main groups involved in project management and will be among others the end-users of Clarity 8. The bottlenecks found in the aforementioned processes will be described in this chapter.

## 5.1 Budget allocation

In this section bottlenecks of the process budget allocation will be described in order to give an overview of the problems that the various groups of employees run into. These bottlenecks have been derived from half standardized interviews held with the various groups of employees.

### 5.1.1 Team members:

Chapter 4.1.1 made clear that team members hardly have influence in the process of budget allocation. In order to make every team member aware of the impact of a change in the budget allocation to the other two processes and create commitment for the project, feedback about the financial situation of a project is necessary. Unfortunately there is not always feedback. Feedback is only given when an employee exceeds his reserved hours for a specific task. In their opinion this should be done frequently to make them aware of the interrelationship of the three processes.

One team member has experienced that a lot of adjustments were made in the resource planning and in the budget allocation during a project. This resulted from the fact that the PID was not approved which created indistinctness about the deliverables. A start was already made with the project due to pressure of the Business. This resulted in a very strict time planning but during the project a lot of adjustments were made and this has had its impact on the budget, resource planning and the deadline for delivering the product. Even when small changes are made during a project, no one actually makes a detailed impact analysis to find out what the consequences are for the resource planning, time planning and the budget allocation. Team members are also committed to other projects and when the deadline is extended their commitment to other projects may be at risk.

### 5.1.2 Project managers:

Project managers share the same view about the difficulty of analyzing a project and estimating its budget. There is a lot of time pressure which is not beneficial for the analysis of a project. The project managers use their experience and team members' knowledge for budget estimation. Historical data is less frequently used as a reference in this process. The problem arises of how to verify the estimation based on team members' knowledge and project managers' experience? Project managers agree that there should be a kind of testing tool to make a more accurate estimation of the costs. This will save them a lot of administrative work and of course time during a project.

Because of pressure of the Business, incompetence of project managers or indistinctness about the requirements or budget, an overestimation of the total costs of the project is incorporated in the PID. The reason for this is that project managers know that budget is cut by 10-15% by the Business. In order to anticipate on this adjustment in the budget, project managers incorporate an extra 10-15% in their estimation. The next time the Business cuts 25-30% in the budget and again project

managers anticipate by incorporating an extra 25-30% in their estimation. The result is that this process is endless. An example is the TANGO program that consists of many projects.

### 5.1.3 Line managers:

A first problem according to line managers starts with the fact that a Change MTP is coordinated top-down while line managers have no influence in the process of budget allocation. There is a true mismatch in this process, because top management cannot estimate new initiatives as accurately as project managers can do. This causes a Change MTP that is not realistic. A Change MTP that is not realistic has its carry-over on the various departments. Budget is allocated that does not give the actual state of affairs for the required budget of the new projects of the coming year.

Generally, a project manager should not start with a project before the requirements and the budget are both clear and approved. Because of pressure of the Business the project manager starts with the analysis of the project. The reason that the Business pressures is because in the past the relationship between OIB and the Business, based on mutual trust, was harmed because OIB was not the most reliable supplier in meeting deliverables on time. OIB, for its part, was not reliable because requirements and/or budget were not clear. A vicious cycle arose. A framework in the form of PID is based on indistinctness about budget and requirements, time pressure or incompetence of the project manager. This makes it easy for the Business to cut in the budget when there are flaws in the estimation. The only change OIB has to deliver in time and within the tolerances of the budget is at the expense of quality or to hand in an Exception Report.

A final problem is that the financial situation of a project is not as transparent as it should be. There are a lot of different tools to use, only this results in more paperwork because data of the different tools are not synchronized with each other. For example, invoices are not processed in PIT which means that a separate overview must be held in order to get a better view of the financial situation of a project. There is no standardization of how to administer financial data. Because the financial situation of a project is not as transparent as it should be, it affects the transparency of the financial situation of the department. There is a lack of a clear project portfolio at OIB. It means that a lot of time is spend for paperwork to make a better overview of the financial situation of the department. Reports are interpreted differently by the various levels of management, because every level of management keeps its own paperwork due to a lack of standardization. Discussion arises about deflection of figures instead of discussing about what they actually mean.

### 5.1.4 Business:

A Change MTP is historically earlier then a Business MTP, so when the Business manager of Structured Finance is asked if he foresees any initiatives for the coming year, he does not know it yet. This is a true mismatch between the two MTP's. The Business manager contacts as soon as possible his foreign customers (structured finance global) whether or not they foresee new initiatives for the coming year. Based on this information the Change MTP is set up. Because of this mismatch, there is uncertainty about what projects will be executed in the coming year and what their budget is.

No project managers are involved in a Change MTP cycle, which is actually a mismatch because their knowledge could be useful to estimate a more accurate Change MTP. The Business knows what its resources and the testing stage will cost, but to complete the estimation of the total costs of a project the expertise of OIB is needed. The estimation of the total costs of a project given by the project manager is mostly higher than the initial estimation in a Change MTP. This higher estimation is not always accepted due to poor motivation in the Project Brief or due to cost containment which depends of the priority of a project. Discussion arises, because the Business thinks it is possible to achieve the same result with less budget. Due to pressure, OIB agrees with a cut in the required budget and during a project an Exception Report is handed in because the allocated budget was not

enough. When the estimation of the total costs of a project is more accurate and approved, the process of handing in an Exception Report occurs less frequently. This will save a lot of overhead.

Because it occurs that the requirements are not clear or approved and adjustments are made during the project, Exception Reports (approximately 40% of the projects) are handed in. The possible effect of this indistinctness about budget and requirements is that project managers need more budget or more time in case of for example hiring an external resource for a specific task to finalize the project. As mentioned before (chapter 4.2.3), this is a slow process which requires approximately six weeks while the external resource is needed immediately.

## 5.2 Resource planning

In this section bottlenecks of the process resource planning will be described in order to give an overview of the problems that the various groups of employees run into. These bottlenecks have been derived from half standardized interviews held with the various groups of employees.

### 5.2.1 Team members:

Team members are aware of the relevance of having a clear and strict resource planning. Due to changes made during projects, Exception Reports are handed in to extend the deadline. It is frustrating when team members are already allocated to other projects and because of this delay the next project is delayed. Also when team members work on different projects in the same period, and one project requires more time than forecasted, it becomes frustrating because of lack of time to fulfil both projects on time. One team member once experienced during a project that the resource planning was too strict. No adjustments were made after mentioning it to the project manager, because an agreement is an agreement between OIB and Business. The strict planning did not turned out to be feasible and the deadline was not achieved. The result was handing in an Exception Report.

Another main point is keeping the resource planning up-to-date four months in advance on SharePoint to make clear for management to which projects the resources are allocated. Unfortunately, none of the team members ever heard of it, although this is a guideline in AMS. Another guideline in AMS is that team members must receive feedback after the Project Close-Up stage from their project manager about their skills, methodologies, techniques and industry knowledge used. Unfortunately, this does not occur and team members see this as a real pity because of receiving feedback will make them aware of the development of their competences.

### 5.2.2 Project managers:

The first problem in resource planning is a lack of integration of resource planning in budget allocation and registration of working hours. Besides, there is no standardization of using one particular system for processing the resource planning. Project managers spend a lot of time with paperwork that would not be necessary if those three processes were integrated into one system.

A second problem that can arise is that project managers rely heavily on their social network to acquire different tasks. Formally, the resource manager of a project manager needs to be consulted first for the availability of his resource. Informally, the project manager is triggered first by the Business and then the application is laid at the resource manager to make it official. A project manager mentioned that 1% of the cases are handled formally and 99% of the cases informally. If every stakeholder agrees, nothing is the matter. But the responsibility of the resource manager is contained to a minimum in allocating resources to different tasks. So the project manager is in fact deciding what kind of tasks he likes to fulfil. This is also the case for composing a project team.

A third problem arises when RAM, a supportive human resource management desk, is put into action. Project managers try to acquire an external resource for an identified role first through their

social network. For example, when an external resource is found by a project manager, RAM is put into action to complete the paperwork. This shortens the time for recruiting an external resource. But when the project manager cannot find the right external resource through his social network, RAM is put into action to find the right external resource. RAM has a contract with Logica CMG, an external supplier for resources. The project manager applies for an external resource by formulating the requirements necessary for the identified role. RAM takes care of the process of recruiting and contracting. Only this process requires approximately 6 weeks, while project managers do not know exactly when they need the external resource and start the application.

A fourth problem is that no feedback is given to team members after the project Close-Up stage, although it is a guideline in AMS. Although project managers see the relevance of giving feedback to team members in order to develop their competences and to store the data for historical reference of future projects; they have not done this in past projects. Project managers are afraid that using this data as a reference for future projects would be at the expense of their social network. Another issue is that SharePoint is not kept up-to-date for having an overview of the resource planning.

### 5.2.3 Line managers:

It is hard to compose a project team when top management has a policy of cost containment which means that there is nowadays a lack of internal resources. In order to hire an external resource, RAM is put into action. An approval is needed of level 1, which can be a bottleneck when it is not high priority. A strict planning means that an external resource is needed for example in the fourth week of the project, but the question is whether the resource that matches the identified role is available. This means a great risk lies in finding the right external resource for the right moment in order to meet the deadline of the project. This can result in handing in an Exception Report to extend the deadline. Hiring an external resource that is available but does not meet all the requirements for the identified role is not desirable. This is a true bottleneck for executing the task the external resource is hired for. First of all there is no precise match between the requirements for the identified role and the requirements of the external resource. And secondly, there is a lack of commitment when hiring an external resource that has a task for two weeks and leaves the organization afterwards.

Line managers find it a true bottleneck to receive data from different kinds of tools. Administratively, it will cost a lot of time and money to scrape all this data together. Now in practice there is a true mismatch between the allocation of tasks and allocation of working hours. For example, an architect has 80 hours to complete a task, but after the 80 hours the task is not completed yet. The project manager has a major problem because the architect cannot fulfil this task anymore because of allocation to another project. It is hard for the project manager to set and monitor the link between the progress made by an employee for a particular task and the allocated working hours.

### 5.2.4 Business:

It is hard for a starting project manager to acquire a strategically important project, because within ING building a social network is very important. It occurs that the Business prefers project managers that showed to be valuable in past cooperation. Furthermore the resource planning is not clear enough. The reason for this is that the Business resources do not allocate their working hours to the project. If the Business resources will allocate their hours for a zero rate (baseline), there would be a better overview of what these resources actually did and what a project really cost.

## 5.3 Registration of working hours

In this section bottlenecks of the process registration of working hours will be described in order to give an overview of the problems that the various groups of employees run into. These bottlenecks have been derived from half standardized interviews held with the various groups of employees.

### 5.3.1 Team members:

PIT has a bottleneck that is not solved since its introduction as a tool for registering the working hours; no totals can be found for the allocated working hours. It means that team members are not made aware of the total allocated working hours in comparison to the reserved hours. Feedback is not given about the allocated working hours in PIT unless team members already exceeded the tolerances of the reserved hours. A team member mentioned that he will work even more efficient when he knows that 30 reserved hours are left out of the 200 hours reserved for a specific task. Another team member refutes this view because he thinks it is the other way around; if employees know how many hours are left for a particular task, they will work less efficiently to complete the total reserved hours. Another interesting point is the fact that team members are making mistakes easily in registering their working hours in PIT. They only see numbers and no names which can cause allocation of working hours to the wrong project or activity. Besides, there is no clear distinction between baseline or change projects. This means more paperwork for themselves but also for project managers and assistants to manage the allocation of working hours.

### 5.3.2 Project managers:

Project managers share their opinion about PIT; it is a user-unfriendly tool for registration of working hours and making financial analysis of a project because there is no link between PIT and other tools. Invoices are calculated separately and then summed up with the allocated working hours. It means that project managers have a lot of paperwork to do even though it would be easier if it was synchronized and integrated into one tool. An interesting issue is that when from data of PIT is forecasted that budget will be exceeded, team members get the order from project managers to allocate their working hours to another PIT code, most of the time a baseline project instead of a change project. Only now feedback is given and this means a mismatch between actual and forecasted budget and that not all the actual worked hours are paid out by the Business, only those that were budgeted.

### 5.3.3 Line managers:

Line managers did not get any guidance at all about registration of working hours when they arrived at ING. One of the line managers found out after three months that the working hours needed to be registered into PIT. This administrative task is now outsourced to an administrative worker. PIT is an easy but user-unfriendly tool that is very old and is not linked to projects or other systems.

### 5.3.4 Business:

It occurs that a project in PIT is available for everyone to allocate working hours to, although they are not authorized. It is the project manager's responsibility to authorize only those employees that work at a certain project. It will cost more time to allocate resources to a project, but eventually the project manager will save time. The Business does not have to check if someone without authorization allocated his working hours. PIT is not a program that meets the current standards, it is user-unfriendly and perhaps more frustrating is that it is hard to make changes after the allocated hours are made final.

## 5.4 Clarity 8

In this section bottlenecks of the implementation of Clarity 8 will be described in order to give an overview of the problems that the various groups of employees run into. These bottlenecks have been derived from half standardized interviews held with the various groups of employees.

### 5.4.1 Team members:

A main point to take into consideration is that the team members do not have a clue about the possibilities of Clarity 8 and what the impact of this change means for their own work. One team

member received e-mails and a manual, but has not read them yet. The other team members did not hear anything yet from top management about the implementation of Clarity 8. This is a strange development when one team member receives information and the others do not.

