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Change Management and Knowledge Integration:

Implementation of an ERP System in a Multinational Corporations

Master's Thesis in the Management and Economics of Innovation

ALICIA RODRIGUEZ

VATINEE SUNTHARANONT

Department of Technology Management and Economics

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ALICIA RODRIGUEZ VATINEE SUNTHARANONT

Department of Technology Management and Economics
Division of Management and Economics of Innovation

Chalmers University of Technology

SE-412 96 Göteborg
Sweden
Telephone: + 46 (0)31-772 1000

Note: Due to a confidentiality contract signed with the studied company, the name of the company is excluded from this report. Hence, the company will be denoted as (COMPANY). This will have no effect on the quality or comprehensiveness of this report.

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Abstract

The benefits of Enterprise Resource Planning systems (ERP) have been widely recognized as the mean of maintaining competitiveness for companies in an intense market competition. An ERP system integrates different business processes into single information system in order to facilitate the material, financial, and information flow. However, capitalization from these advantages of an ERP system might represent managerial challenges.

This study has been conducted with a case study design at (COMPANY) where the ERP system was implemented in 2010. The study aims to investigate bottlenecks of organizational change in a specific process called Requisition-to-pay (Req-to-pay) due to ERP implementation at (COMPANY).

Results from the pre-study showed that bottlenecks of organizational change are causing an increased GRNI (Goods received not invoiced) account. However, further empirical data collected showed that problems causing an increased GRNI account could be generalized to problems related managing purchasing orders (POs). Moreover, findings indicated that problems regarding managing POs are caused by lack of effective cross-functionality and lack of knowledge sharing among departments within (COMPANY). Findings furthermore illustrated that the lack of cross-functionality leads to lack of knowledge sharing, and these two factors result in user resistance to the ERP system.

The recommendations provided to (COMPANY) are hence for improving current situation regarding managing POs and for further implementation of an ERP system in other processes of different departments.

Key words:

ERP implementation, change management, cross-functionality, knowledge management, user resistance.

Contents

1 Introduction

This chapter provides an introduction of this study. The first section presents the background of the implementation of an ERP system. The second section introduces the purpose of this study.

1.1 Background

Due to the intense market competition as well as the significant development of information technology (IT), many companies have implemented Enterprise Resource Planning systems (ERP) as the mean of gaining their competitiveness (Wei, Liou, & Lee, 2008). The use of such information technology has shifted from a supportive role to a more strategically oriented role in an organization (Lai C. L., 2008). An ERP system is the complex information system used in business processes integration with the aim to automate the flow of information, material, and pecuniary resource. ERP enables the operational coordination across different departments into a single information system (Wei, Liou, & Lee, 2008; Hong & Kim, 2002; Kamhawi, 2007).

Even though implementing ERP brings many benefits, this system can cripple an organization if not implemented correctly. ERP could also be seen as a nightmare and drag the whole organization into inefficiency (Laughlin, 1999). The outcome of these initiatives in implementing ERP system is often seen as unsatisfied. More than half of these technological change projects experience failure (Lai C. L., 2008; Laughlin, 1999). Shifting in technology requires not only technological change, but also demands different managerial tactics. Obviously, the major difficulty in implementing an ERP is to manage organizational change (Lai C. L., 2008). Most scholars reveal that the business processes reengineering is perceived as one of the fundamental adjustments an organization must undertake (Laughlin, 1999; Hong & Kim, 2002). To large extent, it is suggested that organizations should adapt their work processes to fit the way ERP system works, not the other way around (Hong & Kim, 2002; Kamhawi, 2007).

The other main challenge for companies in managing organizational change, particularly due to the ERP implementation, is people. Their working performances are based on their attitude and behavior about such technology (Winston & Dologite, 2000). Hence it is fair to say that one of the key success factors in implementation of an ERP has to do with employees' reaction to organizational change (Keen, 1981; Dongseop, Youngho, & Randall, 2009). Moreover, the organizational supports as well as top-management commitment could also enhance positively individuals' perception of technological change (Lawler, 1986; Manz & Sims, 1987).

An ERP system can be implemented into different business processes. In this study, we focus on the ERP implementation in Requisition-to-pay process (Req-to-pay). Req-to-pay process includes all processes started from requisition until payment stages. Hence, within this process, it requires diverse people from different departments involve and interact along the process. However, operating Req-to-pay process via an ERP system demands dramatic changes from the perspectives of both organization and employees. Therefore, it is an of interest to analyze the difficulties in organizational change due to the implementation of an ERP system in order to discover how those challenges influence the problems in Req-to-pay process by the aid of the ERP system.

This study is based on the case from a company located in Scandinavia. The company was owned 50 percent by the Scandinavian company and the other 50 percent by the American company. Due to the trend towards standardization, the Scandinavian company wanted to focus on its core products; therefore, they sold their shares and now (COMPANY) is belonged 100 percent by the American company. The American company has many plants located all around the world and (COMPANY) is one of the business units of this worldwide company.

After the acquisition by the American company in April 2009, (COMPANY) had experienced huge changes in terms of, for instance, organizational structure, working processes, etc. The main company requires every plant to have standard procedures and implement an ERP system in the beginning of 2010. ERP system has been applied into different areas such as finance, procurement, and maintenance.

1.2 Purpose of the study

The purpose of this study is to investigate bottlenecks of organizational change in Requisition-to-pay (Req-to-pay) process due to ERP implementation. The study also aims to identify the main problems in Req-to-pay process that affect the financial performance of (COMPANY) and how the bottleneck of organizational change could affect those problems in Req-to-pay process. Based on findings and related concepts in literature review, recommendations will be given to (COMPANY).

2 Problem formulation

This chapter provides the basic justification of this study. Furthermore, problems found during the pre-study period are presented. Such problems are referred as invoices-on-hold and increased Goods received not invoiced (GRNI) account. Finally, the chapter ends with the discussion of the selected key problem.

2.1 Problem finding

2.1.1 Pre-study

The first phase of research is the pre-study. Information obtained during this phase of the study was based on open interviews conducted with key users from different departments involved in the Req-to-pay process and internal documents provided by (COMPANY). The pre-study consists of identifying key issues in Req-to-pay process that affect the financial performance of (COMPANY) both pecuniary and non-pecuniary term. Therefore, the pre-study question is:

What are the key problems in Req-to-pay process that affect financial performance of the company?

ERP systems could enhance Req-to-Pay process in terms of lowering the operational costs, reducing data redundancy, and accessing real time data (www.toolbox.com). Req-to-pay process requires different users to update data into the system. Data updated by different users should therefore be consistent along the. Figure 1 shows the part of Req-to-pay process that this report focuses on. As shown in figure 1, it is required to update consistent information from the beginning of the process for the correct creation of purchasing orders.

During pre-study, we have found the key problems in Req-to-pay process that affect (COMPANY)'s financial performance are process deviations resulting in issues Invoices-on-hold and increased Goods Received Not Invoiced (GRNI) account. These two issues are then further discussed.

2.1.1.1 Invoices-on-hold

In general, there are two types of invoices that are classified as invoices-on-hold, Hold (H) & and Incomplete (I) invoices. Such invoices refer to the invoices that are currently unpaid and, hence, are put on hold. Hence, the consequences of having invoices-on-hold are for instance delay in payment, unsatisfied suppliers, and interest rate.

Hold status refers to invoices that have been authorized for payment by Accounts Payable, but are still unpaid due to two reasons:

1. An invoice is created for a greater quantity than listed on the purchasing orders (POs). In this case, ERP system will automatically generate a mismatch queue with the greater quantity and place this invoice as Hold status.
2. Two invoices are made for the same POs, for the same items, and on the same day. ERP system hence will automatically process one of the invoices for payment and place it as on pending status. The other invoice will also be processed, but then is placed on hold status.

Incomplete status refers to invoices that cannot be authorized for payments due to various reasons, including;

- The POs is closed.
- The POs has not been generated.
- The billing on invoice does not match the one on POs.
- The mismatch of price and/or quantity between invoice and POs. (California, 2008)

In the specific case of (COMPANY), the major causes of Invoices-on-hold which are commonly seen include;

- The invoices are generated even thought goods are not received yet.
- There is no POs on the invoices.
- Price and/or quantity on invoices and POs are different.
- Other reason
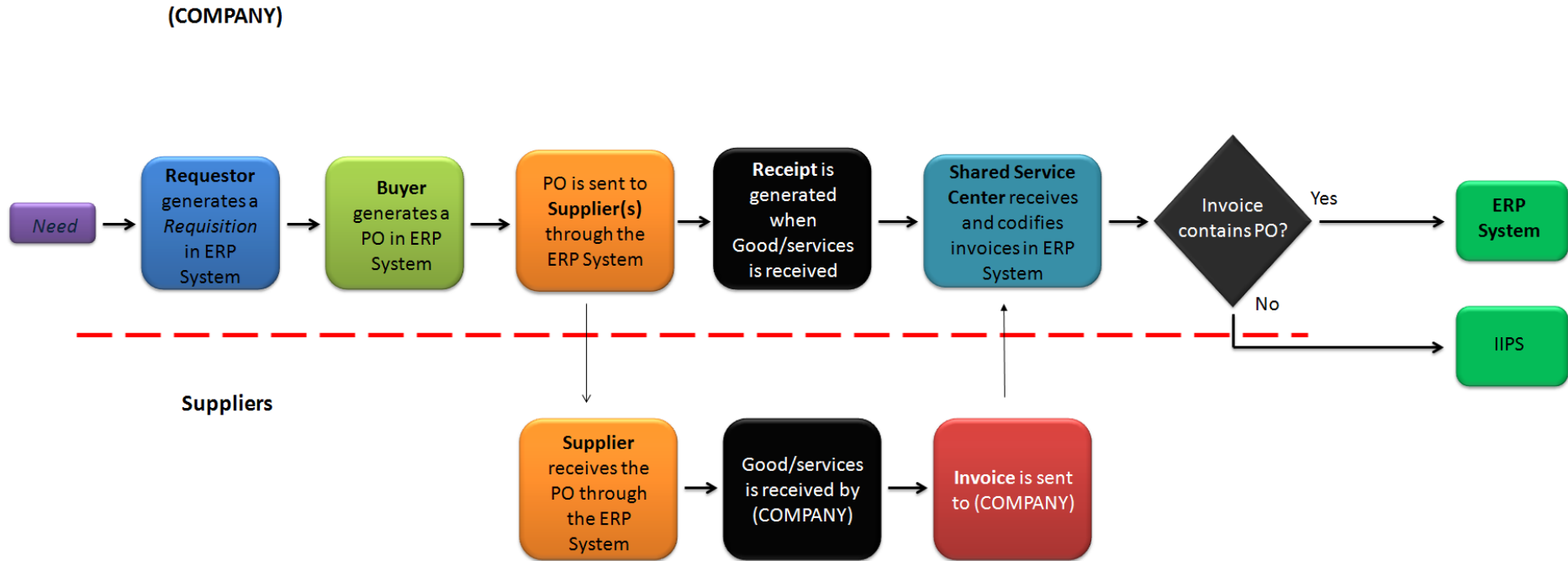
Req-to-pay Process

Figure 1. Illustration of part of Req-to-pay process that this report focuses on

Source: Authors

However, besides the circumstances mentioned previously, invoices-on-hold phenomenon is unavoidable in some cases. For instance, in the situation where the company receives an invoice without goods receiving, this can happen because of the delay in goods transportation. As the supplier might create the invoice directly after hand-in the goods to the third party to deliver to (COMPANY), due to the problem with transportation, the goods might not be delivered on time. Hence, (COMPANY) might receive only the invoice without having the physical goods at the location. Invoices thus will be put on hold. As soon as (COMPANY) receives the goods, the invoiced will be approved and the hold will be withdrawn.