### 5.4.2 Project managers:

The impact of Clarity 8 on the job performance of management is greater than on the job performance of team members. It means that top management should guide this group of managers very well in order to make the implementation of Clarity 8 a success. But project managers did not notice this guidance until now. They are not kept up-to-date about the progress of the implementation of Clarity 8 made until now and they do not know what the impact will be on their daily work. According to project managers there is a lack of vision of top management. An interesting issue is the uncertainty about the administrative tasks in Clarity 8 that project managers need to do because of this lack of vision of top management. Project managers wonder how to handle the resource planning, because it seems that resource planning can be kept very strict. Everyone can see when to do what task for which project. But the problem arises when a delay is caused by an adjustment in the project. Resources allocated for future projects will have a lack of time. Besides, project managers are wondering how to operate when they need a resource within one week and because of a strict planning this resource is available after three weeks. Project managers think to solve this by handing in an Exception Report or overestimating planning and/or budget.

### 5.4.3 Line managers:

A first bottleneck is the poor communication about the implementation of Clarity 8. Bad communication causes an uncertainty about the impact Clarity 8 will have on the job performance. "*I expect from top management that it will inform us through e-mails, factsheets and print screens about the progress made with the implementation of Clarity 8 and the features of this new tool*". Top management expects a certain amount of effort of its employees to get acquainted with this new tool by following e-learning and training and attending presentations. But top management is not considering the strict schedule everyone has. The line manager mentioned this problem to his manager but it is a mandatory tool that must go live one way or the other in January 2010. This will result in doing things half, such as e-learning and training because of a lack of time that exists. Clarity 8 is pushed through the organization and this will be at the expense of a successful implementation. A remark is that the two line managers do not share their point of view about the communication of top management.

Line managers foresee a bottleneck in the administrative part of operating Clarity 8. But it is more a cultural problem within ING, because they forget that it is part of project management to administer necessary information into Clarity 8. It became an ING culture that from the Executive Board till the lowest level, everyone is interfering with the content of a project. This is why project managers do not have time to do what they should do; project management. An example is that no feedback is given to team members and stored in a database because it is seen as overhead. But perhaps the main problem is that project managers are not guided enough, they are free to find out themselves how to process certain things. AMS is correct concerning content, but if a line manager demands from a project manager to use AMS he would be overwhelmed by the amount of information. AMS mentions a required approval but not in which template and what the requirements must be and where to hand in the application. Managers should provide the templates, tools, checklists and so on. Project managers are not trained in Project management, even though it must be seen as an occupation by itself.

The importance of a successful implementation of Clarity 8 is somewhat underestimated. Support on the work floor is missed. For example, resource data had to be filled in Clarity 8 before the deadline, only there was no support in order to do it well. In December 2009 the running projects that will be

continued in the coming year need to be processed in Clarity 8. The line managers are already afraid of what will happen. It is a true bottleneck that they cannot find support on the work floor. The greatest risk of Clarity 8 is if negative opinions could have a domino-effect.

Another bottleneck is that Clarity 8 has a feature to print standardized reports. It only would be beneficial if everyone uses it. So if a project manager sends a report to his manager it must be accepted that it is a reflection of the situation. Standardization means that everyone must use the feature. When someone is not keeping the data up-to-date in Clarity 8 and is getting away with it by mentioning the reason for instance in an e-mail and that it is accepted by the manager. No one would use the tool anymore and will keep his own paperwork in for example Excel. A missing point in Clarity 8 is that OIB has not the accessibility to project portfolio to keep one overview of the financial situation of a department or entire business unit.

### 5.4.4 Business:

Clarity 8 is a labour-intensive tool which is not always intuitive. A bottleneck could be the priority setting in the project portfolio. There is no clearance about the meaning of priority 3 on a scale of 1-10. It does not have to mean the same for different persons. And in Clarity 8 it is also the other way around, scale 10-1 instead of scale 1-10. There is a lack of univocal.

The feature of standardized reports of Clarity 8 is a progress but the risk lies that the same thing will happen as in the current situation; everyone is doing it in his own way. There is no standardization of working between the different levels. When Clarity 8 is implemented every level must make use of this feature to get more standardization within the organization. The effect is determined by how you are reporting data to others. There is no point of use when the standardized report must be converted into another template just because others want it. Standardization is very important. Clarity 8 will fail when the standardized feature is not standard anymore and everyone is handling reports in their own way. Then the discussion arises about the deflection of the figures instead of what the figures actually mean.

## 5.5 Conclusion

The third sub question is answered in this chapter, namely describing the bottlenecks that the various groups of employees run into with reference to budget allocation, resource planning, registration of working hours and the implementation of Clarity 8. These bottlenecks are derived from half standardized interviews with the various groups of employees. A summary of the bottlenecks can be found in figure 18. Many bottlenecks that occur in one of the three processes are mentioned by one or more groups of employees. This means that a certain bottleneck is not only a frustration for one group, but for several groups. A bottleneck that is mentioned by several groups of employees is indicated by a colour. For example, for the process budget allocation the bottleneck indistinctness about requirements and budget is mentioned by each of the four groups of employees. This is marked red in order to show that this bottleneck raises frustration among several groups of employees. When a bottleneck is not marked with a colour, it means it raises only frustration for one group of employees. During half standardized interviews the constructed framework of figure 8 was tested. Bottlenecks in the implementation of Clarity 8 are described to find out whether or not there is resistance among the various groups of employees and if this new mandated program will be symbolically adopted. In chapter 6 the preferences from the interviewed employees will be described in order to take them into consideration when solving the bottlenecks in chapter 8. First chapter 7 will analyze the bottlenecks in order to find a pattern. This can lead to a main cause from which many bottlenecks can be derived.

Summary of the bottlenecks per group of employees per process.

| Various groups of employees / Bottlenecks per process | Team Members | Project Managers | Line Managers | The Business |
|---|---|---|---|---|
| Budget allocation | - Delay other projects due to indistinctness deliverables.<br>- No feedback during project. | - Indistinctness of requirements / budget<br>- Overestimation to incorporate a margin<br>- Lack of testing tool / time<br>- No use of historical data for estimation | - Indistinctness of requirements / budget<br>- No influence in Change MTP<br>- Harmed relationship OIB-Business<br>- Too many tools means a lot of paperwork | - Indistinctness requirements / budget<br>- No influence in Change MTP<br>- Cut in budget due to overestimation.<br>- Change MTP earlier than Business MTP. |
| Resource planning | - No use of SharePoint.<br>- No feedback after project.<br>- Delay other project due to a poor resource planning. | - No use of SharePoint.<br>- No feedback after project.<br>- Lack of integration of the three processes (standardization).<br>- Slow process of RAM.<br>- Use of social network. | - Different tools and no integration of the three processes.<br>- Slow process of RAM.<br>- No commitment of external resources. | - Use of social network. |
| Registration of working hours | - No feedback.<br>- Easily making mistakes.<br>- No totals in PIT. | - No feedback.<br>- No integration with other tools.<br>- User-unfriendly tool.<br>- Mismatch actuals/forecasts.<br>- Hard to make an analysis. | - No integration with other tools.<br>- User-unfriendly tool.<br>- No guidance. | - Hard to restore errors.<br>- User-unfriendly tool.<br>- Authorization for everyone. |
| Implementation of Clarity 8 | - No communication top management / employees.<br>- No clue about the possibilities. | - No clear communication between top management / employees.<br>- No guidance.<br>- Uncertainty about impact on job.<br>- Lack of clear vision top management. | - Poor communication between top management / employees.<br>- Lack of support on the work floor.<br>- Administrative part of the job.<br>- Importance of standardized reports.<br>- Lack of project portfolio. | - Importance of standardized reports.<br>- Clarity 8 is labour-intensive.<br>- Not intuitive.<br>- Not univocal. |

Figure 18: Summary of the bottlenecks per group of employees per process.

# 6. Preferences

Chapter 5 treated the third sub question where the bottlenecks derived from the interviews held with the various groups of employees were described, with reference to resource planning, budget allocation, registration of working hours and the implementation of Clarity 8. This chapter will treat the fourth sub question where the preferences of the various groups of employees will be described. This chapter is set up by describing the preferences mentioned by the four groups of employees for each of the three processes and the implementation of Clarity 8. Again, ING's employees are specified into four groups, namely team members, project managers, line managers and the Business. These different perspectives are important because these four groups of employees are the main groups involved in project management and will be among others the end-users of Clarity 8.

## 6.1 Budget allocation

In this section preferences of the various groups of employees with reference to the process budget allocation will be described that have been derived from half standardized interviews.

### 6.1.1 Team members:

As noticed in chapter 5.1.1 team members have no influence in the process of budget allocation. Team members can only influence this process when a project manager asks them to give their estimation for a certain task. From interviews it became clear that team members have no preferences with reference to the process of budget allocation because it is not part of their daily job.

### 6.1.2 Project managers:

It is important that the requirements and the budget are clear and approved in order to know what to build for what price. Project managers estimate total costs of a project based on their experience and team members' knowledge. A preference is the need for a testing tool in order to estimate the total costs of a project more accurately. Besides, more time to analyze a project and set up a framework in the form of a PID without pressure of the Business will be very helpful for a clear estimation. A final preference is that there must be one tool where all the financial data can be processed in. For example, an invoice must be processed in the same tool as the working hours in order to have one financial overview of the project. This will save a lot of paperwork.

### 6.1.3 Line managers:

A preference is the need for a match in influence of top management and lower management in setting up a Change MTP. Generally, lower management can estimate the total costs of a project better than top management. When Project and line managers are involved in the process of budget allocation, a more accurate Change MTP can be set up. Another preference is that requirements and budget must be clear and approved, before a project manager starts with a project. This will result in fewer Exception Reports that are handed in at the Project Board. A final preference is that the financial situation of a project must be transparent by using only one tool instead of several tools for processing the financial data. This will save a lot of paperwork.

### 6.1.4 Business:

A preference of the Business is to solve the mismatch between Change MTP and Business MTP. Because the Change MTP is historically earlier than the Business MTP, both OIB and Business do not know what to expect for the coming year. Another preference is to involve project managers in the process in order to set up a more accurate Change MTP. Instead of top-down or bottom-up there must be a middle course in influence. A final preference is to appoint a requirement engineer in order to solve the problem with the clarity of the requirements. This clarity will help project managers to make accurate estimations of the total costs of a project. A requirement engineer is

someone with the right skills to set up requirements that are understandable for the Business and for the supply.

## 6.2 Resource Planning

In this section preferences of the various groups of employees with reference to the process resource planning will be described that have been derived from half standardized interviews.

### 6.2.1 Team members:

A preference is that team members like to have feedback from the project manager when a project is finalized. It will be helpful in developing their competences. Besides that it will be helpful for team members, project managers can use this data to find resources for future projects.

### 6.2.2 Project managers:

Project managers are not always sure when an external resource is needed. A preference in resource planning is that when RAM is put into action in order to find an external resource, this time frame will be shorter than the current 4-6 weeks. Another preference is that a database as described in AMS in order to store feedback given to team members will not go at the expense of the social network within ING. Project managers see this social network as a helpful tool for to acquire resources.

### 6.2.3 Line managers:

A preference is to shorten the process when RAM is put into action to find an external resource. In the current situation it takes approximately 4-6 weeks to find and contract an external resource, while the resource is needed within a time frame shorter than that of RAM. This will cause a delay in the project. Another preference is the need for one tool to organize the resource planning where the link is set between an allocation of a resource to a task and the reserved hours for this task to monitor the progress made in the project.

### 6.2.4 Business:

A preference of the Business is that there should be a better overview of the resource planning. There must be a link between the tasks that are allocated to resources and the reserved hours for these tasks in order to monitor the progress made by the resources.

## 6.3 Registration of working hours

In this section preferences of the various groups of employees with reference to the process registration of working hours will be described that have been derived from half standardized interviews.

### 6.3.1 Team members:

A preference that team members find important is to make them aware of the impact of a change in one of the processes with reference to the other two processes in the form of the Project Status Report. The progress of a project is kept up-to-date in this report. In this way, the interrelationship of the three processes is emphasized.

### 6.3.2 Project managers:

A preference for registration of working hours is that this process must be linked to the other two processes in order to have an overview of the situation of a project. Now the project manager must scrape all the required data from different tools, which costs a lot of time. One tool means time-saving and standardization because everyone works in the same way.

### 6.3.3 Line managers:

There must be one tool that links the three processes budget allocation, resource planning and registration of working hours. This will make it a lot easier to analyze the situation of a project. For instance when a change is made in the resource planning, project and line managers can monitor the registration of working hours to find out if the budget stays within its tolerances. This means that project and line managers can anticipate faster and more efficient on issues during a project.

### 6.3.4 Business:

A preference is that in order to complete the overview of the total allocated hours in PIT, the Business resources also allocate their working hours in PIT at a zero rate. In the current situation the financial overview is not a reflection of the truth. If the Business resources allocate their working hours in PIT at a zero rate, a more accurate reflection of the total project costs can be shown and perhaps more important, to see how many hours are allocated to which tasks by the Business resources.

## 6.4 Clarity 8

Clarity 8 will go live from January 2010 and a successful implementation is important in order to benefit from its features. In this section preferences of the various groups of employees with reference to the implementation of Clarity 8 will be described that have been derived from half standardized interviews.

### 6.4.1 Team members:

Team members find it important to overcome hurdles in the first few weeks when Clarity 8 goes live. Team members will only register their working hours into Clarity 8, which means that they only receive the necessary guidance. Although support teams on the work floor will be helpful in order to support all the employees processing data in Clarity 8. Clear manuals can contribute to overcome hurdles.

### 6.4.2 Project managers:

A preference is to have a clear vision of the end goal, clear communication of top management and an effective training. When this is achieved, a successful implementation will be guaranteed. Another preference is that Clarity 8 must reduce the amount of paperwork and not increase it. Finally, Clarity 8 provides the feature to print standardized reports. This feature is only a progress if it is maintained within the entire organization.

### 6.4.3 Line managers:

One preference is that the feature of standardized reports is used by the entire organization. This standardization is necessary for the success of Clarity 8 or else everyone is composing a report in his own way. Clarity 8 integrates the three processes which means that the other tools are redundant. Another important preference is that line managers would like to have more support from top management to get acquainted with Clarity 8. There are support teams needed at the work floor to overcome hurdles and motivate employees to use Clarity 8.

### 6.4.4 Business:

A preference is that when the feature of standardized reports is used, the entire organization must use it, or else it is not standardization anymore. Discussion about the deflection of the figures can be prevented when the entire organization handles reports in the same way. Another important preference is that Clarity 8 must be intuitive and univocal. Univocal means that there must be clarity about the meaning of priority 3 on a scale of 1-10. In the current situation it does not have to mean

the same for different persons. And in Clarity 8 it is also the other way around, scale 10-1 instead of scale 1-10. This must change in order to prevent confusion in priority setting.

## 6.5 Conclusion

This chapter answers the fourth sub question where the preferences of the various groups of employees have been described with reference to budget allocation, resource planning, registration of working hours and the implementation of Clarity 8. These preferences have been derived from half standardized interviews with the various groups of employees. A summary of the preferences can be found in figure 19. Many of the preferences are mentioned by one or more groups of employees. This means that a certain preference is not only a preference of one group but of several groups. A preference that is mentioned by several groups of employees is indicated by a colour. For example, for the implementation of Clarity 8 the preference acceptance of standardized reports is mentioned by project managers, line managers and the Business. This is marked red in order to show that this preference is mentioned by several groups of employees. When a preference is not marked with a colour, it means it is only mentioned by one group of employees. These preferences are important in order to give top management a better insight in what employees' preferences are. These preferences will be used in chapter 8 to solve the mentioned bottlenecks of chapter 5. Chapter 7 will first analyze the bottlenecks in order to find a pattern. This can lead to a main cause where many bottlenecks can descend from.

Summary of the preferences per group of employees per process.

| Various groups of employees / Preferences per process | Team Members | Project Managers | Line Managers | The Business |
|---|---|---|---|---|
| Budget allocation | • Not applicable. | • One tool for the integration of the three processes.<br>• Approval of requirements and budget.<br>• The need for a testing tool.<br>• More time for analyzing a project. | • One tool for the integration of the three processes.<br>• Balance in composing a Change MTP.<br>• Approval of requirements and budget. | • Balance in composing a Change MTP.<br>• Solve the mismatch between Change MTP and Business MTP.<br>• Assignment of a requirement engineer. |
| Resource planning | • Receiving feedback when project is finalized. | • Shorten the process of RAM.<br>• A database for the search of internal resources not at the expense of social network. | • Shorten the process of RAM.<br>• Link between resource allocation to a task and the allocated hours. | • Link between resource allocation to a task and the allocated hours.<br>• Better overview of resource planning. |
| Registration of working hours | • Feedback to emphasize the interrelationships of the three processes. | • The integration of this process with the other two processes into one tool. | • One tool that links the three processes. | • Business resource must also allocate their working hours into PIT. |
| Implemen-tation of Clarity 8 | • The need for support teams.<br>• Clear manuals. | • The acceptance of the standardized reports.<br>• Clear end vision of top management.<br>• Effective training. | • The acceptance of standardized reports.<br>• The need for support teams. | • The acceptance of standardized reports.<br>• The need for univocal. |

Figure 19: Summary of the preferences per group of employees per process.

# 7. Analyses of the bottlenecks of the three processes and Clarity 8

In chapter 4 the current situation from different perspectives has been described with reference to budget allocation, resource planning, registration of working hours and implementation of Clarity 8. In chapter 5 the bottlenecks and in chapter 6 the preferences with reference to the three processes and implementation of Clarity 8 have been described. Data was gathered from half standardized interviews with the various groups of employees. ING's employees are specified into four groups, namely team members, project managers, line managers and the Business in order to describe the three processes and the implementation of Clarity 8 from different perspectives. In order to solve the bottlenecks mentioned in chapter 5, first it is necessary to analyze these bottlenecks. This chapter is divided into two parts; the first part is an analysis of the main bottlenecks in the three processes in order to find a pattern which can lead to the main cause of the existence of several minor bottlenecks. The second part is an analysis of Clarity 8 where the constructed framework (figure 8) is taken into consideration.

## 7.1 Three processes

Analysis of data gathered from interviews held with the various groups of employees resulted in a pattern that reflects the main bottlenecks within project management. In this section the pattern in the form of a vicious cycle in figure 20 is discussed to give a clear view of the problems of the three processes that occur in project management. The reason behind composing a blueprint as in figure 20 is to create the awareness that these bottlenecks are related to each other while they are now seen as separate. This blueprint reflects exactly the actual state of affairs in project management. Due to unclear requirements and budget, problems arise in budget allocation, resource planning and registration of working hours.

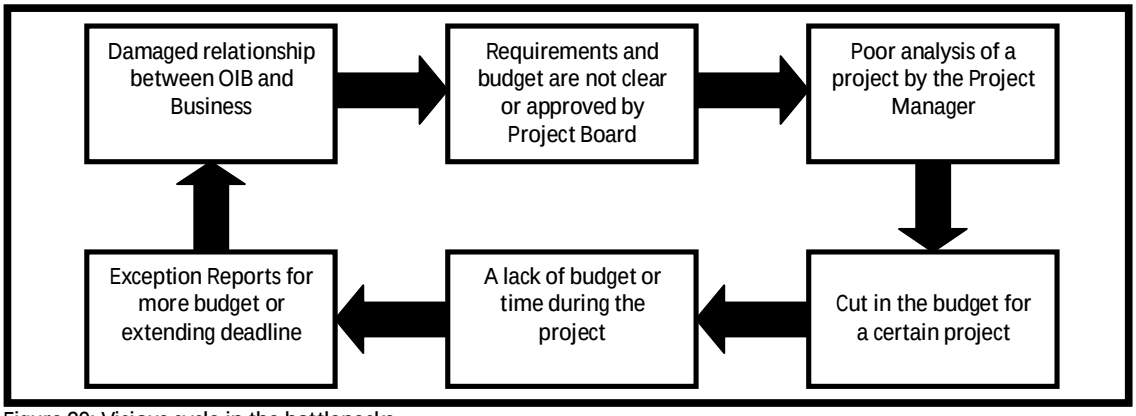


Figure 20: Vicious cycle in the bottlenecks

### 7.1.1 Damaged relationship OIB and Business:

The first bottleneck in the vicious cycle is the harmed relationship between OIB and the Business. This relationship used to be based on mutual trust but OIB did not seem to be the most reliable supplier in meeting the deadlines and the quality of the deliverables. According to OIB the deadlines and the quality of the deliverables could not be met because in most of the projects the requirements and/or budget were unclear and not approved. This was due to an unbalance in the accountability of project managers of OIB and project managers of the Business. This means that there is no mutual trust between the two parties.

### 7.1.2 Unclear requirements and budget:

The second bottleneck in the vicious cycle is the vagueness about the requirements and/or budget. These requirements and the budget must be approved before the project manager starts with a project. But due to a lack of mutual trust between the two parties, the requirements and the budget

are kept vague. This creates uncertainty among the project manager about the deliverables of the projects. There is no clear distinction in the accountability between OIB and the Business. Besides, cost containment plays a major role in budget allocation. Due to the economic crises, the budget is not endless anymore which means there must be a change in attitude at OIB and the Business.

### 7.1.3 Poor analysis of a project:

The third bottleneck in the vicious cycle is the analysis of a project. The project manager must analyze the project in order to motivate the estimation of the total costs of the project well in the Project Brief. Besides the estimation of the total costs of a project, the resource and time planning must be set up. But due to a lack of a testing tool, a database with historical projects or time pressure from top management, the project manager finds it hard to analyze the project well. Sometimes the incompetence of the project manager also plays a role in this process. This incompetence is mostly because of a lack of guidance from top management. Project management is an occupation by itself, and guidance in AMS, training and providing the right tools can help the project manager greatly. Due to the previous mentioned bottlenecks, the PID is based on a lot of uncertainty about the deliverables. A PID based on uncertainty is a guarantee for failure of the project. A PID is the continuation of a Project Brief, but more detailed.

### 7.1.4 Cut in the budget:

The fourth bottleneck in the vicious cycle is the cut in the budget by the Business. Because of the many flaws in the analysis of the project, the Business has the impression that the project can be executed with less budget than the project manager initially estimated. A cut in the budget means that the project manager must adjust the budget allocation and resource planning of the project. The registration of the working hours must be managed in order to stay within the tolerances of the budget. Functionalities of the deliverables can be left out to stay within the tolerances of the budget, but the Business wants to have the whole package. Besides, the estimation given by the project manager does not match the budget derived from the Change MTP. This means a higher chance of disapproval because of this mismatch.

### 7.1.5 Lack of budget or time:

The fifth bottleneck in the vicious cycle is the lack of budget or time during a project. Because of the cut in the initial estimation and due to the fact of vagueness about the requirements, a project manager directs the project towards what he thinks the Business would like to obtain. The Business makes many changes during the project because the requirements are not approved which means there is no accountability. There have not been done any detailed impact analyses to see what the effect of these changes during a project will be on meeting the deadline of the deliverables or to stay within the tolerances of the budget. A cut in the budget means a strict resource planning with less reserved hours. But this also means more chance on delay when for instance a resource is not immediately available due to the slow process of RAM for finding the right external resource. The time planning is very strict because the Business maintains a deadline that is difficult to postpone. A solution can be to leave out functionalities of the deliverables, but the Business wants the whole package and refuses to do any concessions. Another bottleneck is the lack of a linkage between the allocated resource to a task and the allocated working hours for that task. This will make it a lot easier for the project manager to monitor the progress of the project.

### 7.1.6 Exception Reports:

The final bottleneck in the vicious cycle is handing in an Exception Report to obtain more funds or to extend the deadline of the deliverables because of the previous mentioned bottlenecks. This Exception Report should be submitted to the Project Board. In this Exception Report the reasons for the deviation are motivated by the project manager. This procedure will cost a lot of overhead because the Project Board will analyze whether or not it is worth to continue the project. It will save

a lot of time and money when the project manager has the opportunity to analyze the project properly in order to set up a time planning and budget allocation. From interviews it became clear that approximately 40% of the projects need more funds or that the deadline must be postponed.

From figure 21 can be concluded that 70% (Budget miscalculation, Dependency other project, Scope change OIB and Business and resource allocation) of the projects where Exception Reports are handed in at the Project Board, are due to the fact of the previous mentioned bottlenecks. This means when the vicious cycle has been broken, a lot of overhead costs will be saved. Not necessarily more budget will be saved, because estimations of projects by project managers in an ideal situation (e.g. clear and approved requirements and budget, testing tool and no pressure) can be higher than what was estimated in the Change MTP. The benefits of breaking the vicious cycle lies in the overhead of handing in fewer Exception Reports at the Project Board than before and to prevent major losses by shutting down projects that are doomed to fail in an early stadium.

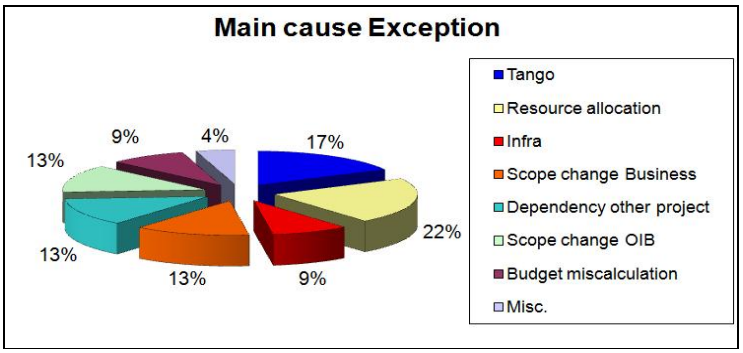


Figure 21: Main causes of handing in Exception Reports

## 7.2 Clarity 8

As mentioned before, Clarity 8 will go live from January 2010. A successful implementation is necessary for its survival. In this section, the main findings about the constructed framework (figure 8) derived from interviews will be discussed. The constructed framework is composed out of three models discussed in the developed theoretical framework (chapter 2) to find out whether or not the new program Clarity 8 will be accepted by its end-users. This section is set up by describing the main findings per group of employees.

### 7.2.1 Team members:

Clarity 8 will be used by team members only to register their working hours for a specific task of a project. Team members have nothing to do with the other features of Clarity 8. In chapter 5.4.1 and chapter 6.4.1 the current situation and the bottlenecks were discussed from the perspective of the team members. It can be noticed that the symbolic adoption of Clarity 8 by team members has nothing to do with the determinants and variables in the constructed framework (figure 8). The reason for this is that it is not relevant for team members in which tool they have to register their working hours. This process takes them approximately 20 minutes a week. So it is a minor part of their job which means that their daily work is not changing at all because of this new program.