2.1.1.2 Increased GRNI account

GRNI stands for Goods Received Not Invoiced. GRNI account is the detailed report supporting the General Ledger (GL) balance. GRNI account represents those receipts of materials, both inventory and non-inventory, that a company has not yet entered an Account Payable (AP) invoice for. This means that GRNI is the balanced account stating the costs of goods that have been received without any invoice generated yet. In that case, the costs will be cumulatively increased. Therefore, in order to relieve GRNI account, data contained in invoices and receipts must be matched. In general, the company should try to keep this GRNI account as low and accurate as possible in order to review the currently exact credits.

In many cases, GRNI is generated by the consequences of invoices on hold, deviation in Req-to-pay process. It happens in the case that a specific invoice, that is supposed to have purchasing order on it, has been created without any purchasing order and in the case that there is a mismatch of price and/or quantity of goods between invoice and purchasing order. Thus, those invoices are out on hold, and that could create the repeated invoices, leading to an increased GRNI.

According to the standard operation procedures of (COMPANY), goods or services must be purchased through an ERP system with the specific purchasing order attached in every purchase. Only the exception of some goods or services such as traveling costs, food, and flowers that does not necessarily have purchasing order and then will be managed through the other system called IIPS. In accordance with pre-study, we discovered that some employees have made the requisition and purchased materials and services through IIPS, instead of an ERP system. It means that such items do not have any purchasing order reference. In so doing, when suppliers send the invoices with purchasing order stated, (COMPANY) is not able to find the requisition that can be deleted, and that causes an increased GRNI account.

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2.1.1.3 The selected key problem: increased GRNI

After meetings with interviewees in this pre-study stage, we have identified that in fact invoices-on-hold is not the main reason why (COMPANY) encounters high interest rate problem. Instead, the real cause of high interest rate has to do with the incorrect payment term with suppliers regarding the term containing inaccurate information. Therefore, we decided not to focus on the invoices-on-hold. However, we have found out that increased GRNI is a critical issue caused by deviations in Req-to-pay process, which have a big impact to (COMPANY) both pecuniary and non-pecuniary performance. Hence, the selected key problem in this pre-study is increased GRNI account. The outcome of this pre-study leads to research questions further explained in chapter 3.

3 Methodology

This chapter deals with the methodology used in this research. It covers the research strategy, research design, research process, and research methods. The chapter is then divided into four sections stated previously. In every section, we first present the theory or concept related to each dimension and is then followed by the approach chosen for our study. The section ends with the discussion of the quality criteria of this study.

The four dimensions (research strategy, research design, research process, and research methods) refer to the approach that have been used to collect and analyze the data in order to generate the results that could answer the purpose of this study. The validity issues are more concerned with how the results can be generalized. It is of importance to bring up the issues of quality criteria since this study deals with qualitative research strategy based on a case study in which limitation is well defined.

3.1 Research strategy

Bryman and Bell (2007) state that it is useful to distinguish the differences between quantitative and qualitative research strategy because each of these represents a distinct method of business research. In general, these two strategies differ in terms of quantifying ability, meaning that quantitative we employ measurement while qualitative we do not. This affects the way data is collected and analyzed. Quantitative research can be construed as a research strategy that focuses on the quantification in the collection and analysis of data, whereas qualitative research strategy stresses words rather than quantification in the process of data collection and analysis (Bryman & Bell, 2007).

As quantitative method is often performed with hard measure such as time and money, this approach is often analyzed by using statistical tools. Frequently this type of research design requires a large sample so as to draw relevant conclusions. On the contrary, qualitative approach is applied in the case where the sample is small and that sample is hard to quantify. Indeed qualitative research strategy is preferred when the softer aspect involving is in focus (Creswell, 1994).

Since the main purpose in this study is to investigate bottlenecks of organizational change in Requisition-to-pay (Req-to-pay) process due to ERP implementation, the qualitative research strategy dominates in data collection and analysis.

3.2 Research questions

This study was conducted in different phases of research. It is noted that the research questions of this study were formulated sequentially during data collection period. These phases of the research are embodied into the following research questions.

Research question 1:

What are the factors causing and effects of an increased GRNI for (COMPANY)?

- *What is the nature of the GRNI problem in general?*
- *What is the nature of an increased GRNI?*

Research question 2:

What are the main problems in managing Purchasing Order after ERP implementation for (COMPANY)?

- *Is the pattern of employee behavior toward this issue common?*

Research question 3:

How has the company tried to solve the problem(s) identified in Research questions 1 and Research question 2?

- *How has the company tried to solve the increased GRNI (with OR without the aid of ERP)?*
- *How has the company tried to solve the problems in managing Purchasing Order?*

3.2.1 Relation between research questions

In the pre-study phase, the aim is to identify key issues that have a direct effect on the company's financial performance. Therefore, the outcome of the pre-study phase leads to the first research question. Hence, the first research question seeks to find the factors causing an increased GRNI account at (COMPANY). Results of the first research question show that the issue of increased GRNI account can be generalized to a superior problem known as managing purchasing orders (POs). Hence, the second research question analyses the main problems in managing POs after ERP implementation. The third research question aims to investigate the resolution (COMPANY) has undertaken to the problem(s) identified in the first and second research questions.

3.3 Research design

Research design illustrates a research structure that leads the execution of research method. It provides a framework for collecting and analyzing the data. A choice of research design depends on various priorities including describing the connection between variables, generalizing the results, understanding the certain behavior and its meaning, and having a temporal appreciation of social phenomena (Bryman & Bell, 2007).

There are many examples of research design regarding experimental design, cross-sectional design, longitudinal design, case study design, and comparative design. However, in this study, the type of research we choose is a case study design.

Case study design has been broadly used in many studying areas such as business, education, psychology, political science, social work, and economics (Dooley, 2002; Merriam, 1998; Yin, 2003). Particularly, case study research is applicable when conducting research in an organization where the aim is to study systems, individuals, programs, and events. In general, case studies are often presented as qualitative approach, however, in some other cases it can embrace the quantitative research strategy and be based on "any mix of quantitative and qualitative evidence" (Yin, 2003, p. 15).

In accordance with (Yin, 2003), case study is defined as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (p. 13). It is concerned with the complexity and its nature in question. A case can be a single organization, a single location, a person, or a single event. The main objective of conducting this research design is to gain an in-depth understanding in the certain area at a certain period of time (Bryman & Bell, 2007).

Since this study is based on the findings from a single company, case study design is used appropriately. This is because basically case study research emphasizes on providing a thorough analysis of one or a few features within a single unit. By conducting this research design, we aim to provide an in-depth elucidation of phenomena (referring as problems in managing POs) and how these problems can be solved.

3.4 Research process and research method

There are several stages in research process. Each stage involves different types of objective and research method in order to fulfill the final purpose of this study. Table

1 shows the main objectives in each step in our research process as well as addresses the different methods used in each stage.

Table 1. Research process

Stage	Pre-study phase	Literature study	Empirical data collection	Analysis	Discussion and conclusion	Creation of recommendations
Objectives	1) Understand the background and overview of the problems 2) Select the critical problem (an increased GRNI account)	1) Provide the problem and solution related to ERP implementation 2) Provide the concepts of change management particularly after the ERP implementation 4) Provide the importance of understanding the employee behavior and attitude toward an ERP system 4) Provide the understanding of cross-functional integration and cross-functionality 5) Provide the significance of knowledge management in ERP implementation 6) Provide the necessity of employee training and evaluation the employee performance	1) Explore the causes and effect of an increased GRNI account 2) Investigate the main problems in managing POs in Req-to-pay process 3) Discover how (COMPANY) has tried to solve problems regarding an increased GRNI and in managing POs 4) Triangulate the findings with different research methods	1) Find out the most critical causes of problems in managing POs 2) Find out the most appropriate solutions to such problems	1) Provide general conclusions 2) Provide suggestions for further research	Give recommendations to solve the addressed problems
Research method	Open interviews, observation, semi-structured interview	Literature review and study	KJ-Shiba workshop and followed-up semi-structure interviews	Applying theoretical framework on empirical findings	Applying the empirical findings to general problems found in the literature	Structuring the outcomes from analysis

Even though the study is based on qualitative approach, there are many methods applied during the process. Creswell (1994; 2003) notes that the mixed methods allow triangulation and complementary. It means that not only this type of approach could enhance the scope and breadth of understanding (simultaneous triangulation), but also this mixed strategies may emerge developmentally where one method

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prepares the way for the next referring as sequential triangulation. Hence, in this study, the combination is used with the aim of assisting the process of data collection and analysis as well as enhancing the triangulation. By doing so, the results could be well generated for answering the purpose of the study.

A research method refers to a technique for collecting data. The research methods used in this study are open interview, semi-structured interview, observation, literature studies, documentation and KJ-Shiba workshop.

The mixed methods allow triangulation and complementary for the research, mixed methods could be used simultaneously or sequentially. In this study, we carry out the sequential triangulation, meaning that one method prepares the way for the next one. In the initial phase of exploratory, qualitative methods regarding conducting interviews and observation are often undertaken. In doing so, it enables us to identify the main focus or representative sample that can be used in the later phase of study. Some other methods regarding the KJ-Shiba workshop and interviews are followed up in order to triangulate and complement the finding from the initial phase. After this stage, in-depth interviews are followed so as to deepen understandings gained from previous phase.

Fundamentally when it comes about data collection, this study is divided into two phases. The first phase is related to problem finding phase. We conduct several research methods regarding open and semi-structured interviews in order to get an in-depth understanding of specific problems affecting (COMPANY)'s financial performance. In so doing, some related thoughts as well as key concepts associated with such problems are disclosed from interviews. Such concepts hence are chosen and used as the fundamental literature concepts in the literature review section. The second phase is dealing with creating problem universe. As a specific key area is revealed from the first phase, we attempt to formulate the more general problem whether problematic issue is common in some other areas. Mainly this phase in data collection is done by conducting the KJ-Shiba workshop. The KJ-Shiba goes beyond an additional method, but it is used as a mean of triangulation our findings. Afterward, followed up interviews were conducted in order to clarify some issues.

3.4.1.1 The shift of method used from questionnaire to KJ-Shiba in second phase of data collection

At the beginning of the research it was considered to combine the use of semi-structure interviews with self-completion questionnaires, in order to triangulate information. However, after the first phase of the research this approach was reevaluated due to the disadvantages that using self-completion questionnaires might implicate for the results obtained.

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Furthermore, it was addressed that particularly some disadvantages of using self-completion questionnaire might jeopardize not only the quality of the triangulation but more importantly, the scope and impact of the research. Among the disadvantages of the self-competition questionnaires is that in case of difficulty to answer questions, there is no one present to help respondents; there is no possibility to inquire respondents to elaborate an answer. Nevertheless, ensuring the development of clear and comprehensive questions could solve these disadvantages.

Additionally, since the topic addressed by this study includes different departments among the company there is a challenge to develop a questionnaire suitable for every respondent. Even if questions are of extreme relevance for one particular department, the use of self-completion questionnaire do not allow to ask many questions that are not salient to all respondents. Moreover, questionnaires might have to be developed based on data collected during the first phase of the study. Hence, the use of self-completion questionnaires might not enable to collect additional data during the second phase of the study.

Therefore, for the disadvantages previously mentioned it was necessary to use a different method that could overcome all or most of these disadvantages and that could enhance results obtained during the second phase of the research. Among different methods discussed, KJ-Shiba was identified as the most suitable due to the advantages that might represent for the second phase of this study.

In the second phase of this study, the aim is to investigate the actual behavior of employees in operating purchasing orders (POs); KJ-Shiba is the most applicable. Furthermore, KJ-Shiba here is applied as a set of intervening in operations as participants will learn of the activities of others during the workshop. The reason behind hence is to make employees understand others' role in relation to purchasing order management. In the workshop, we also are able to see whether this type of behavior common in (COMPANY), in which areas that have similar pattern of behavior.

3.4.1.2 KJ-Shiba method

KJ-Shiba method is developed by a Japanese ethnologist, Jiro Kawakita (Scupin, 1997). It is used as the means for problem finding adapted for a group work (Miconnet). The KJ-Shiba method is perceived as an aspect of Japanese collective decision-making techniques, emphasizing on creating consensus of problem finding. This method has been widely recognized as a useful, brainstorming technique both in Japan and in other countries worldwide, as it has universal applicability. KJ-Shiba is commonly applied to organize specific issues which are complex, immeasurable, behavioral, and qualitative data (Scupin, 1997).

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3.4.1.3 General principle of KJ-Shiba method

KJ-Shiba method involves gathering and classifying verbal data and finding the relation among them that shows the logical connections between verbal data. The method starts from defining the problem that will be used as the basis for collecting verbal data. During session, a group of 4-7 participants will write down silently the ideas related to the given question. These ideas will thereafter be grouped by participants into major problem areas. Then, the causality relations between these groups will be drawn. And finally the relative importance of the groups will be outlined. As KJ-Shiba method stresses the significance of the interaction and the involvement of all participants, it is recommended that everyone has to actively participate and indeed no one holds the answers. This method represents a communication tool that enables each participant to have a common view on the same problem. In so doing, common solutions proposed by group participants will be carried out collectively. It is believed that "once a decision is reached, everyone involved becomes committed to the plan" (Scupin, 1997)(p.236).

As seen in the table 1, in most stages in research process the data has been collected by the use of more than one research method. This technique is referred as triangulation in which research is conducted by means of multiple sources of information. In doing so, it enhances us to have a better understanding of the problem as it is viewed from different perspectives as well as it ensures the validity in this study.

3.5 Quality criteria

It is necessary to follow up certain quality criteria along the process in order to evaluate the quality of a study. While conducting a case study research it is quite important to be concerned about validity and reliability since these are the most significant measures of research quality (Swanson & Holton III, 2005). The quality criterion that this study is concerned about is the following:

3.5.1 Validity

Validity measures the truthfulness of the research. Furthermore, measurement validity is concerned with whether or not a concept is measured by a measure of a concept (Bryman & Bell, 2007). The main forms of validity that this study will be concerned on are construct, internal and external validity.

3.5.1.1 Construct Validity

Construct validity refers that a study is in fact measuring what it intends to measure (Bryman & Bell, 2007). In order to have high construct validity it is necessary to have multiple sources of evidence and create a chain of evidence (Yin, 2003).

Research questions presented by this study are answered through two different phases of collection of data. The first phase of collection of data is based on interviews conducted to employees from different departments in order present different perspectives and to have a broad overview of the issue addressed. Furthermore, documentation provided by the (COMPANY) is analyzed and considered during this phase of the research. The second phase of collection of data is made by conducting the KJ-Shiba workshop with the participation of employees from different functional areas that affect or are affected by the issue addressed in this study. The combination of these two phases creates the chain of evidence for this study. As a result, we consider construct validity of this study rather high.

3.5.1.2 Internal Validity

Internal validity or trustworthiness of the findings refers to how research findings match with reality. Furthermore, internal validity is concerned with setting up causal relationship where certain conditions lead to other conditions (Swanson & Holton III, 2005). In order to ensure internal validity it is important to do pattern-matching, elaborate on explanations and identify rival explanations (Yin, 2003).

The level of internal validity of this study is expected to be high. This study provides a deep understanding of causes of the issue addressed from the perspective of employees working in different functional areas of the company. Moreover, this study identifies and analyzes causal relationships between employees' behavior towards the system performance and the implication of these for the issued addressed.

Internal validity is strengthened in this study by triangulating findings. Data obtained during the first phase of the research during interviews and the analysis of documents is then, triangulated by conducting the KJ-Shiba method during the second phase. Such triangulation enables to collect more evidence regarding causal relationships between conditions and causes presented of the issue identified in this study.

3.5.1.3 External Validity

External validity refers to setting the domain for which findings of a study can be generalized. For a case study to have high external validity it is recommended to

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achieve high quality on the information collected from empirical study (Svenning, 2003). Furthermore, the use of statistical models for data quantification and in-depth descriptions of concepts and objects that are studied increases external validity (Bryman & Bell, 2007).

This study aims to have high external validity in terms of detailed description of concepts as well as the use of the methods employed during the empirical study. The extension of the domain to which findings can be generalized in a case study is amplified by the use of KJ-Shiba workshop during the second phase of the collection of data. The second phase of the empirical study made possible to identify that factors causing an increased level in the GRNI account can be generalized to broader aspects of managing purchasing orders (POs) after the implementation of the ERP system.

3.5.2 Reliability

Reliability refers to the accuracy level of the study. Furthermore, reliability means that same results will be achieved by repeating the procedure of the study. That is, the study should lead to the same findings and conclusions independently from who has conducted the study (Swanson & Holton III, 2005). In qualitative research, reliability tends to be complex because data is collected during interaction between persons (Christensen, 2001). This study achieves reliability through the combination of methods used during the empirical study. Same results and findings should be accomplished if utilizing the same combination of methods.

4 Literature review

In this chapter, the theoretical framework related to the study's purpose is outlined with the aim to provide the readers with necessary information for forthcoming part of the report. All the concepts below were brought up during data collection period. The chapter begins with the notion of ERP implementation, continues with change management and in particular managing change for successful ERP implementation. Then, the concept of employee attitude and behavior toward an ERP system is presented, followed by the literatures regarding the cross-functionality and knowledge management. The chapter ends with concepts of training and measurement.

4.1 ERP implementation

Recently, the use of Information technology and systems (IT and IS) has significant impact on the productivity of organizations. Many companies have implemented such IS to improve their competitiveness (Willis & Willis-Brown, 2002; Mandal & Gunasekaran, 2003). The most common Information system used in many organizations is an Enterprise Resource System (ERP) (Mandal & Gunasekaran, 2003). ERP could be defined as the complete software packages, that, aims to integrate the wide range of business processes in order to present a holistic view of an enterprise from a centralized source of information (Gable, 1998). ERP system enables an organization to share common data and activities throughout the entire organization within a single data base. The system also integrates the different parts of business processes as well as generates the real-timed data and gives the access of information in an up-to-dated environment (Willis & Willis-Brown, 2002; Kamhawi, 2007). The main purposes for applying ERP packages are to decrease the operating costs, to increase the productivity, and to improve customer services (Martin, 1998; Pliskin & Zarotski, 2000).

Even though ERP presents many benefits, providing significant improvements, ironically this system can cripple an organization if not implemented correctly. ERP could also be seen as a nightmare and drag the whole organization into inefficiency (Laughlin, 1999). Planning the implementation of an ERP system requires an integrated approach simultaneously involving several functions with joint responsibilities for the development of the system (Mandal & Gunasekaran, 2003).

4.1.1 Successful ERP implementation

For successful ERP implementation, there are various basic requirements that should be met during the implementation period. Such requirements are, for instance, a

clear business objective, understanding of the nature of changes, the comprehension of project risk, and leadership ability (Mandal & Gunasekaran, 2003; Wagle, 1998).

Markus et al. (2000) classify the critical success factors with two success dimensions: ERP project success metrics (in terms of meeting the project's scope including budgets, due dates, expected performance) and ERP business success metrics (in terms of business improvements regarding the reduction in inventory, reduction in product cycle time and shorter time to market). The studies from Kamhawi and Emad (2007) present the key success factors of ERP implementation through these two dimensions. Such critical factors for implementing an ERP are technical fit, strategic fit, organizational fit, training, top-management support, business process engineering, resistance, and ease of use. Among these critical factors, the findings show that the level of organizational resistance to an ERP system and the degree of ease of use of such system are drastically related to the ERP project success. On the contrary, organizational fit and business process engineering are more appropriately related to business dimension of success.

The statistical results from Kamhawi and Emad (2007) reveal that project success is a vital mediator of the key success factor for business success. This means that meeting ERP project scope such as budgets, deadlines, system performance, and quality standards is significant for reaching the expected business success regarding reduced product cycle time, reduced time to the market, and improved cash management. Thus, to implement an ERP system successfully, the critical factors from these two success dimensions have to be managed before the system releases.

It is obvious that the role of change management in ERP projects, particularly in emphasizing the issues of employees' resistance as well as the comprehension of their perception of the degree of ease of use, has increased significantly. On one hand, effective communication, user involvement, training schemes, and knowledge management are examples of the areas that should be managed carefully for a successful ERP project implementation. On the other hand, organizational fit factor and business process reengineering are in focus for the ERP business success dimension (Kamhawi, 2007). According to Hong and Kim (2002), organizational fit is defined as the congruence between organizational artifact of an ERP system and its organizational context. It is noted that firms implementing an ERP should consider changing their business to fit to the system, rather than relying on the customized package and make it fit to current process as it is. In other words, organizations should adjust their business processes in the way that could enhance the use of ERP, not the other way around (Hong & Kim, 2002; Kamhawi, 2007).

4.2 Organizational change and change management

What exactly is the organizational change all about? It is not only about changing structure, processes and outcome, but also about changing how people run the business regarding how they think and act. In other words, it has something to do with changing people's schemata and worldview (Diefenbach, 2007). Spencer-Matthews (2001) describes organizational change as "the negotiation or the renegotiation of shared meaning about what is to be valued, believed in and aimed for" (p.52). To large extent, organizational change is about shaping organizational culture and changing employees' attitude (J & B, 2003).

4.2.1 Change management

Many researchers note that managing change is the biggest challenge facing organizations today (Peacock, 2008; The Economist Intelligence Unit, 1994). Most corporate attempting to manage change have resulted in failures, and indeed surveys show that they are dissatisfied with the results of corporate changes. Wave of management strategies have revealed to deal with change management, from Total Quality Management, to process re-engineering, to downsizing, to teamwork, unfortunately none has performed the best. Change management is doomed to failure if employee motivation is not included into the business goal and process of change (The Economist Intelligence Unit, 1994). It is obvious that nowadays managing change has to do more than management level, but it needs to take into consideration from the operational level as well.

4.2.1.1 Manager's perception of change

Many scholars note that managers play a significant role in initiating change in an organization. It is primarily about the managers' perceptions and understanding towards change itself. The successful of change management depends very much on how change is introduced and communicated to all employees by managers. Without these, there will be a possibility in having high employee resistance resulting in change failures (Diefenbach, 2007). Mohrman and Lawler (2007) find the middle management's role important. Even if top management is able to change their behavior, middle management somehow struggles with it. They are then recognized as a major blockage to change. Hence, it is an of interests to stress the manager's role and his/her perception and understanding towards change because these could later affect employees' attitudes and behavior about change.

The research from Saka (2003) shows that internal managers are accounted as barriers to change. Since it is the managers themselves who send the message to employees, how good their understandings of change and the way in which they

explain could facilitate or inhibit the change process. Generally, there are two views of change: rational-linear view and systemic view. The former describes the situation where change is applied due to the felt need to improve organizational performance by top-management. The main problematic issue in rational-linear view of change is the conflicts of interests between management and operational level leading to some sort of employee resistance. In fact this resistance is seen as some of barriers to achieve the desired outcomes. The cause of this problem is a lack of interaction between decision maker and people who take action. In contrast to rational-linear view, the latter one, there are those who perceive organizational change as a systemic process where the processes of knowledge exchange, trust building, and heterogeneity in preferences and value are in focus.