### 7.2.2 Project managers:

The implementation of Clarity 8 means a major change in the daily work of project managers. Besides registering their own working hours, they need to monitor the allocated working hours of their team members. The resource allocation and the planning must be processed in Clarity 8. In Clarity 8 the budget can also be monitored in order to stay within its tolerances. A feature is the possibility to print standardized reports. Although project managers are not satisfied about top management's communication, perceptions of external control and e-learning courses, the project managers will

symbolically adopt the new program. The reason for this is because of rumours heard from colleagues (subjective norm) about a successful implementation of Clarity 7 at OIB Belgium and TANGO. Because of these rumours, project managers think that the integration of the three processes in the new program would improve their job performance (perceived usefulness). They see the link between the variables perceived ease of use and perceives usefulness, but do not think that it will be easy to get acquainted with the new program. Their attitude towards the implementation of Clarity 8 is determined by the variable perceived usefulness and not the variable perceived ease of use. Their only worry about the use of Clarity 8 is whether the administrative work increases. This uncertainty among project managers can cause resistance in the future.

### 7.2.3 Line managers:

For line managers the implementation of Clarity 8 means also a major change in their daily work. The two line managers that have been interviewed differ in their opinion about Clarity 8. This may be due to the fact that each of the line managers works for different departments. The first interviewed line manager is not satisfied about top management's communication and the way the training has been organized within a limited time frame. The line manager will definitely accept the new program because the three processes are integrated and this will eliminate many of the manual processes. This symbolic adoption is due to the fact of perceived usefulness that is determined by the job relevance.

The second line manager who has been interviewed is very satisfied about the way Clarity 8 will be implemented. Clear communication from top management and effective training is important for a successful implementation of the new program. The perceptions of external control can be much better because support teams are needed on the work floor which is not the case. The line manager's opinion is influenced by colleagues, the effective training and the fact that Clarity 8 eliminates redundant programs. The link between the two variables perceived usefulness and perceived ease of use is acknowledged by the line manager but he does not think it is the case for Clarity 8 because a lot of effort is needed to get acquainted with it. The attitude of the line manager is really euphoric because the effective training and the clear communication of top management and that is why he will symbolically adopt the new program. A comment is that the perceptions of external control must be improved.

### 7.2.4 Business:

For the Business the implementation of Clarity 8 also means a major change in the daily work. The Business is pleased with the process of implementing Clarity 8. Clear communication from top management, effective trainings and a support team determined the support among employees of the Business about the implementation of the new program. The Change Portfolio Manager thinks that Clarity 8 will improve his job performance. The perceived ease of use is not applicable for Clarity 8 because it is not really intuitive and a lot of effort is needed to get acquainted with it. Because of the integration of the three processes into Clarity 8, the feature of standardized reports, project portfolio and the attitude of the Change Portfolio Manager towards the new program is enthusiastic and it determines the symbolic adoption.

## 7.3 Conclusion

Analyses of the bottlenecks derived from the interviews with the various groups of employees are elaborated in this chapter. A main part of the mentioned bottlenecks in chapter 5 are the result of vagueness of the requirements and budget. A vicious cycle has been composed that represents the main problems within the execution of a project. Unclear requirements and budget lead to a poor analysis of a project and eventually to handing in Exception Reports at the Project Board. This will harm the relationship between OIB and the Business. To restore the damaged relationship it is necessary to break this vicious cycle. The vicious cycle is explained more detailed in figure 22.

Explanation of the vicious cycle

| Problem? | Caused by? | Leads to? | Results in? |
|---|---|---|---|
| Harmed relationship OIB and the Business | Due to an unbalance in the accountability of OIB and the Business. | OIB did not delivered on time or the 'right' product. The Business was vague about requirements and budget. | Results in more projects with indistinctness about requirements and budget. |
| Indistinctness about requirements and budget | Due to harmed relationship between OIB and the Business. | Uncertainty about the deliverables leads to poor analyses of budget allocation, resource planning and time planning. | Results in a poor analysis of a project in the form of a PID. |
| Poor analysis of a project | Due to indistinctness about requirements and budget. | This leads to a poor motivation about the funds needed. | Results in a cut in the budget by the Business. |
| Cut in the budget | Due to a poor analysis of a project. | This means adjustments made in the budget allocation and the time and resource planning. | A delay arises during the execution of the project due to a lack of budget or time because changes made in requirements without detailed impact analyses or a tight time planning. |
| Lack of budget or time | Due to a cut in the budget by the Business. | This means that the project is delayed and cannot meet the deadline. | A lack of budget or time means handing in an Exception Report. |
| Handing in Exception Reports | Due to a lack of budget or time. | Analyzing the project and composing an Exception Report cost a lot of overhead. | This enhances the harmed relationship between OIB and the Business. |

Figure 22: Explanation of the vicious cycle

Furthermore, an analysis is made of the gathered data from interviews in order to test the constructed framework (figure 8). It can be concluded that each group of employees will symbolically adopt the new program Clarity 8 because it will solve a lot of inefficiency that was the result of usage of several tools that have not been synchronized. But still it is necessary to eliminate bottlenecks in order to make the implementation of Clarity 8 a success. Figure 23 is a summary of the opinions of the various groups of employees. Whether the various groups of employees adopt Clarity 8, for what reason this new program will be adopted and what concerns are mentioned are shown in figure 23.

Summary of the opinions of the various groups of employees.

| Groups of employees | Adoption? | Because? | Concerns? |
|---|---|---|---|
| Team Members | Symbolic adoption | Does not matter to them which program to register working hours. | Top management's communication. |
| Project Managers | Symbolic adoption | Enhancement of job performance, rumours heard and successful implementation at TANGO. | Top management's communication, perceptions of external control, and e-learning courses. |
| Line Managers | Symbolic adoption | Elimination of other programs due to integration of three processes. | Perceptions of external control. |
| The Business | Symbolic adoption | Enhancement of job performance. | A lot of effort to get acquainted with Clarity 8. |

Figure 23: Summary of the opinions of the various groups of employees.

# 8. Possible solutions for the bottlenecks

In the previous chapter possible bottlenecks derived from half standardized interviews held with the various groups of employees were analyzed. First, an analysis of the bottlenecks of the three processes was made which resulted in a vicious cycle that represents the main problems that occur in project management. Furthermore in chapter 7 the constructed framework (figure 8) has been analyzed which resulted in the conclusion that every group of employees symbolically adopt the new program Clarity 8 but will keep their concerns with reference to the implementation. By solving the bottlenecks found, the fifth sub question will be answered in this chapter. The set-up of this chapter is as follows: the first part will elaborate on a solution in order to break the bottlenecks that form a vicious cycle so that project management can be executed without running into the same problems each project; the second part will describe other solutions for the remaining bottlenecks derived from interviews; the third part will elaborate on solutions for the bottlenecks of the implementation of Clarity 8.

## 8.1 Solutions project management

From the analyzed bottlenecks in chapter 7, a vicious cycle has been identified that represents the main problems that occur in project management. In order to break this vicious cycle, a lot of reading of literature about project management and informal interviews with employees of ING brought a better insight in solutions that can break this vicious cycle. *"The purpose of project management is to foresee or predict as many of the dangers and problems possible and to plan, organize and control activities so that the project is completed as successfully as possible in spite of all the risks"* (Lock, 1996, p.3). It is an ongoing process that starts before resources are committed and continues until the project is finished. The final result must satisfy the sponsor and the end-user within the promised time frame and within the tolerances of the original budget. Unfortunately this is not always the case in the current situation due to indistinctness about the requirements and the budget. The importance of clear and approved requirements as a starting point for a proper analysis of a project are mentioned by Kezsbom et al., 1989; Lientz & Rea, 1999; Rosenau Jr., 1998. Besides the importance of clear and approved requirements to set the scope of the project, budget approval is necessary to compose a proper budget, time and resource planning. The importance of clear and approved requirements and budget are also mentioned by the various groups of employees (chapter 6.1.2, 6.1.3 and 6.1.4).

In the current situation, the Business approaches OIB and broad ideas are discussed. A project manager will be appointed that is responsible for the further development of the requirements, estimation and allocation of the budget and the time and resource planning. These tasks are handled more or less simultaneously by the project manager. Because the requirements and/or the budget are not approved, a PID is set up as a framework of the project based on a lot of uncertainty. This uncertainty leads to a poor budget, time and resource planning. In chapter 3.3 the process of project management has been described (figure 9). In figure 24 the new set-up of project management for ING's business unit OIB is put in a scheme. To solve the vicious cycle, the assignment of two new roles can play a major role. These two new roles are described into detail, including their task description, to set up a framework in order to prevent misunderstandings. Furthermore the already existing roles of the project manager and the Project Board are described because they are changed due to the incorporation of the two new roles in project management. Potential risks of this new set-up of project management are described because the awareness of potential risks leads to prevention. Finally, cost containment is discussed because overhead and losses can be prevented.

The new set-up of project management for ING's business unit OIB

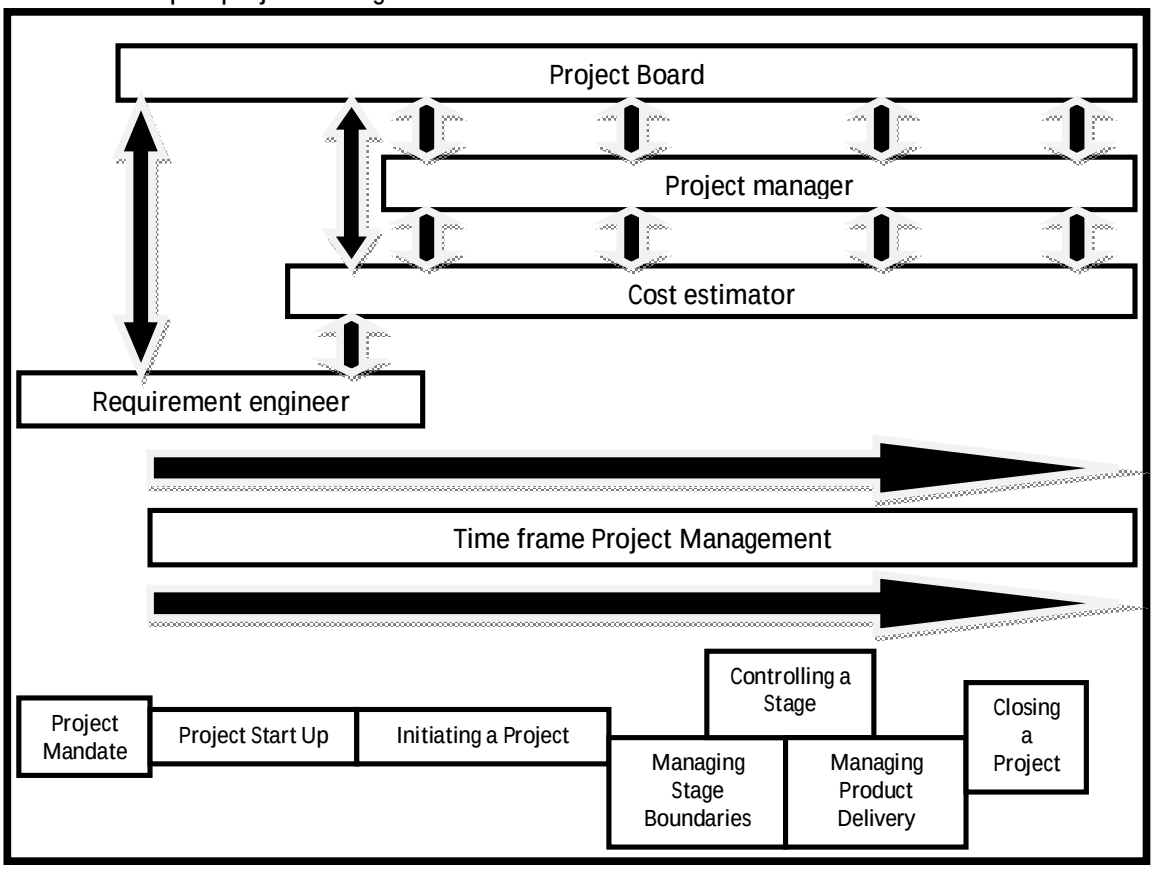


Figure 24: The new set-up of project management for ING's business unit OIB

### 8.1.1 Requirement engineer:

The first role is the assignment of a requirement engineer (Preference Business: chapter 6.1.4). This assignment does not mean that the role should be assigned to an internal employee that currently fulfils another role because it is an occupation by itself. A requirement engineer will relieve the project manager from the burden to set up qualitatively well requirements and is assigned early in the process of project management (preferably Project Mandate). After the requirements are formulated and approved, the requirement engineer is removed out of the project. This means that the requirement engineer can work for different projects simultaneously because he is not tied up to one project. When the Business wants to adjust the requirements, the requirement engineer can be put into action again. It is important that when adjustments are made in the requirements, the time schedule should change as well (Rosenau Jr., 1998, p. 19).