Traditionally, managers tend to implement change management based on rational-linear view of change. In so doing, they are likely to limit considerable freedom to employees and follow an orderly linear approach of change. However, a finding reveals that recently systemic view of change performs increasingly better. Managers may state the reason for change as well as some sort of guideline how the change will be implemented. Nevertheless, during the process there will be an interaction between managers and employees in exchanging thoughts and interests regarding how the change in an organization should be done. This approach hence facilitates the problem of user resistance as employees participate and involve during implementing change so they are more willing to change (Saka, 2003).

In conclude, as mentioned, the results in initiating change could differ depending on the managers' perception of change. If managers perceive change as rational-linear view, they aim to give the direction to employees of how change is managed. On the contrary, if managers adopt the systemic viewpoint of change, he or she has to take into the consideration employee involvement in change process. Since these two approaches give different processes and results, it is vital to understand how managers perceive change as their perceptions could influence the attitudes and behaviors of their employees towards such change (Saka, 2003).

4.2.2 Change management in relation to ERP implementation

As the concept of change management is very wide and could be explained differently depending on the context around, in this paper change management is stated in relation to ERP implementation. This means that we focus on the nature of change management related to the implementation of an ERP, not in general term.

Among other reasons, shifting in technology such as Information System (IS) development is one of those that require change management. This is because such technological change affects organization in terms of working processes,

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organization structure, employees, etc (Yeh & OuYang, 2010; Lai C. L., 2008). As a result, to implement such systems the concept of managing change has to be applied in parallel (Yeh & OuYang, 2010).

In spite of ERP benefits, many ERP systems fail to implement (Stratman & Roth, 1999). Many ERP systems face implementation difficulties because of various reasons, for example, workers' resistance, limitation of departmental boundaries, operating processes. In many cases, organizations have to customize the software packages as well as adapt their existing business processes in order to suit the system. In so doing, new way of operating may change the way organizations work. In other word, ERP implementation involves a much broader organizational change (Ross et al., 2002).

Aladwani (2001) suggests three strategies for implementing ERP successfully. Such strategies are organizational strategies, technical strategies, and people strategies. Organizational strategies are derived from concepts of organizational structure and resources, managerial style and ideology, and IS function characteristics. Technical strategies have to deal with technical aspect of ERP implementation and adequacy of in-house technical expertise. The last one, people strategies, focuses on employee and management attitudes as well as training and employee involvement. Since the focal interest in this paper lies on the organization perspective including organizational change and employee attitude, the two strategies; organization and people, are in focus.

In the paper of Aladwani (2001), a process-conceptual framework of change management for successfully implementing an ERP is presented. It consists of three phases: "Knowledge Formulation phase, Strategy Implementation phase, and Status Evaluation phase". This framework aims to solve the complex organization problem particularly workers' resistance to ERP implementation. Figure 2 illustrates a framework for managing change associated with ERP implementation (Aladwani, 2001).
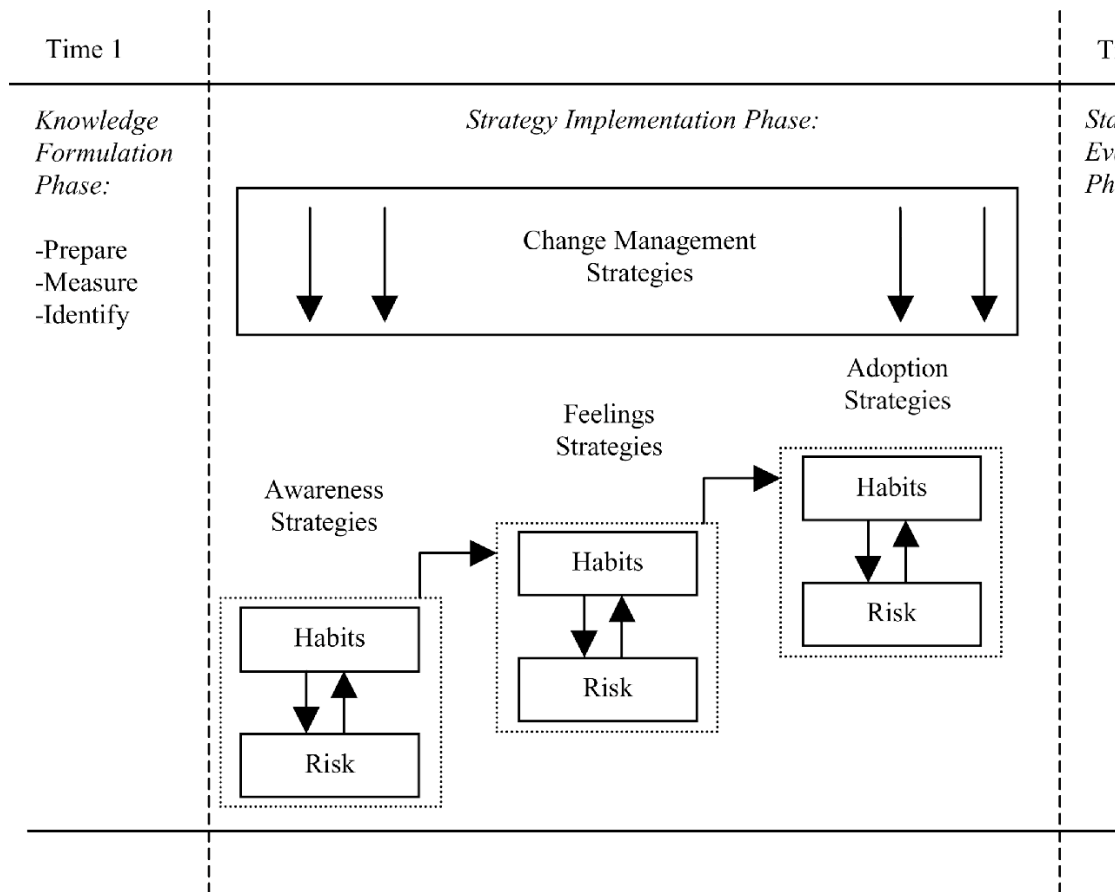
Figure 2. A framework for managing change associated with ERP implementation (Aladwani, 2001)

In the first phase, Knowledge Formulation, the aim is to identify and evaluate the users' attitudes on an ERP system. The findings from this stage may give the good understands of sources of user resistance. Some key questions are for example what users' needs are, what their beliefs and values are, and what their interests are.

Following by the Strategy Implementation phase, managers might use the knowledge gaining from a previous stage in order to set up appropriate strategies that can overcome user resistance (Aladwani, 1998). There are three-level processes in this stage: awareness, feelings, and adoption phases. In an attempt to change users' attitude, in other words to create an awareness of a new system, the main strategy is effective communication. Messages regarding benefits of an ERP and general operation description have to be sent to all users in an effective manner. The second step in Strategy Implementation phase aims to influence the affective component of users' attitudes about ERP. Mostly employees are unlikely to adopt the new system because of two reasons: high perceived cost and no differentiation in work quality. As soon as employees perceive cost of implantation low and see quality of an ERP high, the positive adoption attitude can be created from users. The last step in this phase is the conative stage. Conative refers to "the aspect of mental

processes or behavior directed toward action or change and including impulse, desire, volition, and striving" (The Free Dictionary By Farlex, 2009). At this stage, leaders play a significant role. The strategy behind is to get the supports from well-known leaders. By convincing group leaders to participate during the implementation process and make them feel that they are a key player. As a consequence, these group leaders will tend to convince their colleagues about the benefits of an ERP leading to finally users are likely to adopt an ERP system.

The last phase of change management strategies is Status Evaluation phase. The goal for this phase is to make sure that workers' anxiety and resistance to an ERP system are under control. Besides evaluating the work performance in general in order to ensure that the desired business outcomes are achieved, it is as significant to monitor the progress of ERP change management efforts by based on performance system. The results from this evaluation may offer the opportunity to managers to understand what actually went wrong. Top management may solve the problems by re-identifying users' needs leading to re-evaluating the execution of adopted change management strategies so as to find an appropriate and acceptable fit between these two.

In sum, three phases in change management strategies for implementing an ERP particularly to overcome users' resistance, top-management has to firstly identify users' needs as well as the cause of resistance, secondly to apply the appropriate strategies and techniques based on the information gained from the first phase so as to successfully introduce an ERP, and lastly to monitor the status of change management efforts.

4.2.2.1 High involvement management and Managerial behavior

Currently in many organizations, there has been a trend of applying the concept of high involvement cultures and installing a more participatory management style (Lawler, 1986). Moreover, there are a number of discussions of the changes in the supervisors' role that is required to support employee involvement (Manz & Sims, 1987). It is discussed that in moving to a high involvement management style, the managerial role as well as the way it is enacted to employees are the primary change that an organization must take.

According to Mohrman and Lawler (1988), "Managerial behavior refers to the behavior of all individuals who directly supervise or manage people" (p.46). Frequently, the reasons of why managers fail to change their behaviors have to do with limiting factors and change efforts. Indeed, change in managerial behavior is perceived as the major change in an organization. This is due to the difficulty of

changing behavior and confusion and ambiguity experienced by supervisors. Hence this makes it even more difficult to align it with a high involvement approach.

Therefore, the concept of participative managerial behavior is brought up. The major benefit of this approach is that participative manager facilitates the processes of organizational change, rather than being in a position of resistance to change. This framework ideally addresses the commitment of an organization to participative practices as well as focusing on human development, supporting information and knowledge sharing, and especially the significance of cross-functional participation (Saskin, 1984).

Being participative managers involves getting employees to 'know more', 'care more', and 'contribute more'. Their roles are firstly providing employees information about jobs and business, also developing them to perform new task. Secondly, participative managers must take into consideration of employees' motivational environment in order to make jobs motivating and connect desired performance to value outcomes. And lastly, managers should enable employees to contribute to work even more by providing enough resources, giving clear expectations and feedbacks, and importantly let everybody participate in the decision making processes. In doing so, the authors suggest that an organization making the transition towards high involvement culture benefits by making managerial behavior as the lead change, rather than a lag change (Mohrman & Lawler, 1988).

But why employee involvement is important? Lawler (1986) argues that if employees participate in decision making process, they are more satisfied and likely to accept change. Through participation, employees can help deciding the working condition, the nature of the job, and expected outcomes rather than waiting for the company to take care of these areas. However, moving into high employee involvement is not that easy. The transition will require the totally new establishment of working environment and relationship with employees. Other aspects regarding human values, political processes must also be taken into consideration.

Potentially, high involvement involves four different levels: individual, workgroup, intergroup, and organization. The finding shows that to implement high involvement management effectively, employees must participate in all four levels (Mohrman & Lawler, 1988).

1. Personal involvement deals with influencing individuals' personal stake in an organization, including job definition, performance evaluation, training and development, and rewards. Supervisor can initiate employee involvement by making sure that employees understand the nature of organizational system so they are able to manage their own behavior to attain their goals. This can

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be done by having a two-way dialogue, giving employees a possibility to set their goals that could be aligned with the nature of an organization.

2. Workgroup involvement is seen as the most common type of employee involvement. Frequently, members are encouraged to come up with problem-solving processes to improve the productivity. Hence, employee concerns here include coordination within the group, division of labor, leadership, and resource provided to the group. Supervisor can approach workgroup involvement by encouraging and facilitating group problem-solving, providing sufficient resource, clarifying the overall goals and expectation but leave the detail for the group's responsibility.

3. Intergroup involvement: employees often not have only concerns about their own group, but also other groups inside and outside an organization. Their main concerns are the coordination and workflow between groups, quality of inputs from other groups, and working climate. Participative supervisor hence involves establishing a two-way exchange of information, cooperating closely with group leaders, enhancing cross-functional training, and encouraging rotation across groups.