The requirement engineer can solve the damaged relationship between OIB and the Business by on the one hand making clear to OIB what the Business wants and on the other hand making clear to the Business how OIB can fulfil these demands. From informal interviews it became clear that there is a lot of indistinctness between OIB and the Business what really is meant by a requirement. For example: 'security' means different things for different people or in a different context. To a military contracting officer, it may mean a secret classification and to a person working on military software project it may mean data protection (Rosenau Jr., 1998, p. 18). The requirement engineer can take care of getting both OIB and the Business on the same wavelength. In this new set-up of project management, the expectation is that the Project Board will approve the requirements faster. Besides, the Business will not constantly change its mind about the requirements during a project because they are formulated qualitatively well and are approved. This expectation comes from

informal interviews held with project managers. They experienced that when the requirements are qualitatively well, they are approved faster and that the Business will not constantly change its mind about the requirements as easy as in the current situation where the requirements are not approved. This will result in handing in fewer Exception Reports than in the current situation. Budget, time and resource planning can be kept intact.

Task description
The Requirement engineer's prime responsibility is to prepare and manage all activities for obtaining and maintaining an approved and complete set of requirements (Internal Document 16 from Advanced Management System: Key responsibilities of the Requirement engineers, 12-2009). This framework will be the basis for a proper start of the entire process of project management. Literature has shown the importance of clear and approved requirements (chapter 8.1). To achieve clear requirements, the Requirement engineer needs to: deliver an agreed-to requirements management plan; plan and organize a workshop and / or intake with stakeholders in order to start requirements gathering; monitor and control the requirements development process; plan and organize review and validation of requirements; establish requirements baselines, which are the basis for all work performed on the project, at predefined moments; and is responsible for the analysis of proposed changes in approved requirements.

Qualifications:

- good planning and organizing of information gathering;
- being able to quickly analyze, compare, and interpret gathered information;
- accurate judgments based on gathered information;
- focus on details;
- assertiveness and self-confidence in presenting and supporting conclusions; and
- strong communication and interpersonal skills;

### 8.1.2 Cost estimator:

The second role is the assignment of a cost estimator in the process of project management in order to relieve the project manager from a burden, namely setting up an estimation of the total costs of a project. This assignment does not mean that the role should be assigned to an internal employee that currently fulfils another role because it is an occupation by itself. The assignment of the cost estimator can be done almost simultaneously with the assignment of the requirement engineer in order to shorten the time frame of a project. The cost estimator will be involved in the process of project management from the moment he steps in until the project has been finalized. This is necessary because the cost estimator must analyze during the project the actuals with the forecasts. It is important that there is a proper cooperation between the two new roles in order to make this new set-up of project management a success. The cost estimator can start with the estimation of the total costs of a project when the first requirement is qualitatively well formulated and approved by the Project Board. The estimation of the total costs of a project needs to be approved by the Project Board. To eliminate the risk that the estimation does not match the budget of the Project Board which results from the Change MTP, a Change MTP must be a balance of top-down and bottom-up. By involving line managers and cost estimators in the Change MTP, this will reflect the actual state of affairs for the required budget of the new projects of the coming year (Preference of project managers and line managers: 6.1.2 and 6.1.3). This will result in a quicker approval of the estimation by the Project Board given by the cost estimator.

The benefit of the assignment of a cost estimator will be the elimination of the bottleneck mentioned in chapter 5.1.2; namely the overestimation of the total costs of a project by the project manager to have a margin. According to Merchant & Van der Stede (2007): *"paying for performance is an effective motivator which can be seen as a type of control that can be called results control because it*

*involves rewarding employees for generating good results"* (p. 25). But a risk lies in the fact that the project manager in the current situation negotiates a highly achievable target, also called budget slack. It protects the project manager against unforeseen contingencies and improves the probability that the budget target will be met. This means that the chance of receiving a favourable evaluation and the associated performance-dependent rewards is increased (p. 185). In the new set-up of project management the cost estimator will be rewarded according to the accuracy of his estimation with reference to the total costs of a project. In this way, the misplaced result control at the project manager will be solved. A database with historical projects as reference for future projects must be set up as a tool for the cost estimator. Besides, a testing tool is also a helpful tool to come up with a proper estimation of the total costs of a project (Preference of project managers: chapter 6.1.2).

Task description
The cost estimator's prime responsibility is to accurately estimate the total costs associated with the particular project in order to fine-tune the resource and time planning based on this estimation. Accurately forecasting the scope, cost and duration of projects is vital to the survival of any business. Regardless of the industry in which cost estimators work, they obtain all the necessary information about the project to make a bid for a contract. All the data that can influence costs, such as materials, labour, location and duration of the project and computer hardware and software need to be analyzed (Website 5 about cost estimators, 12-2009).

Qualifications:
- being able to quickly analyze, compare, and interpret detailed information;
- accurate judgements;
- focus on details;
- assertiveness and self-confidence in presenting and supporting conclusions;
- strong communication and interpersonal skills;
- knowledge of computers, including word-processing and spreadsheet packages; and
- certification can be valuable for professional recognition of the cost estimator's competence and experience.

### 8.1.3 Project manager:
The project manager can almost simultaneously be assigned to the project as the cost estimator. The reason for this is that the cost estimator and the project manager can fine-tune the estimation by taking the resource and time planning into consideration. It is useful for the cost estimator to be helped by the project manager because of his knowledge about the resource and time planning and of course the other way around. When the project manager and the cost estimator cooperate together, a better cost estimation can be set up which will result in a better resource and time planning. Of course, the cost estimation needs to be approved by the Project Board as mentioned in chapter 8.1.2. The simple reason to assign the project manager after the requirements are formulated by the requirement engineer and approved and the budget is estimated by the cost estimator in cooperation with the project manager, is to relieve the project manager from these burdens and rule out misplaced result controls. Besides, the Business has no possibility to pressure the project manager by starting already with the project before the requirements and the budget are approved. It is no part of his job description anymore. The requirement engineer starts with the requirements and after approval the cost estimator starts estimating the total costs of the project because these are based on the approved requirements. With this new set-up, a proper PID can be composed as a framework for the project.

Task description
The project manager has the overall performance responsibility for managing the scope, cost, schedule and contractual deliverables, which includes applying techniques for planning, tracking,

change control and risk management. The project manager is responsible for the overall direction of the test phase. Furthermore, the project manager is responsible for managing all project resources and for establishing an effective communication plan with the project team and the Business. A day to day direction must be provided to the project team and regular project status to the Business (Internal Document 17 from Advanced Management System: Key responsibilities of the project managers, 12-2009).

Qualifications:

- anticipate potential project related problems;
- utilize refined techniques for identifying, eliminating or containing both technical and business risk;
- analyze new and complex project related problems and create innovative solutions involving finance, scheduling, technology, methodology, tools and solution components;
- lead the project team in developing and implementing solutions;
- demonstrate the required proficiency level for the skills required of the project manager position; and
- guide other professionals.

### 8.1.4 Project Board:

The Project Board's role will not change in the new set-up of project management. A Project Board is still responsible for the overall direction and management of the project and has responsibility and authority for the project within the remit (the mandate) set by corporate or programme management (Internal Document 18 from Advanced Management System: Project Board, 11-2009). The success of the new set-up of project management is determined by the approval of the requirements and the budget by the Project Board. The Project Board should not neglect this importance when being pressured by the Business. The expectation is that due to the new set-up of project management, the Project Board will approve the qualitatively well requirements and the more accurate estimation faster. A margin can be incorporated in the estimation given by the cost estimator and the project manager, but this must be done by the Project Board in order to rule out risks such as a too high margin. The Project Board generally reports to a higher level Governance Board. A Project Board represents those senior line managers who have a major interest in the project and who will be the key stakeholders. All key stakeholders supply the top level commitment to the resources, timescales and impact of change that will be involved. The Project Board consists of three roles: Executive, Senior User and Senior Supplier. All roles must be present in the Project Board.

Task description

The Executive is the single individual with overall responsibility for ensuring that a project meets its objectives and delivers the projected benefits. Normally the person who is the Executive is the chairman of the Project Board. The Senior User is accountable for ensuring that user needs are specified correctly and that the solution meets those needs. The Senior Supplier is the Project Board role that provides knowledge and experience of the main disciplines involved in the production of the project's deliverable(s).

The key responsibilities of a Project Board include:

- approving all major project governance documents and authorizing major deviations from plans;
- ensuring that there are adequate resources and commitment;
- deciding on priorities and issues that cannot be decided/resolved by the project manager and assisting in their resolution;
- monitoring the progress, major deliverables and costs of the project; and

- ensuring that the project continues to stay on course to deliver products to meet the business case defined in the PID.

### 8.1.5 Risks:

1. The first risk is that there is no optimal cooperation between the requirement engineer and the cost estimator. In order for an approval of the requirements and the budget, an optimal cooperation is necessary. A project manager will analyze the project based on the results of the two new identified roles.
2. The second risk is that there is no optimal cooperation between the cost estimator and the project manager. After the requirements are approved, the cost estimator and the project manager must work together to set up an accurate estimation of the total costs of the project. This estimation must be approved by the Project Board. Simultaneously, the resource and time planning can be composed. This will result in a properly composed PID.
3. The third risk is that the project manager does not accept his new role. By the introduction of the two new roles, the responsibilities of the project manager are reduced. The project manager has to settle with his new role.
4. The fourth risk lies in the assignment of the two new roles. These roles are an occupation by themselves. This means that an architect cannot be a cost estimator just for the time being. These new persons need to be attracted externally or trained internally.
5. The fifth risk lies in the involvement of the different roles in the process of project management. Of course it is possible to involve a requirement engineer in a later stadium, but the risk lies in the fact that the requirement engineer has no complete view of the problem of the Business. The ideal situation is to involve the requirement engineer right from the start (Project Mandate). Another risk lies in the assignment of a project manager before there is a cost estimator assigned to the project. Based on the estimation of the total costs of the project the resource and time planning can be composed. To compose an estimation based on the resource and time planning can result in an estimation that is higher than the initial budget derived from the Change MTP. The ideal situation is a proper cooperation between the cost estimator and the project manager in order to fine-tune the cost estimation and set up the resource and time planning.
6. The disapproval of an estimation of the total costs of a project given by the cost estimator because it does not match the budget from the Change MTP. This can be solved by composing a Change MTP that is a balance between bottom-up and top-down. The expectation is that the estimation will be approved faster because it matches the initial budget derived from the Change MTP.
7. It is hard for the Project Board to control what margin is incorporated by the cost estimator. A margin is necessary in order to prevent that the project manager is handing in an Exception Report in an early stadium. The risk that the cost estimator incorporates a margin that is too high can be ruled out by making it a responsibility of the Project Board.

### 8.1.6 Cost containment:

Handing in an Exception Report in the current situation needs a thorough analysis by the project manager. Then the Project Board needs to analyze the Exception Report and decide whether or not to accommodate the request or reconsider continuation of the project. With the new set-up of project management mentioned in chapter 8.1, the expectation is that due to clear and approved requirements and budget a proper analysis of the project can be made which will lead to a PID based on certainty. The result is that overhead can be saved because fewer Exception Reports are handed in by the project manager at the Project Board. In chapter 7.1.6 the main causes of handing in Exception Reports were discussed. By decreasing the chance of handing in Exception Reports, money is saved on overhead. Hours spend for reviewing the budget and resource planning by the project manager and the cost estimator are saved. Hours spend by the Project Board for analyzing the

Exception Report and deciding whether the project is still profitable are saved. Besides, project managers experienced that the Business will not change constantly its mind about the requirements during a project because they are formulated qualitatively well and are approved. This will also lead to fewer Exception Reports.

But perhaps a bigger save can be made by deciding in an early stadium whether or not to continue with a project after it is analyzed and before any resources are allocated to the various tasks. By setting up clear requirements a better estimation of the total costs can be made. The Project Board can decide in an early stadium if the project is profitable based on detailed information derived from clear requirements. Projects that are doomed to fail can be shut down in an early stadium in order to prevent major losses. When projects start with vague requirements, the cost estimation cannot be accurate which means that it is hard to find out if the project is profitable. When during the project an Exception Report is handed in for more budget, and the Project Board analyzed that the project is not profitable, a lot of losses are made that could be prevented.

## 8.2 Remaining solutions after analysis of project management

In the previous section a solution has been discussed in order to solve the vicious cycle mentioned in chapter 7.1. The solution has been found and motivated through literature, but also informal interviews have been held with various employees of ING that took place during a coffee-break. The vicious cycle was a cause of several main bottlenecks that has been found in the three processes budget allocation, resource planning and registration of working hours. These are important processes of project management. Solutions for the remaining bottlenecks after analysis of the three processes are discussed in this section.

### 8.2.1 Budget allocation:

A bottleneck in the process of budget allocation, resource planning and registration of working hours is that there are too many tools for processing all acquired data. Besides the use of PIT for registration of working hours, line managers and project managers also use e-profit and Microsoft Excel/Projects for resource planning and budget allocation. There is no standardization for processing data of these processes. The main problem with these different tools is that they are not synchronized, although this is a preference of the project managers and the line managers (chapter 6.1.2 and 6.1.3). This problem will be solved with the implementation of Clarity 8 that will substitute the mentioned tools. The importance of Clarity's success lies in its usage. Top management should guide end-users step by step so that they will not fall back on the previous tools.

### 8.2.2 Resource planning:

A mentioned bottleneck (chapter 5.2.1) by the team members is that there is no feedback given by the project managers in the Project Close Up with reference to skills, techniques and methods used. Team members see this feedback as an important preference because it can help them to develop their competences (chapter 6.2.1). This is a guideline in AMS (chapter 3.9) but not followed by the project managers (chapter 5.2.2). By making the importance of giving feedback aware by project managers, this guideline of AMS can be followed. Guidance of project managers in project management can contribute to observation of top management's guidelines.

Another mentioned bottleneck (chapter 5.2.2 and 5.2.3) is the slow process of RAM. A solution is to make less use of RAM by setting up a database where all the skills of the different employees are kept up-to-date. This information is derived from feedback given by project managers to team members in the Project Close Up. This database will make it possible to find internal employees faster. In an organization of the size of ING there are more architects than in the subunit Business Lending & Support Services. By limiting the use of RAM and setting up a database, internal resources can be found faster, which means less chance of delay of the project due to resource planning. When

the founded resource is not available due to commitment to another project, priority setting of the projects is necessary in order to prevent delay of strategic important projects. By using internal resources, the expectation is that the commitment for a particular project will be higher than making use of an external resource (chapter 5.2.3). One preference of project managers (chapter 6.2.2) is that such a database must not go at the expense of the social network that is an important tool within ING to acquire resources. This database will be a feature of the new program Clarity 8 (chapter 3.1.1).

A final preference of line managers and the Business with reference to resource planning is that there must be a link between the allocation of a task to a resource and the allocated working hours to that particular task (chapter 6.2.3 and 6.2.4). This is necessary to monitor the progress made by the resource with reference to the task. An option will be to make it a possibility in Clarity 8. This will make it easier for the project manager to anticipate when for example 75% of the reserved working hours are allocated to a task and this task is on 50%.

### 8.2.3 Registration of working hours:

Two mentioned bottlenecks in the process of registration of working hours is a lack of feedback (chapter 5.3.1 and 5.3.2) and the integration with other tools (chapter 5.3.2 and 5.3.3). In the processes budget allocation and resource planning, these two bottlenecks were also handled. Feedback is necessary to make the interrelationship of the three processes aware and integration with other tool is necessary to eliminate paperwork.

The remaining bottlenecks of the process registration of working hours; easily making mistakes and no totals in PIT (chapter 5.3.1), user-unfriendly tool (chapter 5.3.2; 5.3.3 and 5.3.4), mismatch actuals with forecasts and hard to make an analysis (chapter 5.3.2), no guidance in PIT (chapter 5.3.3), hard to restore errors and authorization for everyone (chapter 5.3.4) will be eliminated when Clarity 8 will go live. The only thing that needs to be taken care of is to provide guidance for the end-users. This can be achieved by providing a clear manual, effective training and support teams.

## 8.3 Solutions implementation of Clarity 8

Chapter 5.4 has described all the bottlenecks with reference to the implementation of Clarity 8 that were derived from interviews with the various groups of employees. In chapter 7.2 the constructed framework (figure 8) has been analyzed in order to find out whether the new mandated program Clarity 8 will be accepted by its end-users. Although there are many bottlenecks in the process of implementing Clarity 8, it will be voluntarily accepted by its end-users. But to have a successful implementation, these bottlenecks must be solved. A mentioned bottleneck is the importance of standardized reports. At every level of the organization this must be standardized in order to make it a success. This will eliminate the discussion about deflection of the figures because every level has the same report. This feature will contribute to the success of Clarity 8. The use of this feature is also a preference of the various groups of employees (chapter 6.4.2; 6.4.3 and 6.4.4).

In order to ensure a successful implementation, critical success factors must be taken into consideration according to Nah et al. (2001) and Umble et al. (2003). Effective training, clear manuals, support teams and clear communication between top management and the end-users are important (chapter 2.5.1). The bottleneck that there is hardly any communication between top management and employees is mentioned by team members (chapter 5.4.1), project managers (chapter 5.4.2) and line managers (chapter 5.4.3). This is a critical point that must be taken into consideration by top management. The end-users can be kept up-to-date about the progress made in the implementation of Clarity 8. Another possibility would be to keep a survey among the end-users before the process of implementation would start in order to find out what the end-users' preferences would be. End-users will then participate in the design and decision process (degree of

participation) and have the feeling that top management is considering their preferences. Besides, end-users want to see a clear end vision of top management and know what the impact will be on their job. In order to prevent resistance among end-users, top management must communicate these three mentioned factors (chapter 2.6) of Bouwman et al. (2005).

## 8.4 Discussion

A solution (chapter 8.1) is provided for breaking the vicious cycle of chapter 7.1 with reference to project management. Another possible solution has been found for this vicious cycle, but from informal interviews it became clear that employees do not see this possible solution feasible in times of worldwide economic crises and the separation of Banking and Insurance of ING (Website 6 about separation Banking and Insurance of ING, 12-2009). Perhaps not feasible in the current economic situation, but when the economy is improved in the future this possible solution can lead to a mature and perhaps independent entity. This section will describe the possible solution in order to create a discussion that can be interesting because it can break the vicious cycle (chapter 7.1) and lead to maturity of OIB. Maturity means that OIB can escape from the pressure of the Business and can decide whether or not to accept a project. The Business will be forced to make the requirements and the budget clear.

The Business is not providing requirements and a budget which means OIB cannot deliver the product in time due to these uncertainties. There is a damaged relationship between OIB and the Business. In order to obtain the requirements and the budget from the Business, OIB can switch from a cost centre to a profit centre. According to Merchant & Van der Stede (2007), a cost centre is *"a responsibility centre whose managers are held accountable for some elements of costs"* (p. 273). A profit centre is *"a responsibility centre whose managers are held accountable for profit, which is a measure of the difference between the revenues generated and the costs of generating those revenues"* (p. 272). The Business sees OIB as a cost centre, costs are kept very low by providing a minimum budget which is derived from the Change MTP. Regardless of the salary scale of an OIB employee, currently a standard rate is agreed with the Business. Requirements are not made clear which means there is an unbalance in the accountability of the Business and OIB. When a project fails, OIB is the one to blame because it did not meet the deadline, did not stay within the budget or did not deliver the 'right' product. And OIB accepts the current situation while many projects go through the vicious cycle mentioned in chapter 7.1.

On the one hand, by switching over to a profit centre, OIB will not have to charge a fixed rate per employee. It will be free to charge the rate that fits the value of an employee. The expectation is that the Business will make the requirements and the budget clear for delivering the product because it will cost the Business much more when a delay occurs. Besides, OIB can take up a position as a mature organization and reject projects that are not profitable or unclear due to vague requirements. On the other hand, OIB will need account managers to obtain clients in order to have enough project. Being a profit centre can eventually lead to a separation of OIB from ING in order to be an independent entity. OIB needs to be more efficient in order to win the struggle with competitors because the Business will be free to choose their supplier. Being more efficient means discharging employees that are redundant.

## 8.5 Conclusion

The fifth sub question is the subject in this chapter where solutions have been described for the bottlenecks found in chapter 5. This chapter started with a solution for the vicious cycle from chapter 7.1 where a pattern of the bottlenecks of the three processes of project management is found. This solution describes how the new set-up of project management should be in order to break the vicious cycle. Two new roles are incorporated, namely a requirement engineer and a cost estimator. These two new roles are important in order to relieve the project manager from pressure of the

Business. The two new roles, the reduced job description of the project manager and the Project Board's role are described in figure 25. This new set-up of project management will lead to a better execution of a project. By assigning a requirement engineer that is responsible for formulating clear requirements that need to be approved by the Project Board, the cost estimator can estimate the total costs of the project more accurate. The project manager can compose the time and resource planning in cooperation with the cost estimator. A smaller chance on a lack of budget or time which means fewer Exception Reports are handed in at the Project Board. Savings can be made on overhead due to fewer Exception Reports and after analysis of the project, before any resources are committed, it can be decided whether or not to continue with the project. Potential risks must be taken into consideration in order to execute the project well. When the potential risks are ruled out, the two new roles are incorporated in project management and every role keeps to its task description, the new set-up of project management for OIB can be realized.

Overview of the new set-up of project management for ING's business unit OIB

| | Tasks | Results | Potential risks |
|---|---|---|---|
| Requirement engineer | • Formulating clear requirements.<br>• Can put into action again when the Business wants to change the requirements. | • Results in faster approval of requirements which leads to savings on overhead and prevention of losses.<br>• Relieves the project manager from pressure. | • No optimal cooperation with cost estimator.<br>• Occupation by itself, so attracted externally or trained internally.<br>• Involving the requirement engineer too late. |
| Cost estimator | • Setting up a cost estimation.<br>• Analyzing actuals-forecasts. | • Elimination of bottleneck of overestimation by project manager.<br>• Relieves the project manager from pressure. | • No optimal cooperation with project manager.<br>• Occupation by itself, so attracted externally or trained internally. |
| Project manager | • In cooperation with cost estimator setting up resource and time planning.<br>• Managing the project. | • Will result in less pressure from the Business due to separation of responsibilities. | • Project manager does not accept his new role |
| Project Board | • Overall control.<br>• Approving documents. | • A balance in the Change MTP results in a budget that matches the cost estimation of a project.<br>• Incorporating margin eliminates bottleneck of project manager/cost estimator. | • Not approving the requirements.<br>• Not approving the budget.<br>• Not incorporating a margin in the cost estimation. |

Figure 25: Summary of the new set-up of project management for ING's business unit OIB

Solutions for the remaining bottlenecks after the three processes were analyzed are mentioned in this chapter. These are small bottlenecks that raise a lot of frustration among the various groups of employees. For example the slow process of RAM results in a delay in the project or less commitment because the resource is externally acquired. A possibility is to make less use of RAM by setting up a database from data acquired in the Project Close Up. Feedback needs to be given by the project managers to the team members with reference to the skills, methodologies and techniques used during the project. Team members can develop their competences and by storing this data, a project manager can find an internal resource more easily. This will lead to less delay of a project by

finding the required resource faster and more commitment is created. By making this a feature of Clarity 8, the use of several programs will be prevented. This example and the remaining solutions are shown in an overview (figure 26). This overview is meant to create the awareness of the remaining bottlenecks after the three processes have been analyzed and how they can be solved. By solving these remaining bottlenecks a lot of frustration among the various groups of employees can be eliminated.

Overview of the remaining solutions after the three processes have been analyzed

| Processes | Bottleneck? | Results in? | Solved by? |
|---|---|---|---|
| Budget allocation | All different kinds of tools that are not synchronized for processing data. | A lot of paperwork, every level handling data on its own way. | Solved by the implementation of Clarity 8 because of the integration of the three processes. This means when one change is made in one of the three processes, this will be synchronized with the other two processes. |
| Resource planning | A lack of giving feedback to team members with reference to skills, methodologies and techniques used during project. | Hard for the team members to develop competences. | Guidance of project managers in project management will lead to one way of working of all project managers. |
| | Slow process of RAM. | Delay of a project by less commitment of an external resource or not finding this required resource . | Feedback from project managers in Project Close Up using to set up a database in order to find the required resource internally. Make it a feature of Clarity 8. |
| | Hard to monitor the progress made by a resource with reference to a certain task. | Anticipating too late by the project manager when things go wrong. | Solving it by making it a feature in Clarity 8. Project managers can anticipate in an early stadium. |
| Registration of working hours | Easily making mistakes and no totals in PIT, user-unfriendly tool, mismatch actuals with forecasts and hard to make an analysis, no guidance in PIT, hard to restore errors and authorization for everyone. | Small bottlenecks that raise frustration among the various groups of employees. | These bottlenecks will be eliminated by the implementation of Clarity 8. |

Figure 26: Overview of the remaining solutions in the three processes

Finally, Clarity 8 needs to be implemented successfully in order to maintain the integration of the three processes budget allocation, resource planning and registration of working hours. Especially some bottlenecks of the implementation of Clarity 8 need to be solved in order to make this new program a success. The mentioned factors clear end vision of top management, impact on end-users' job and degree of participation of chapter 2.6 need to be communicated towards end-users in order to prevent resistance among them. Effective training, clear manuals and support teams can help overcome hurdles when Clarity 8 goes live. Figure 27 is an overview of the solutions of the bottlenecks in the implementation of Clarity 8. Furthermore, the overview presents by which group of employees the bottlenecks are mentioned and how these bottlenecks can be solved. This overview must create awareness among top managers how to solve problems end-users run into, even though the solutions seem obvious and simple. But still, the mentioned solutions must be realized in order to make the implementation of Clarity 8 a success and eliminate frustration among end-users.

Overview of solutions of the bottlenecks with reference to the implementation of Clarity 8

| Bottlenecks implementation Clarity 8 | Mentioned by? | How to solve the bottlenecks of Clarity 8? |
|---|---|---|
| No communication top management / employees. | Team members, Project managers, Line managers. | Keep end-users up-to-date. Make use of a survey. |
| Uncertainty about impact on job. | Project managers, Line managers. | Effective training, support teams, clear manuals. |
| Lack of clear vision top management. | Project managers. | Clear communication from top management. |
| Lack of support on the work floor. | Project managers, Line managers. | Place support teams on the work floor for guidance of end-users in order to overcome hurdles . |
| Importance of standardized reports. | Line managers, The Business. | Top management must give the right example. |
| Lack of project portfolio. | Line managers. | Assign an employee that has this responsibility. |

Figure 27: Overview of solutions of the bottlenecks with reference to the implementation of Clarity 8

# 9. Recommendations and conclusion

This research started with a research plan where the subject of this thesis has been discussed. A main research question and several sub questions served as foundation for literature study. A theoretical framework derived from the literature study has been composed that served as a guidance through this research. During this research the several sub questions have been answered in order to come up with an answer for the main research question. In this chapter the final sub question will be discussed where the recommendations based on the findings of this research are given. The recommendations are addressed to top managers of OIB because they will be able to organize the new set-up project management. This section is divided into three parts: the first part is based on the vicious cycle of figure 5; the second part is based on the remaining bottlenecks of the three processes; the third part is based on the implementation of Clarity 8. A final conclusion based on the answering of the sub questions will answer the main research question formulated in the research plan. In order to complete this research, the limitations of this research and suggestions for future research will be mentioned and finally a reflection will be given.