4. Business involvement: employees' concerns here are in line with the overall future of the company such as whether top-management is in touch with whatever is happening to the company, whether company policies and practices facilitate or obstructs working performance, and whether there is a sound strategic leadership inside the company. Thus, the main supervisor's task is to communicate the information regarding the strategic importance to the organization in order to keep employees update. This can be done through direct meeting or company's newsletter, etc. It is vital to share this information throughout the organization so that everyday has the same understanding of what is going on inside the organization. In so doing, supervisor might bring up the feedback from employees and use it as a good input for further development.

Fairly said, the most crucial outcome of creating employee high involvement in organizational change is the increased understandings and sense of connectedness that result (Mohrman & Lawler, 1988). In many cases, organizations develop the mechanisms for cross-sectional participation. The results have revealed positively and it becomes one of the main factors in success of organizational change (Lawler, 1986).

4.3 Employee attitude and behavior towards technological change

Organizations undergo a revolution in adopting and applying a complex IT system such as an ERP, nevertheless the results of these initiatives are often rather disappointing (Yeh & OuYang, 2010). One of the main difficulties associated with achieving intended benefits has to do with employee behavior toward technological change (Lai C. L., 2008). Because it is the employees who perform the work, not only the technology itself, their performances are based on their attitude and behavior about such technology (Winston & Dologite, 2000). Employees tend to view IT implementation as an important organizational change, their attitudes toward the change can influence how they react to such change. Hence it is fair to say that one of the key determinants of the successful implementation of a new IT system has to do with employees' reaction to organizational change (Keen, 1981; Dongseop, Youngho, & Randall, 2009). Therefore, in this section, we review the literatures related to the impact of technological change on employee attitude and behavior.

4.3.1 Technological Acceptance Model (TAM) and Expectation Confirmation Theory (ECT)

Technological Acceptance Model (TAM)

The framework of Technological Acceptance Model has emerged for the studies of IT utilization behavior since last two decades (Davis, 1989; Igbaria, Guimaraes, & Davis, 1995). The TAM states that two constructs: *perceived usefulness and perceived ease of use*, tend to influence an individual in deciding whether to use an information system (Davis, 1989). While usefulness is referred to the degree to which individual believes that using such information system will benefit an organization, ease of use is defined as subjective likelihood to which individual thinks that using this IS will be free of effort (Lai C. L., 2008). This model notes that behavioral intention could completely mediate the actual behavior (Davis, 1989; Lai C. L., 2008). Even though the TAM is useful in forecasting an early decision of individual before an actual stage, there are some pitfalls of this tool. The main problem with TAM is that the model does not consider the attitude changes from pre-stage to use-stage. This means that usually when users have experienced the new system the prior beliefs and/or attitudes, regarding the negative feelings due to the difficulties in using the system, might be displaced by some other factors such as the impact of the system on job performance (Bhattacherjee & Premkumar, 2004). Therefore, this model is practical for an early stage of adopting a new system, for later stage, some other frameworks such as Expectation Confirmation Theory could provide application focusing on attitudes after actual use as well as its impacts on user behavior.

Expectation Confirmation Theory (ECT)

Expectation Confirmation Theory posits that the user satisfaction is determined by two constructs: the expectation of a new system and the confirmation of such expectation that follows the actual use (Bhattacherjee A. , 2001). Expectation provides the baseline level being used to determine their (users) evaluative response. Confirmation implies the realization of the expected benefits of the system use, whereas disconfirmation indicates failure to achieve such expectations. As confirmation shows a positive relation with satisfaction, Bhattacherjee also adds that user satisfaction in addition to perceived usefulness is likely to affect the continuance decision in information system of individuals. Along the same line, Bhattacherjee and Premkumar (2004) conduct the studies of social psychology literature in order to answer why the beliefs and attitudes of users have changed as they experience in IT usage. Their study shows that the emergent factor that drives the changes in system beliefs and attitudes of users is the disconfirmation of expectation.

Lai (2008) suggests that the integration of these two models, TAM and ECT will be helpful in understanding how pre-deployment attitude influences use-stage attitude and actual use of a new system. When the new information system is implemented, users' attitudes and beliefs are based on two factors: the perceived usefulness and perceived ease of use, in accordance with TAM. The decision whether to adopt the new system mostly thus depends on these two. As users have some experiences using the system, their satisfaction will be now laid on their expectation of the system as well as the confirmation of such expectation. It is noted that user satisfaction is not only determined by prior perceived usefulness, but also by the confirmation of expectation (Bhattacherjee A. , 2001). Hence, the combination of these two models posits that individuals' satisfaction and behaviors on the new system are derived from their prior attitudes about that system and indeed these attitudes will change according to their usage experiences which will affect their actual behavior.

4.3.2 User resistance and a Status Quo Bias Theory

4.3.2.1 User resistance

When a new Information System is implemented, users may make a decision to adopt or to resist such system based on the evaluation of change which is associated with the system (Joshi, 2005). User resistance has been voted from many organizations around the world as the first-ranked challenge for the implementation of a large-scale IS like and ERP system (toolbox). In fact, user resistance becomes one of the challenges organizations facing because of the multifarious changes in both

technical and social systems that result (Gibson C., 2003). In response to changes, users may refuse to accept the new IS leading to causing such as the underutilization of the system and the delays in project duration (Beaudry & Pinsonneault, 2005).

There are many authors studying the conditions of user resistance. Among other theoretical explanations, Markus (1983) defines user resistance as the consequence of changes in intra-organizational power distribution with the new system. Here, user resistance is explained in terms of the interaction between characteristics of the new system and the social context of its use. As such interaction is changed due to the system implementation where often the loss of power is occurred; this leads to the resistance by the users. It is noteworthy to address the other study by Joshi (1991), an Equity-Implementation Model (EIM). In accordance with EIM, users evaluate the change based on the net equity. The net equity is calculated based on the differences between changes in outcomes and changes in inputs associated with the new Information System. If net equity is perceived, users may likely to adopt the new system. On the contrary, if the net inequity is seen, users would resist to that change and tend to be resistant to the system. Along with this model, cost/benefit analysis is presented. Within this model, costs are represented the decreasing in outcomes and increasing in inputs whereas benefits are shown by the decreasing in outcomes and decreasing in inputs. When the net inequity is perceived by users, it means that users perceive cost more than benefits, resulting in unlikely to accept and adopt the new system (Joshi, 1991).

Aladwani (2001) states two fundamental sources of user resistance to ERP system: perceived risk and habits. The former refers to one's perception of risks associated with the decision whether to adopt and accept an ERP system, whereas habits mean the activities that one is routinely doing. The author also suggest that in order to decrease employees' resistance, these two sources of user resistance have to be thoroughly analyzed and appropriate strategies to counter them must be employed.

4.3.2.2 A Status Quo Bias Theory

Recently, the concept of a Status Quo Bias is used to explain user resistance prior to the implementation of information system (Kim & Kankanhalli, 2009). According to Kim and Kankanhalli (2009), a status quo bias perspective refers to the resistance in user decision making in adopting new IS that happens due to the bias in preferences to stay with the current situation.

Samuelson and Zeckhauser (1988) define Status Quo Bias explanations in terms of three main categories: "rational decision making, cognitive misperceptions, and psychological commitment". The first one, *rational decision making*, refers to an assessment of costs in relation to benefits of change (such as net benefits) before

switching to a new alternative. In the case that costs are greater than benefits, this leads to status quo bias. Within this perspective, there are two types of cost: transition costs and uncertainty costs. While the former one implies the costs that incur in adapting to a new system, the latter one represents the costs happened due to the users' psychological perception of risk associated with a new system. Samuelson and Zeckhauser (1988) further classify transition costs into two subtypes: the transition costs that occur during the change such as learning costs and the permanent costs that are a result of change including the loss of work because of the new Information System.

The second category of Status Quo Bias is *cognitive misperception of loss aversion*. According to Kahneman and Tversky (1979), loss aversion is a psychological principal in human decision making in the way that losses become visible larger than gained value perception. Here loss of aversion can cause status quo bias due to the fact that even though only small losses in changing from a current situation could be seen as larger than they actually are.

The third and last one is based on *psychological commitment*. There are three main factors contributing to psychological commitment: sunk cost, social norms, and efforts to control (Samuelson & Zeckhauser, 1988). Sunk costs imply the previous commitment causing reluctance to switch to a new system. This includes any kind of skills related to previous way of working which will be lost due to a switch to a new system. Social norms are related to norms prevailing in the work environment about such change. These can either strengthen or weaken status quo bias of individuals. By giving an example, the opinion from colleague may influence individual in accepting or resisting a new system. Efforts to feel in control arise from desires of individual to decide their own situation. To be more specific, individuals in general do not want to lose a control by switching to an unknown system or indeed an unfamiliar way of working. Hence, such desires in controlling can result in status quo bias.

4.3.3 Theory of Planned Behavior and attitude toward technological change

4.3.3.1 Theory of Planned Behavior (TBP)

In accordance with Ajzen (1991), the theory of planned behavior gives the explanation of major influences on acceptance behaviour. This perspective notes that human behavior, in particular the acceptance of new Information System, is guided by three different considerations: behavioral beliefs, normative beliefs, and control beliefs. Behavioral beliefs mean by the possible outcomes of the behavior and the assessment of these outcomes. Normative beliefs refer to the normative

expectations of colleagues and motivation to fulfill these expectations. Control beliefs present the factors that may enhance or inhibit performance of the behavior as well as the perceived power of such factors.

Based on TPB, behavioral beliefs generate a favorable or unfavorable attitude toward the behavior, while normative beliefs lead to perceived social pressure, and control beliefs could increase the perceived behavioral controls. Ajzen (2001) states that attitude toward behavior refers to the degree in which performance of such behavior is valued positively or negatively. This means that positive attitude will appear if the behavior is seen to provide relative advantage over the individuals' current situation. In general, individual perceive the value by evaluating the changes related to a new system. With this respect, three factors regarding behavior beliefs (performance expectancy), normative beliefs (social influence), and control beliefs affect behavioral intention and user behavior toward a new system.

4.3.3.2 Attitude toward technological change

Since an organization consists of individuals, to change the organization, the important thing is to change employees' attitudes and behaviors (Krell, 2000). According to Dunham et al (1989), attitude toward technological change is defined as "a person's cognitions about change, affective reactions to change, and behavioral tendency toward change" (p.5). In other words, attitude toward technological change concerns individual's beliefs and intentions regarding the extent to which technological change is needed and furthermore whether there is sufficient organizational capacity to make such change work successfully (Lewin, 1952). Since employees tend to view IT implementation as an important organizational change, their attitudes toward the change can influence how they react to such change. Hence it is fair to say that one of the key determinants of the successful implementation of a new IT system has to do with employees' reaction to organizational change (Dongseop, Youngho, & Randall, 2009).

4.4 Knowledge Management

Knowledge management is concerned about exploiting and developing knowledge assets of an organization in order to accomplish goals defined by the organization. Furthermore, it deals with managing change and culture aiming at transforming tacit knowledge into explicit knowledge; and enabling accessibility of knowledge within the organization (Davenport & Prusak, 1998). Knowledge management is driven by the need to improve intellectual assets management, maximize operational efficiency, enhance customer and competitor intelligence, increase innovation in products and services, decrease time to market, accomplish continuous improvement, boost organizational learning (Kostas, 2009).