## 9.1 Recommendations

The recommendations are the result of describing in chapter 4 how the three processes are put into practice and how the implementation of Clarity 8 is seen by the various groups of employees. In chapter 5 bottlenecks have been derived in order to analyze them in chapter 7. In chapter 6 the preferences have been mentioned that were needed in order to solve the bottlenecks in chapter 8. This section mentions the recommendations based on the findings in the previous chapters. The first part of the recommendations is based on solving the vicious cycle of chapter 7.1; the second part is based on the remaining bottlenecks of the three processes; the final part is based on the implementation of Clarity 8.

### 9.1.1 Recommendations project management:

In chapter 8.1 the solution for breaking the vicious cycle of chapter 7.1 has been described in-depth. Recommendations based on this solution will be given step by step.

1. Assign a requirement engineer that is only responsible for formulating qualitatively well requirements. These requirements need to be approved by the Project Board. When during a project the Business wants to make changes, the requirement engineer can put into action again. This person needs to be trained internally or acquired externally. The new set-up of project management will fail when this important process is not executed well.
2. Assign a cost estimator that is responsible for an accurate estimation of the total costs of a project. The bonus of the cost estimator is based on the accuracy of his estimation. The estimation must be composed in cooperation with the project manager and approved by the Project Board. The cost estimator will remain active in the process of project management in order to make analyses of the actuals compared to the forecasts. This person needs to be trained internally or acquired externally. A necessary tool is to set up a database where historical projects can be stored, including the Lessons Learned Log so that project managers can use this data as a reference for future projects. Besides, a testing tool for cost estimation is also necessary to verify for example the estimations of the required working hours for a certain task given by team members. The new set-up of project management will fail when this important process is not executed well.
3. The project manager will fulfil a new role with less responsibility because of the assignment of the two new roles in project management. Still, the project manager stays responsible for the execution of the project. This will lead to less pressure from the Business because there is a separation in formulating requirements, composing a cost estimation and managing a project. It is important that the project manager settles with his new role in order to make the new set-up of project management a success.

4. The Project Board has the same responsibility in the new set-up of project management as in the current situation. The Project Board must understand the importance of approving the budget and the requirements in order to execute a project well. But in the new set-up the Project Board is responsible for incorporating a margin in the cost estimation in order to prevent that Exception Reports are handed in when there is a relatively small deflection in the actuals compared to the forecasts.
5. A Change MTP must be composed with a balance in top-down and bottom-up. This will lead to a more accurate Change MTP that gives the actual state of affairs. Without a balance of top-down and bottom-up in a Change MTP, the risk of disapproval of a cost estimation cannot be ruled out. That is why top managers of OIB need to understand that in order to compose a Change MTP that reflects the actual state of affairs, project and line managers need to be consulted.
6. When an Exception Report is handed in at the Project Board for more budget or to postpone the deadline, a detailed impact analysis is necessary. The Project Board, the Business, the project manager and the two new roles need to understand that without a detailed impact analysis it is impossible to find out whether or not the project is still profitable.
7. It is important to create support for this new set-up of project management. That is why successful projects need to be awarded. This will create the awareness among the two new roles, the Business, the Project Board, project managers and team members that clear and approved requirements and budget are necessary to execute the process of project management in a proper way. This will restore the damaged relationship between OIB and the Business.

### 9.1.2 Remaining recommendations after analysis of project management:

In chapter 8.2 the remaining bottlenecks of the three processes have been mentioned that needed to be solved. Based on the mentioned solutions, this section describes the recommendations for the remaining bottlenecks.

1. The project managers of the business unit Business Lending need to be guided in project management in order to know how to manage a project. Certification of a project manager would prove very helpful for everyone and will lead to an execution of a project in a proper way. Project managers will learn how to handle in a certain situation, when to use which template for an approval and will follow the right procedures.
2. Feedback is an important preference because it creates the awareness among team members what the impact will be of their actions and reveal the interrelationship of the three processes. The project managers should give feedback with reference to the registration of working hours and show the impact on the resource planning and budget allocation. Besides, giving feedback to team members in Project Close Up is necessary in order to develop their competences.
3. A database must be set up with reference to the skills of the various employees. A simple search by the project manager will make it easier to find the right internal resource. This means that less use will be made of RAM in order to prevent a delay due to the slow process of this support desk. When the resource is not available due to commitment of another project, priority setting of the projects is necessary in order to prevent delay of strategically important projects. This search for resources should not go at the expense of the social network of ING's employees.

### 9.1.3 Recommendations of implementation Clarity 8:

In chapter 8.3 the bottlenecks of the implementation of Clarity 8 have been mentioned that needed to be solved. Based on the mentioned solutions, this section describes the recommendations for the implementation of Clarity 8.

1. The constructed framework (figure 8) tested the symbolic adoption of Clarity 8 by its end-users. Although this new mandated program is accepted by its end-users, the chance of a successful implementation would be higher if before the implementation process started a survey among the end-users would be kept. But still, it is possible by keeping a survey among the end-users after Clarity 8 goes live. This survey will provide top management insight in the hurdles of the first few weeks and important preferences of the end-users. Because of this insight in hurdles, top management can fine-tune Clarity 8 to the preferences of the end-users. This is an important process that needs to be executed in order to profit from all the benefits of Clarity 8.
2. In the theoretical framework (chapter 2.5.1) critical success factors were mentioned for a successful implementation of Clarity 8. A starting point is to improve the communication between top management and the various groups of employees. This can be achieved by informing the employees about the progress made of implementation process. Besides a clear communication, effective training, clear manuals and support teams on the work floor are necessary to help the employees overcome the hurdles in the first few weeks after Clarity 8 goes live. An important point is to guide new employees depending on their role.
3. It is necessary to create the feature in Clarity 8 that will show a link between the allocation of a task to a resource and the allocated working hours to that particular task. This is necessary to monitor the progress made by the resource with reference to the task. An option will be to make it a possibility in Clarity 8.
4. A feature of Clarity 8 is the possibility to make use of standardized reports. This use of this feature is necessary for the success of Clarity 8. Top management should give the right example by also using this standardized tool or else the risk lies in the fact that line managers and project managers fall back on the old tools.

## 9.2 Conclusion

Several sub questions have been formulated and answered in order to answer the following main research question:

*Investigate and analyze the three processes of project management in order to solve bottlenecks so that they can be integrated as one process in Clarity 8, matching employees' preferences?*

This research started with a research plan in chapter 1 and a developed theoretical framework in chapter 2. The first sub question was discussed in chapter 3 in order to describe the interaction of the three processes with Clarity 8 and project management from the perspective of top management. The main finding was that the project manager is the key figure in project management in the current situation. The second sub question was discussed in chapter 4 in order to find out how the various groups of employees experience the interaction with the three processes and the implementation of Clarity 8 in the current situation. In chapter 5 the third sub question was answered in order to describe the bottlenecks derived from interviews held with the various groups of employees. Chapter 6 has described the fourth sub question; the preferences of the various groups of employees. Mainly these groups are involved in project management and are the end-users of Clarity 8. In chapter 7 the bottlenecks have been analyzed in order to find a pattern and the origin of the problems OIB and the Business run into when executing a project. This is the basis for the fifth sub question which is answered in chapter 8. A solution has been described in order to break the pattern found in the form of a vicious cycle. Also the remaining bottlenecks in the three processes and the implementation of Clarity 8 have been solved. Chapter 9 is used to answer the final sub question in order to formulate clear recommendations. In the following sections the conclusions are given with reference to the solutions of the bottlenecks in the three processes of project management, the solutions of the remaining bottlenecks after analysis of project management and the solutions of the bottlenecks in the implementation of Clarity 8.

### 9.2.1 Conclusion of project management:

When the bottlenecks derived from the interviews with the various groups of employees have been described and analyzed, a conclusion was that due to the indistinctness about the requirements and the budget a lot of bottlenecks arose in project management. The three processes budget allocation, resource planning and registration of working hours are important for the execution of a project. A main point was to solve this issue of vague requirements and budget. It was important to take potential risks into consideration and rule them out in order to have a solution based on strong arguments. The solution is to organize the process of project management with reference to the assignment of two new roles, namely a requirement engineer and a cost estimator. The motivation of this new set-up of project management is to relieve the project manager from the pressure of the Business. The two new roles will take over some of the responsibilities of the project manager, namely the formulation of qualitatively well requirements and the cost estimation. The approval of qualitatively well requirements and the budget will result in fewer Exception Reports. A potential risk lies in the approval of the cost estimation. To ensure the approval of the cost estimation, it is important to have a balance from top-down and bottom-up in composing a Change MTP. This preference is mentioned by line managers and the Business because they experience in the current situation that this is not the case. By ensuring the approval of the budget and the requirements, money can be saved on overhead because handing in an Exception Report costs a lot of working hours by the project manager and the Project Board. But a bigger save can be achieved after the requirements and the cost estimation are made clear. The Project Board can decide in an early stadium whether it is still profitable to continue with a project. Major losses can be prevented.

### 9.2.2 Remaining conclusion after analysis of project management:

An important point of improvement is to guide project managers better in project management. This can be achieved by certifying them in order to have one way of working instead of different approaches of projects by different project managers. A preference mentioned by team members is the need for feedback. Team members can develop their competences when project managers give feedback with reference to skills, methodologies and techniques used. This information can also be stored in a database that will serve for a better search of internal resources. Besides, Project managers must also give feedback to team members during projects in order to emphasize the interrelationship of the three processes. This will create the awareness among team members that a certain action will have its impact on the three processes. A database to store information of historical projects is also necessary for a reference of future projects. For instance, the Lessons Learned Log can be kept up-to-date and stored in this database so that project managers can exchange experiences and learn from each other.

### 9.2.3 Conclusion of implementation of Clarity 8:

A constructed framework was composed in order to find out if the new mandated program Clarity 8 would be voluntarily accepted by the end-users of the OIB's business unit Business Lending. Although there are many bottlenecks in the process of implementation, the end-users will accept this new mandated program because one of their preferences was to eliminate other programs. This will be achieved due to the integration of the three processes budget allocation, resource planning and registration of working hours. To ensure the elimination of other programs, the use of standardized reports is necessary. The use of this feature is necessary for the success of Clarity 8. Top management should give the right example by also using this standardized tool without accepting reports in other templates or else the risk lies in the fact that line managers and project managers fall back on the old tools. To overcome hurdles after Clarity 8 goes live, the various groups of employees prefer improvement of top management's communication. A clear end vision of top management, the impact of this change on end-users' job and the participation degree of end-users are key elements to take into consideration to prevent resistance. A survey among the end-users after Clarity 8 goes live can contribute to overcome hurdles. Besides, effective training, clear manuals and

support teams are important to get acquainted with Clarity 8 and overcome hurdles. A final preference of line managers and the Business with reference resource planning is to that there must be a link between the tasks that are allocated to resources and the reserved hours for these tasks in order to monitor the progress made by the resources. A solution is to make it a feature in Clarity 8.

## 9.3 Limitations

Although the research is set up and executed in order to give this thesis a scientific basis, limitations always occur. In this section the limitations and the possibilities for future research are discussed.

1. Although the respondents of the interviews were very open in answering the questions and the analysis made according to these interviews is well-founded, a limitation in this research is that I was not part of a project team for the duration of a project. In my opinion, if I would have experienced the entire process of project management, it would have given me a better insight of the issues concerning project management. This could lead to a more innovative solution to break the vicious cycle mentioned in chapter 7.1.
2. Although the concept 'experience' was incorporated in the constructed framework (figure 8), this concept was not tested due to the fact of that during interviews it became clear that most of the respondents had not followed a training yet. The idea was to find out whether or not the end-user is still impressionable by people who are important to him after he gained experience with the new technology and to find out what the effect of experience is on the degree to which a person believes that using the new technology would be free of effort.
3. A final limitation is the fact that I am a student with limited experience in interviewing respondents and making analyses in practice. Throughout the research I have experienced that the interviews became more interactive which led to the fact that respondents were more willing to answer straightforward. During this research the analyses became more and more brief but not at the expense of the quality.

## 9.4 Future research

During this research several points have been found that need more research in order to make a well-considered decision for the implementation of the new set-up of successful project management and maintaining the existence of Clarity 8. Top management can give order to investigate the following points more in-depth.

1. In the new set-up of project management, two new roles are incorporated, namely a requirement engineer and a cost estimator. In order to find out whether or not the costs of assigning these two new roles to project management will outweigh the benefits of handing in fewer Exception Reports, research is necessary. The idea behind this research is that top management can be convinced quicker with quantitative data so that the new set-up of project management for OIB can be realized.
2. The new set-up of project management is elaborated in-depth and a discussion is introduced for a possible solution. This possible solution can lead to a mature and perhaps independent entity. Future research can investigate whether or not a combination of the new set-up of project management and switching over to a profit centre is feasible and profitable. Such research can be helpful to convince top management to make OIB more efficient than it ever has been.
3. Even though Clarity 8 has many benefits, it can fail when the end-users are resisting to make optimal use of the program. That is why it is important to find out what hurdles the end-users run into and whether or not they have preferences after Clarity 8 goes live. To take these hurdles and preferences into consideration, future research is necessary. A survey can be held among the end-users. The importance of this survey should not be neglected by top management, because the outcome can be used to fine-tune Clarity 8 in order to take full advantage of the possibilities of this new program.

## 9.5 Reflection

To finalize this thesis, this section will be used to reflect on the execution of this research and whether or not the objectives are met . When I was assigned to the vacancy at ING Amsterdam to do research about a certain subject, the objective was vague. The assignment consisted of three subjects, but after consulting my supervisor Mr. Kelders, we chose for a combination of doing research about the three processes of project management and the implementation process of Clarity 8. I started with a research plan in order to frame the research. In the theoretical framework I have incorporated guidelines about the three processes from the internal database of ING because these processes are important for executing a project. Furthermore I have also incorporated three different theoretical models in order to compose a constructed framework for testing the symbolic adoption by the end-users of Clarity 8. These models are adopted from Nah et al. (2004), Venkatesh (2000) and Venkatesh & Davis (2000). The objectives of this research kept me going straightforward.

The objectives of this research were:

- describe the new program Clarity 8 where the three processes will be integrated in;
- describe the relationship of these three processes with reference to project management from top management's perspective;
- define in the current situation the interaction of these three processes with reference to project management from employees' perspective;
- give the preferences of the various groups of employees with reference to the three processes and the implementation of Clarity;
- make an analysis of the current bottlenecks of the selected processes and the implementation of Clarity 8; and
- give recommendations to solve those bottlenecks.

When the theoretical framework was completed, I have consulted the internal database of ING in order to describe the interaction of the three processes with the project management. Formal and informal interviews with the various groups of employees have given me a lot of information which needed processing. After describing the current situation, the bottlenecks and the preferences, an analysis was the next step. I received a lot of positive feedback from informal interviews when the vicious cycle was discussed. Everyone I have spoken with confirmed my findings. I have struggled a long time to come up with a clear solution for this main issue because it seemed very obvious how to solve it from my perspective. Exchanging ideas about this issue gave me the insight how to solve it by applying out-of-the box thinking. Again, from informal interviews I have received positive feedback. At the end, it was just a matter of writing down my findings and formulate proper recommendations and a clear conclusion. This reflection is a confirmation that I have achieved the objectives of this research and could be proud of the final result.

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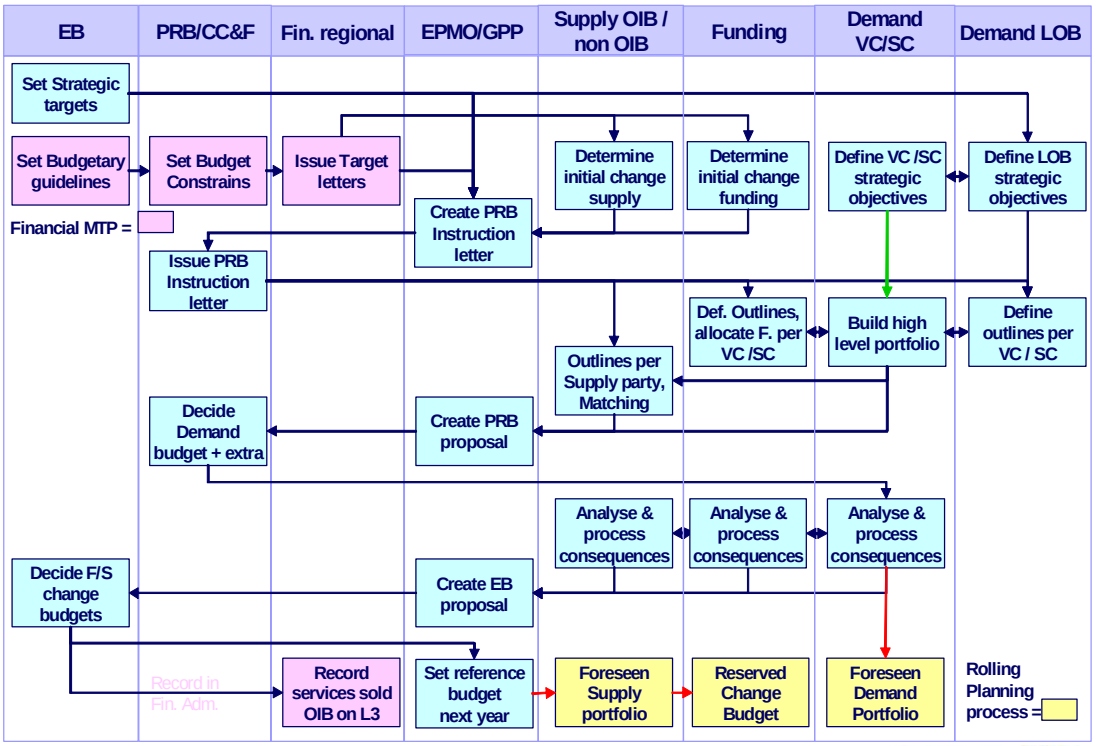
# Appendices

## Appendix 1: Overview of the Process of MTP.




Source: Instructions MTP on Change, Author: J.H. Knot, 12-07-2007. Consulted on 09-2009.

## Appendix 2: Overview of Resource Planning on Sharepoint.

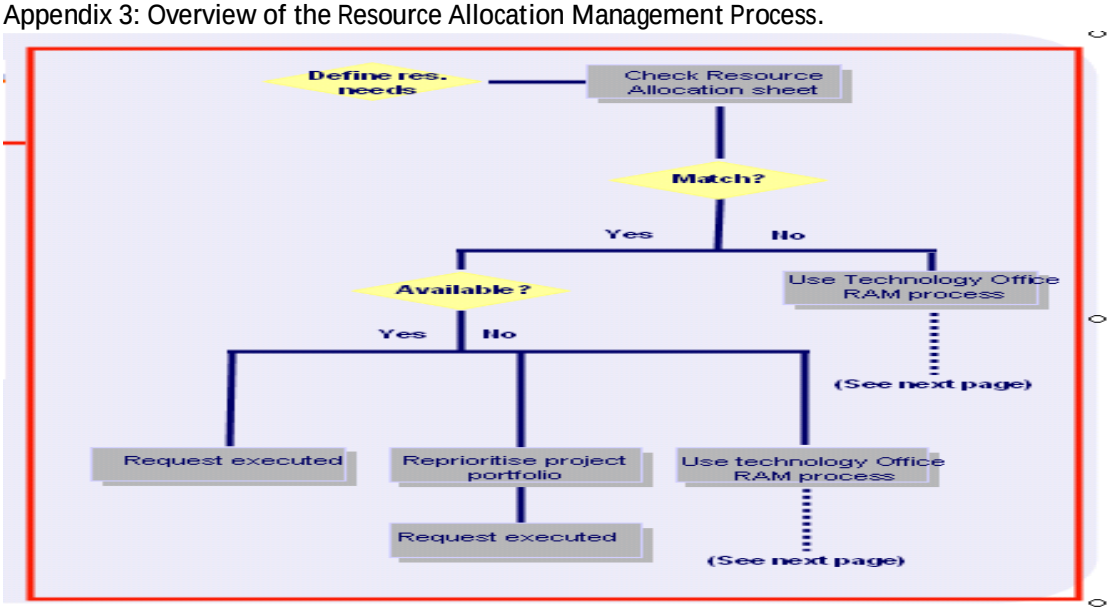
| | | week 36 | week 37 | week 38 | week 39 | week 40 | week 41 | week 42 | week 43 |
|---|---|---|---|---|---|---|---|---|---|
| Resources | Date | 3rd of September - 7th of September | 10th of September - 14th of September | 17th of September - 21st of September | 24th of September - 28th of September | 1st of October - 5th of October | 8th of October - 12th of October | 15th of October - 19th of October | 22nd of October - 26th of October |
| | GPS 2007 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | Kennisoverdracht | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | Absence | | | | | | | | |
| | Remaining availability | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Ham, Marjolijn van** | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | Servicemanagement | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | Absence | | | | | | | | |
| | Remaining availability | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Kerver, Melvin** | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| | beheer | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 |
| | rfc/releases | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | impact analyse | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | 4IB | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | Absence | | | | | | | | |
| | Remaining availability | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Lipper, Ruud** | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| | beheer | | | | 18 | 18 | 18 | 18 | 18 |
| | rfc/releases | | | | 6 | 6 | 6 | 6 | 6 |
| | Upstream improvements | | | | 2 | 2 | 2 | 2 | |
| | Absence | 36 | 36 | 36 | | | | | |
| | Remaining availability | 0 | 0 | 0 | 10 | 10 | 10 | 10 | 12 |
| | **Lootens, Maarten** | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| | Servicemanagement | 36 | 27 | 36 | 27 | 36 | 27 | 36 | 27 |
| | Absence | | 9 | | 9 | | 9 | | 9 |
| | Remaining availability | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Mulder, Frank** | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| | Management | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| | Absence | | | | | | | | |
| | Remaining availability | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Weber, Koert** | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| | beheer | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 24 |
| | rfc/releases | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | Project SWIFT | | | | | | | | |

Resource Planning IPCM AM
date: 07/09/2007
version 1.0

res. planning IPCM AM | chart planning IPCM AM | res. planning IPCM Projects | chart planning IPCM I

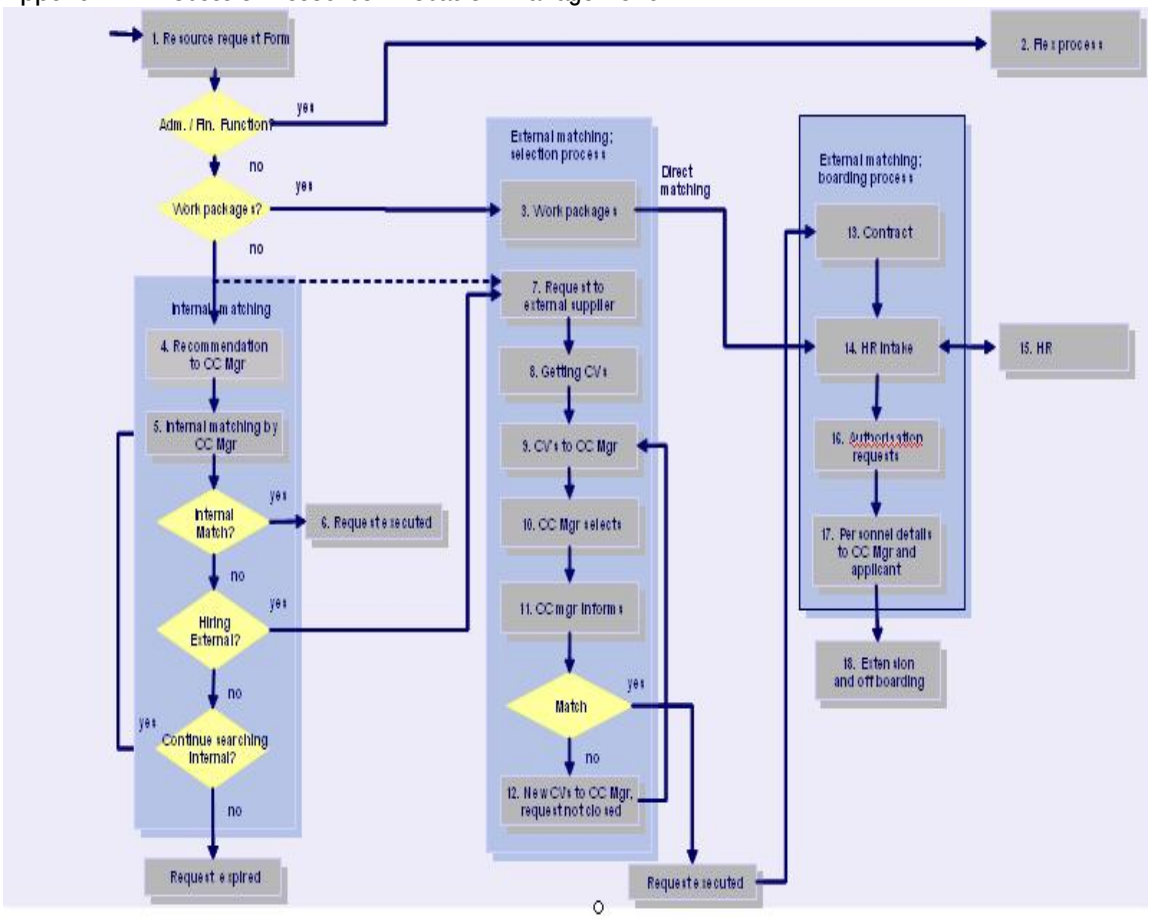
Source: PowerPoint Presentation Resource Management Business Lending September 2007. Consulted on 09-2009.

Appendix 3: Overview of the Resource Allocation Management Process.




Source: PowerPoint Presentation Resource Management Business Lending September 2007. Consulted on 09-2009.

Appendix 4: Process of Resource Allocation Management.




Source: PowerPoint Presentation Resource Management Business Lending September 2007. Consulted on 09-2009.