Knowledge management is concerned about spreading and enhancement of knowledge within the organization. Figure 3 shows the cycle of knowledge, which illustrates how knowledge can be generated through different means, then acquired by third parties, and cultivated and refreshed. Once knowledge has been collected this can be organized according to its elements, content is filtered and, linkages and relationships are established amongst its elements. Moreover, this new knowledge is incorporated into an existing knowledge base and then dispersed through decision support applications. The outcomes of the decision support applications are then utilized to improve and provide feedback to existing knowledge (Kostas, 2009).
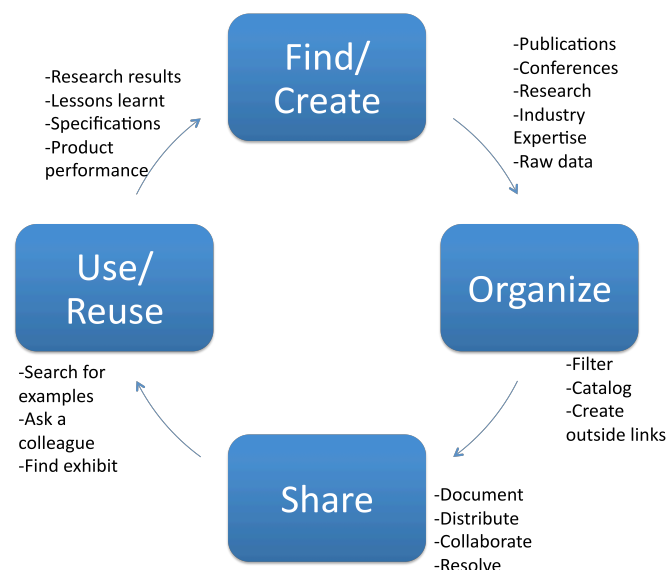
Figure 3. The cycle of knowledge

ERP systems offers a single database which facilitates processing integrated transactions and enables information to be available across different business functions; including functions such as human resources, financial and accounting, supply chain, manufacture, inventory and customer services. The integration of ERP and knowledge management builds a central database and a knowledge database. This integration gathers information and knowledge from, and provides information and knowledge into, different modules divided according business activities of the company. Therefore, information and knowledge is simultaneously updated while entering new information and new knowledge into the system (Kostas, 2009).

ERP systems are not knowledge management systems but an instrument aiming to reduce management efforts when collecting, storing and using information in order to dedicate more creativity and effort when analyzing and contextualizing information so it can later be refined into knowledge. ERP systems should enable management to direct its efforts towards knowledge-based activities to create

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meaning out of information, share the significance of that meaning to others and refine knowledge to find solutions to problems (Chan, Walker, & Mills, 2009).

ERP systems are a social construction that enables different functional users to communicate and increase knowledge-sharing opportunities. A successful application of knowledge management demands as basic requirement, the interaction of people from multi-disciplinary groups. The value that knowledge management provides to multi-disciplinary groups results from its potential of reinforcing and leveraging knowledge flows generated by heterogeneous sources (Mohamed, Stankosky, & Murray, 2004).

Knowledge management is supported by four pillars; leadership, organization, technology and learning (Stankosky, 2000). Due to the strong correlation between concepts, this same elemental idea can be applied to cross-functional teams (Mohamed, Stankosky, & Murray, 2004).

Leadership

Knowledge management requires changes that might not effortlessly be accepted within the organization without leadership mobilizing and achieving engagement of middle managers to promote an appropriate environment to enable widespread sharing of knowledge (Stankosky, 2000). The role played by management and leadership is critical since they establish the multi-level context required for a successful adaptation of knowledge management practices. The role of both knowledge management and cross-functionality is to overcome resistance to change and demolish communication barriers, across organization and among different management levels (Pan & Scarbrough, 1998).

To enhance cross-functionality and knowledge management, leadership should promote cross-functional relations that gather people together and reward them for encouraging shared actions to be taken or achieving mutually constructive solutions (Mohamed, Stankosky, & Murray, 2004).

Organization

Traditional organizations with strong internal competition, strict functional silos and excessive compartmentalization might generate critical barriers for departments to be isolated and disconnected. This structure inhibits change, prolongs decision-making processes and reduces innovation. Moreover, vertically structure around functions does not facilitate sharing knowledge at different organizational levels (Stankosky, 2000).

Organizational structure is crucial for how knowledge is exploited, and strategically enables it towards agility and competitiveness. The main principle of knowledge management is to enhance collaboration through organization in order to capitalize from employees' intellectual capabilities (Stankosky, 2000).

Technology

Knowledge management considers technology as an enabler more an end-solution. It is argued that ERP and knowledge management schemes should be complementary instead of contradictory, enabling the organization to improve in terms of efficiency and flexibility. ERP systems can be an important mean for knowledge management and provides a single information platform for innovation and for knowledge to be captured, stored and shared (Chan J. O., 2009).

Learning

Organizational learning can be enhanced through sharing knowledge among different functional areas and different levels of the organization. A critical benefit of achieving cross-functional integration is the potential of being able to enhance and leverage knowledge flows among heterogeneous sources within the company. In this sense cross-functional integration and knowledge management are quite related because of the benefits that one provides to the other and vice verse (Mohamed, Stankosky, & Murray, 2004).

4.5 Cross-functional integration and cross-functionality

Nowadays, there is an increasing interest from companies to increase levels of cross-functional integration between different areas within the company (Hammer & Champy, 1991); (Galbraith, 1994). This interest rises from their concern regarding accelerating processes and facilitating information sharing among the company (Goodhue, Wybo, & Kirsch, The impact of data integration on the cost and benefits of information systems, 1992).

Cross-functionality refers to the consciousness of different organizational units regarding their interdependencies and its need for information sharing. In a strict functional approach, departments perform their work with not information sharing (Goodhue, Wybo, & Kirsch, The impact of data integration on the cost and benefits of information systems, 1992).

The value of cross-functional integration lies in its capacity to improve company's performance in the marketplace. Effective cross-functional integration enables interactive learning and potentially enhances customers-orientated focus (Valle & Avella, 2003). Furthermore, cross-functionality may enable better understanding of

other functions (Boland & Tenkasi, 1995), development of a higher sense of belongingness and decrease cross-functional conflicts by guaranteeing political correctness (Hutt, Walker, & Frankwick, 1995); (Huang & Newell, 2003).

However, due to multiple barriers existing in companies, cross-functional integration is not a simple or easy work to achieve (Hitt, Hoskisson, & Nixon, 1993). The integration of several organizational processes involves considerable organizational efforts and resources (Markus & Tanis, The enterprise system experience: from adoption to sucess, 2000). One reason is, that cross-functional integration infringes a classic management principle: functional specialization. The way work processes are interpreted is influenced by the diversity between functions and cultural differences even though there it some level of cross-functional integration (Markus M. , Power, politics, and MIS implementation, 1983). Moreover, some managers might perceive cross-functionality as potential threat to their functional territory and a way to reduce their power (El Amrani, Rowe, & Geffroy-Maronnat, 2006).

Cross-functionality branches from cross-functional integration, however these two concepts are not equivalent (El Amrani, Rowe, & Geffroy-Maronnat, 2006). Cross-functional integration involves the convergence of diverse departments (Goodhue, Wybo, & Kirsch, 1992). Moreover, cross-functionality characterizes the extent to which processes and functions are interrelated, standardized and coupled (Orton & Weick, 1990). A process refers to a horizontal organizational form that embodies the interdependence of tasks, roles, people, departments and functions needed in order to supply products or services to customers (Earl, 1994). Increasing the level of integration within processes increases operations performed in a cross-functional manner. Nevertheless, this might happen regardless consciousness of users (El Amrani, Rowe, & Geffroy-Maronnat, 2006).

Cross-functional integration is stated to be one of the benefits of the implementation of ERP systems (El Amrani, Rowe, & Geffroy-Maronnat, 2006). ERP systems provide cross-organizational integration by embedding different business processes, including different departments within the company (Davenport, Putting the enterprise in the enterprise system, 1998). ERP systems usually require standardization of cross-functional languages and terminology within the company, in order to build an organization-wide database (El Amrani, Rowe, & Geffroy-Maronnat, 2006). On the contrary, according to theory, standardization through ERP should enable the creation of one common language and facilitate the management of different kinds of interdependencies between different actors across the organization (Klaus, Rosemann, & Gable, 2000). It is stated that organizational integration is facilitated by the use of ERP systems by allowing efficient and effective communication across different functions. Furthermore, improvements in

communication within the company would allow managers to improve their understanding regarding business processes (Volkoff, Elmes, & Strong, 2004). However, other authors suggest that how companies have implemented the system will have a direct impact in the development of cross-functionality (El Amrani, Rowe, & Geffroy-Maronnat, 2006).

Furthermore, it is argued by different authors (Daily & Huang, 2001); (Pinto, Pinto, & Prescott, 1993); (Tidd, Bessant, & Pavitt, 2001) that an increasing number or organizations are using cross-functional teams in the implementation of ERP systems. Cross-functional teams are commonly known as the coordination or collaboration of persons from different functional areas (Pinto, Pinto, & Prescott, 1993). It is stated that cross-functional teams can enhance idea generation process, increase flexibility to solutions developed, and improves generation of innovative solutions (Tidd, Bessant, & Pavitt, 2001). Companies implement cross-functional teams aiming to increase knowledge, learning and innovation into a project (Santa, Ferrer, Bretherton, & Hyland, 2010).

4.5.1 Success factors for developing successful cross-functional teams

Achieving benefits from cross-functional teams can be challenging if failing to appropriately identify key factors needed for success (Santa, Ferrer, Bretherton, & Hyland, 2010). Some of the main factors for achieving successful cross-functional teams are empowerment of project teams, generation of an appropriate project climate, and human resources of the teams and mainly the importance of establishing goals (McDonough, 2000). Likewise, it is argued that higher levels of results can be accomplished by establishing clear and consistent project goal. A clear and consistent project goal promotes common boundary or reference frame and orientation for achieving common tasks and outcomes within members of the cross-functional team (Pinto, Pinto, & Prescott, 1993).

The role that team leaders play is critical to promote cooperation among team members and to maintain the team converged on its goals. Further, success factor for achieving successful cross-functional teams is to identify the expectations of each stakeholder (McDonough, 2000). This factor is quite relevant because the diversity of cross-functional teams could generate misunderstandings and miscommunications within the team. This diversity hinders communication and interaction between members of the team, therefore is important to develop boundary-spanning agents (Kellogg, Orlikowski, & Yates, 2006). The role that boundary spanning agents play is to act as translators, mediators and brokers. By doing this, links between members of the team can be created to reduce communication barriers, such as mismatch perception based on their own needs (Robbins, Judge, Millet, & Waters-Marsh, 2008). Therefore, it is important to create bridges among members of different

backgrounds or cultures in order to accomplish the creation of common languages to enable the definition of clear and consistent goals (Santa, Ferrer, Bretherton, & Hyland, 2010).

It is possible to reduce misunderstandings by cross-functional teams if members are capable of developing shared language and mental models. The generation of shared language and mental models would enable effective information sharing at every stage of ERP implementation, enabling problem identification and solution finding (Santa, Ferrer, Bretherton, & Hyland, 2010).

4.6 Employee training for an ERP implementation

Anyone who participates in today's workforce can indicate to the fact that change is a constant and indeed workplace changes are frequently brought by new or upgraded technology. Among other new technologies, ERP system is one of those that is applied to many companies. Implementation of the system results in massive changes that revolutionize the companies' processes. This is due to the fact that ERP system is complex and requires careful planning, particularly, for the execution of the implementation phase (Matey, 2002).

As the new technology is introduced, workers may become accustomed to a specific system, only to realize that soon such technology will be replaced by a new one. Hence, these vital and continuously occurring technological changes in workplace are come together with the need for continual training on the part of the workers. It is considered that successful ERP implementation depends on a successful training effort (Ismail, Jenatabadi, & Yasin, 2010; Matey, 2002). The human impact of this change/ change cycle will/learn, therefore, is considered to be one of the key success factors in ERP implementation (Matey, 2002).

Adam (1998) comments that when companies plan to apply an ERP software solution, it is necessary not to forget the human factor, unfortunately, many executives in many companies do. Such false assumption can put the system solutions in conflict with employees who operate the system. Thus, the key is to provide employees with comprehensive training and especially allow sufficient time during the training so as to they are able to use the new system in an appropriate environment. Often many managers focus training program on the mechanics of the software only, but it is equally significant to provide employees on how the companies' business processes function in the new system environment. Besides that, management team must understand what new skills for employees will be needed and facilitate them to get such right skills. Training ought to start well in advance of the 'go live phase', preferably training course should be run by someone who is familiar with business process and employees in order to ensure that such

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person comprehend how the ERP system works within the companies' business (Price, 1998; Stedman, 1998).

4.6.1 The need of internal training

"Outsiders don't have job-specific answers." (Stedman, 1998) (p.58)

Often companies who provide an ERP system design and conduct training programs for buyers' users. It is argued that this offering is not always good and indeed sometimes is seen as disaster. This is due to the fact that frequently the outsider trainers do not know company's business well enough to enable to relate to the users. In short, whenever users have questions regarding the business processes, the trainers could not provide the answer. Hence, it is recommended to build their own ones (Price, 1998; Stedman, 1998). Many companies nowadays decide to train their workers themselves, instead of paying for classes run by outsiders (Stedman, 1998).

However, doing this does not mean that outside trainers are not needed. Rather, they are behind the scenes facilitating companies find out what the best formats for training courses are. Instead of having classes run by outsiders, training sessions are mainly conducted by internal employees who are quite familiar with the companies' business processes (Stedman, 1998).

It is important to stress issues regarding how an ERP system works and especially how to use it for employees' particular jobs to users. Most companies overpay the training budget; this is because most of the costs are for training the ERP project teams, not actually the people who really will use the software. Instead of providing the system training to everyone, it is more efficient to focus only on the group of workers who operate the ERP system and ensure that those people understand and have the capability to operate the ERP system (Stedman, 1998; Matey, 2002; Ismail, Jenatabadi, & Yasin, 2010).

4.6.2 Training method in ERP

As mentioned, among other key success factors, having an appropriate and effective training method is concerned as one of the most important factors determining the success or failure of ERP implementation (Kale, 2000). Like any other technology, ERP system requires training course for the staff to be able to manipulate the system correctly and effectively (Koh, Gunasekaren, & Cooper, 2009). In fact a study from Botta-Genoulaz & Millet (2006) reveals that successful ERP training method contributes to the optimization of ERP system. Furthermore a research conducted by Choi, Kim, and Kim (2007) address the benefits of training which go beyond simply learning how to manipulate the software, but effective training method could also

enhance the positive attitude toward the system among users leading to boosting the user acceptance of such new system. As users are trained properly to be accustomed to the system, this scales up their knowledge of the system and hence they have skills in operating the system in an effective manner. This, therefore, enhances the users to admit and comprehend the system (Esteves, Pastor, & Santos, 2001; Choi, Kim, & Kim, 2007).

There are myriad number of companies provides ERP training methods including: Lecturing, On-the-job training (OJT), Self direct training, and Computer based learning, etc. Many ERP vendors offer a wider-range of training courses and techniques to guarantee the effective and successful implementation and operation of their own ERP systems. Such common techniques are for instance e-learning, on-site training and consultancy as one part of the employed methods (Koh, Gunasekaren, & Cooper, 2009). In order to facilitate the training even more, many companies have developed Internet-based training programs. In so doing, those companies have essentially reduced the training costs and even improved the employee mastery of the system (Noudoostbeni, Yasin, & Jenatabadi, 2009).

A study of Stedman (1998) proposes a training recipe for a successful ERP implementation before the go-live phase. 5 stages for a training recipe are:

1) Providing basic computer training.
2) Providing the general overview of how the system applications work.
3) Conducting an initial job specific training classes for individual user.
4) Conducting advanced classes with role-playing scenarios to all users (let everyone understand their roles and others' role in ERP system).
5) Continuously providing On-the-job training after the software is rolled out.

As seen, training is not temporal process, but rather the program requires continuous learning as well as improvement along the process. To be the most effective, companies cannot consider training course as one time investment, instead training has to be done through all the process in order to make sure that users understand the system and have the capability to operate the system in the correct way (Stedman, 1998; Pineda, 2010).

However, many scholars note that most of companies are not able to obtain the full potential of training program in terms of higher productivity, better on-the-job performance, and improved quality (Tennant, Boonkrong, & Roberts, 2002; Pineda, 2010; Steensma & Groeneveld, 2010). Fundamentally major factors are inadequate training objectives and a lack of training evaluation mechanism. It is suggested that employee working performance must be evaluated in order to ensure that the investment in providing training is profitable (Tennant, Boonkrong, & Roberts, 2002;

Pineda, 2010). Very few companies have data to show the result of such investment. In fact the actual contribution of training must be identified in order to find any improvements to optimize the training function even further. Therefore, evaluation of employee productivity is the key tool for this purpose (Holton, 1996; Kirkpatrick, 1998).

4.7 Measurement

"What is measured is managed" (Sugianto, 2008, pp. 1). Studies suggest that the actual driver behind companies achieving successful turnover has been the selection of appropriate key performance indicators (KPIs), the implementation of clear and simple scorecards, and constant measurement and monitoring (Sugianto, 2008).

Success can usually be defined as a satisfactory or pleasing outcome (Saarinen, 1996). In practical terms, "the success of an ERP system" is accomplished when a company is capable of improving the performance of all its business processes and when the implemented ERP system actually accomplishes the objectives strived by managers (Wei, Liou, & Lee, 2008). Hence, the development of a process to measure the ERP performance should create a feedback mechanism between the expected objectives of ERP implementation and the effects of ERP execution (Mashari, Mudimigh, & Zairi, 2003).

Key performance indicators (KPIs) assess the business health of the company and ensure that all members of the company are working towards the same goals and strategies. Furthermore, they enable standardization, coordination and collaboration across the company (Kent, 2004).

KPIs are defined as quantifiable metrics that show the performance of a company in accomplishing its goals and objectives. It is critical to ensure that KPIs are aligned for all levels of the company (business units, departments and individuals). KPIs should be clearly defined targets created to facilitate accountability of results through benchmarking and to track the progress of projects. Moreover, KPIs enhance collaborative planning across the company by using a common playbook for everyone (Kent, 2004).

Selecting the correct KPIs is vital for the success of any performance management program (Kent, 2004). However, several problems are related to this selection; for example accuracy of data, identifying meaningful metrics to support the process of decision-making, or the measurement of intangible aspects of a company (Carlucci, 2010).

The selected KPIs must be of a limited number, and able to provide an integrated and complete understanding of the performance of the company. This is essential in order to prevent overload of information, to evade confusion for their potential users, to allow assessing critical competitive factors for the organization and to enable a complete measurement (Carlucci, 2010).

4.7.1 Selection criteria for performance indicators

The following criteria are suggested for selecting the most appropriate performance indicators (Carlucci, 2010):

Relevance

A relevant performance indicator should help users to whether make decisions regarding outcomes of past, present and future events, or to verify prior expectations. It has the value of prediction and/or the value of feedback. The value of feedback refers to the quality of information that allows users to verify prior expectations. Meanwhile, the value of prediction refers to the quality of information that facilitates users to increase probabilities towards correctly forecasting the result of present or past events. Relevance is determined according to the directness or adequateness of information. High level of directness refers to lack of duplicated information provided by indicators.

Reliability

Reliability is described in terms of faithfulness, verifiability and neutrality (Financial Accounting Standards Board, 1980). The selected performance indicators should be reasonably free from bias and error. Furthermore, reliability refers to the quality of a performance indicator that faithfully represents what it intends to represent. Consensus among measurers is needed in order to ensure that the information represents what it is intended to measure.

Comparability and consistency

Performance indicators should facilitate users to assess similarities and differences among different sets of economic phenomena. Consistency refers to the conformity of the performance indicator through different periods of time without changing policies and procedures.

Understandability and representational quality

In order to build appropriate performance indicators, it is important to consider the meaning and format of the data collected. Performance indicators should consist of

data interpretable and easily understandable for users. Moreover, these should easily communicated and understandable not only internally but also externally. Performance indicators selected should be appealing for users whom will be working toward achieving them.

5 Empirical results

This chapter presents the empirical findings for this study. It starts with a short background of data collection process and a summary of identified significant findings. Then the chapter is divided into four main sub-sections, each of them presents the empirical findings relatively as well as a description of data collection process for each of these findings.

As mentioned in methodology chapter, this study is done based on qualitative research approach. Thus, the main methods used are open and semi-structured interviews together with KJ-Shiba workshop. Due to confidentiality reasons, any specific name of interviewee will not be referred; however, it is of interest to see the various perspectives from different departments. Hence, empirical results for each sub-section will be shown in groups of different departments at (COMPANY).

To begin with, we intend to provide the findings regarding the ERP implementation in general, by focusing on Req-to-pay process. Viewpoints related to ERP implementation in Req-to-pay process from interviewees in different departments will be presented. Then three main findings for this study are structured according to the order of research questions. Firstly, the empirical data related to the nature of an increased GRNI will be shown. Secondly, information regarding the main problems in managing purchasing order in Req-to-pay process will be presented. And finally, findings concerned the way that (COMPANY) has solved an error causing the increased GRNI as well as problems in managing purchasing order will be disclosed.

5.1 The implementation of an ERP system in Req-to-pay process

Generally, when companies implement a new IT system such as an ERP system, the system affects business processes differently. However, in this study, the focus lays on the ERP implementation particularly in Req-to-pay process. As this process involves various actors from different departments along the chain, we discover three main actors affecting this process the most. Such actors are requestors who hold the need of purchasing, employees working in procurement, and employees working in finance department. Hence, the empirical data in this section is collected through conducting open and semi-structured interviews with requestors from the production and maintenance department, people working in procurement, and employees from finance department. The findings below are presented and addressed how employees from different departments perceive ERP implementation regarding benefits and drawbacks in Req-to-pay process.

5.1.1 Requestors (from production, maintenance and logistic department)

Requestors refer to the person who holds the need of purchasing materials or services. Fundamentally, this person is the one who starts the whole process by updating information into the system. He or she makes the requisition of specific materials or service needed by coworkers in the department. In (COMPANY), according to standard operation procedure, requestors must make the requisition through an ERP system; this requisition will then be automatically sent to procurement department holding the duty as a buyer.

In accordance with the interview with requestors, the benefits of implementing an ERP system is hardly perceived. The only comment seen as advantages of using an ERP system is that the quality of data seems to be much better than the system used. This is due to the fact that there is only one system being used by every department. Moreover, ERP system requires users to carefully put data into the system. When a mistake is made, the system does not allow fixing it manually at that moment. As a result, requestors have to be more careful in terms of data accuracy.

When it comes about perceived disadvantages, requestors left remarkable information.

"For us, ERP is a waste of time. Personally I do not perceive the value of it."

"The system is so complex, there are too many steps to do just for one thing. It is very different from our legacy system and difficult to operate."

"We lost our ability in doing work into putting data into the system."

"Time that we used to spend in improvement in our work is now spent in updating information into the system."

As shown, not only requestors do not see any benefits of an ERP system, indeed they perceive the system as drawbacks of their daily operating work. There are many reasons for this, one of them is that requestors believe that operating Req-to-pay process through an ERP system creates more work as they have to follow many steps and also they have to concern the accuracy of data. Requestors further added that with ERP it takes two or three times longer just to make it right according to standard operation procedure. One interesting thing is that requestors do not understand the complete overview of the system. Because the results are interpreted pretty much the same, they think that operating in Req-to-pay process via an ERP system creates unnecessary works.

The other significant reason is the improper of training. Some examples of comment are:

"High investment for us to learn but the money was not correctly invested.

"Learning process of the new system is too intensive. We are introduced by many things, but we don't really learn anything."

"There was too much information in too little time. And at the end, it turned out that most of it was not even related to what I was going to do."

"During the ERP implementation, I didn't know what was going to be my level of involvement into the system. It was after the ERP implementation that I knew what my actual role into the system was going to be. Therefore, If I had known what my role was going to be from before, I would have had better questions during the training regarding my actual tasks."

"There is lack of support from the persons who really knows how the system works."

Requestors claimed that they have been introduced by an ERP system in a very short period of time. It was not sufficient time to get to know the system well enough. There were many new things and procedures to follow. Many requestors believe that it would have been more proper not to learn everything, but specifically information related to the role they would be playing into the system. The two most important things to know are the overview of the system and how to precede the role as a requestor. However, there is a significant lack of coordination between different departments as well as the absence of people who really have the comprehensive understanding of the system. As requestors do not hold sufficient understanding of the system, it is difficult for them to formulate appropriate questions during training when they do not know what will be their role in the system.

Moreover, interviewees left the comments about timing to the system and learning curve.

"We had more problems with the system three months ago but now we have improved. So perhaps in three months everything will be much better. We expect that with time people will get used to how the system works."

"We had been familiar with the old system for 11 years, so probably in 11 years we'll find ERP easier. Everything you have learnt is easy. It is all about time. Perhaps we need more time to understand the system."

As they were familiar with the old system, they consider the system is very different and indeed very difficult to operate. As mentioned, more time, more work, no

perceived benefits are among the reasons why requestors perceived an ERP system as disadvantages.

5.1.2 Employees at procurement department

According to Req-to-pay process, actors from procurement department interact in the middle of the chain. Here, they act as a buyer creating a purchasing term regarding the delivery term and payment term with suppliers. Basically, they get the information regarding the requisition made by requestors and then they have the responsibility to generate the purchasing by contacting suppliers and making the agreement.

As mentioned previously, the accuracy of data will dependent on the information provided and updated by requestors; buyers have the duty to continue preceding such information. From this perspective, if the way the data is put is correct, this makes the job of people working in procurement easier. Since there will be less possibility of having error in the system, interviewees from procurement department tend to perceive the use of an ERP system rather benefits than drawbacks.

"An ERP system forces people to work in the standard way/process."

"The system helps us to see the overview of the process flow."

"With ERP, work into the system is much more structured and we know what to do if something goes wrong."

Even though the implementation of an ERP system is new to them, interviewees from procurement tend to manage this revolution quite well. As illustrated by their comments:

"I think our main frustration is based on fear, fear about new change and new system."

"After having some experiences on using the system, it is getting better. This is due to the competences we have."

"Just after the implementation of the system high level of frustration can be perceived towards the system by users. 3 months ago everybody was very negative towards the system, but in 3 months we will get better. Due to the learning curve, we will improve."

Interviewees noted that ERP system forces people to generate work in a more structured way leading to easier to follow the procedure as well as to track back the data. However, their perception regarding the main difficulty of implementing an ERP into Req-to-pay process has to do with freedom in the way the work has been done. Through ERP system, it is mandatory to follow the steps strictly, otherwise, the mistaken will be shown later in the process chain. In so doing, interviewees believe

that the system enhances the work process in terms of decision making as the details of who has the right to make the decision is clearly stated.

"Operating req-to-pay process through an ERP system helps us to bring the decision process to the right management."

"After ERP implementation, we can see that we do not have that much flexibility as before. But it is better for the organization in terms of better decisions. Since such decisions can be taken because your scope is broader by considering more factors."

5.1.3 Employees at finance department

The fundamental responsibility of employees from finance department, particularly in Req-to-pay process, is to pay the invoices gotten from suppliers. As soon as vendors deliver the goods or service to (COMPANY), vendors will create the invoice and send it to finance department. When invoices are received, people working in this department have to match such invoice to the receipt made by requestors (as requestors have gotten the ordered goods or services).

From their perspective, implementation of an ERP into Req-to-pay process brings high improvements. Due to the fact that the system integrates different departments, this provides possibility to see the whole flow of overall process. Moreover, having one single system enables departments to follow the standard procedures, which facilitates the integration process needed for the finance department. As shown by interviewees' comments:

"Before, we had different systems for Purchasing, Finance and Procurement department which were not integrated. There was no communication, too much manual work, less transparency, hard to compare information, and share information between different systems.

"After ERP: 80% is streamlined process. Data accuracy has been highly improved. Now it is more focused on reconciliation and getting figures improved. Information can be compared between different plants, it is easier to spot things than before, data is more transparency, processes and systems are well defined, and the priorities have changed."

"For our department ERP has solved the problem of integration. Before we had many databases and we needed to integrate ourselves in order to get the information we needed."

"Due to the fact that we are more forced to put accurate data, the quality of data is much better."

Even though many benefits are perceived by employees at finance department, they still believe that the use of an ERP system can be much further improved. Interviewees express that one of the most important factors for the successful ERP implementation lays on users, in particular the requestor as the initiative person in the process chain. Comments from the finance department regarding improvements needed are for instance:

"There has been a high level of improvement from the implementation of ERP; however there are still things to be improved, and especially how people operate the system."

"The work performance is perceived unsatisfied due to the employees' bad habits in working."

"I believe that we need to understand our people. To manage the process, we need to manage the people, because it is actually people whom operate the process."

In accordance with Req-to-pay process, employees working in finance are located in the end of the process chain. In the case that something goes wrong such as the invoice does not contain the purchasing order, this leads to the impracticality to match invoice with receipt. In this case, they are the ones who receive the notification and have the work to solve this problem. As their job is to resolve others' mistake, they perceive human error in the system is one of the main challenges in today's work.

5.2 What are the factors causing an increased GRNI account?

In order to answer this research question, the main source used by we was documents provided by (COMPANY). These documents present an overview of the nature of GRNI account. Furthermore, in order to increase the understanding of the information contained in these documents, some interviews were conducted for this purpose.

In a balanced accrual account, the digit between the received goods and the invoiced goods should be the same. However, in an unbalanced accrual account the level of GRNI increases due to mismatching digits between goods received and goods invoiced. There is a potential gain for the company, if in the accrual account the digit represented by goods received is higher than goods received. However, in the contrary case, if the digit representing goods received is lower than goods invoiced, there is a potential loss for the company. Regarding the focus of this study, our attention centers in factors causing an increased GRNI account.

1. *Deviations related to Requisition and Purchase Order*

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This type of deviations in the process of Req-to-pay occurs when having mismatched information between purchasing orders (POs) created and invoices received. The most common mismatching errors are:

- PO raised relates to different supplier than the one indicated in the invoice.
- PO raised in incorrect currency.
- PO includes higher/lower unit price than the invoice.
- PO indicates different item description than what is indicated in the invoice.
- PO was created for 12 months, but the unit price of the item changes during year.
- PO has not been created for the goods ordered indicated in the invoice.
- PO has not involved all the goods ordered indicated in the invoice.

2. Error related to Receiving Entry of goods

These errors are generated when the receiving entry of goods is not performed according the established procedures. The most common errors affecting an increased GRNI account are:

- No receipt was generated in the system with the goods arrived. Payment to the supplier cannot be done without receipt of goods in the system.
- Goods where returned to the supplier without recording it in the system.
- Amount differs between PO, receipt and invoice.
- Entering a return of goods to supplier after an invoice has been matched.

3. Error related to Invoice Entry

Besides the ERP system, the company has another system called IIPS for managing those purchases that do not require the creation of a purchasing order in the system. The lists of items that do not require the creation of a purchasing order are for example traveling costs, flowers, food, etc. In the strict sense, only these items are allowed to be booked as non PO. However, an error is generated if items not included in this list are booked as non PO.

5.3 Main problems in managing purchasing order after the ERP implementation

To provide the good understanding for this research question, the data collection was done through two phases. The former phase is based on research methods such as open and semi-structured interviews, while the latter phase is done through conducting KJ-Shiba workshop subsequently follow-up interviews. Thus, this section will be presented into two phase according to data collection: information gained

from interviews and from KJ-Shiba. In so doing, the data gained from the first phase is triangulated by the one gained from the later phase. This perceives as the way to increase the validity of this study.

5.3.1 The first phase: open and semi-structured interviews

5.3.1.1 Requestors (from production, maintenance, and logistic department)

The main challenge in managing purchasing order for users deals with operating an ERP system in general. Due to the standard operation procedure, it is obligatory for users to create the requisition through an ERP system. In doing so, there are many requirements from the system that users have to accurately put data into the system in order to continue the following steps. The reasons behind could be clarified into two issues: lack of perceived benefits and lack of system training. As illustrated by their statements:

"There is a misunderstanding on how to manipulate the ERP system. We hardly understand how the system supposes to work"

"We don't see any advantage of using this system; instead it takes so much longer time to do just one thing."

"Training is not well done, too short time to learn the system, and nobody really knows the system."

"Now, half of my time is wasting into putting the right data into the system."

Interviewees are quite frustrated by the ERP system, they think that using an ERP system to manage purchasing order create massive unnecessary works. Hence, some of them keep on working in the same way as they used to, this causes the deviation in Req-to-pay process such as invoices-on-hold and GRNI.

5.3.1.2 Employees from procurement department

From procurement department the main problem in managing purchasing order is to manage the invoices which are on hold due to various reasons. Such reasons could be, in one case, the fault from supplier forgetting to put purchasing order on the invoice, making it difficult to match such invoice with receipt. In other cases, buyers themselves create the incorrect payment term by stating wrong numbers of quantity and price, etc. However, the biggest difficulty deals with un-holding such invoices happened because of deviation in Req-to-pay process. As mainly the problem occurs due to the mistake made by requestors in creating the requisition, interviewees tend to express the human error in the system as the main problematic issue.

"The main reason why an Invoice is on hold is because there is a price difference between what is stated in the purchasing order and in the Invoice received."

"However, there are many "natural" situations to justify that an Invoice is set on hold. For example, purchasing order has not yet been received, incorrect in relation with delivery terms, and there are differences in prices because supplier do not consider additional things such as taxes when they send the Quotation."

"Sometimes it is because suppliers' faults that they don't attach purchasing order to the invoices. This creates more work for us."

"I believe that there is resistance against the use of new system from requestors, that's why they don't want to follow the standard procedure and behave accordingly."

5.3.1.3 Employees from finance department

When it comes about people from finance department, major difficulty in managing purchasing order is to solve the increased GRNI. As the GRNI account is directly linked to their responsibility, the task then is to maintain this account in order to have it stable. Interviewees noted that there are many motives causing the increased GRNI, as mentioned in the previous section. Nevertheless, the most important cause left by interviewees is that the level of GRNI increases due to the fact that people involved in the process earlier do not behave as they should according to standard operation procedure. The following statements are some phrases from employees in finance department:

"The main problem in operating purchasing order in Req-to-pay is to stable the level of GRNI. As we have external consultant checking our balance account, we have loads of work in solving this issue."

"If requestors and procurement proceed the process in accordance with standard procedure, it will make our job much easier in dealing with GRNI account."

"We tried to let them (requestors) know that they made mistake in creating requisition. But we have much work already to solve the problem they made; we don't have time to give them feedback and make them understand our work."

At present, those errors are solved manually by people from procurement and finance department. They usually track the invoices which do not have purchasing order and find the requestor who makes that requisition. Once they get the purchasing order for such purchase, they will have to do the whole process manually over it again in the system. As their jobs are dependent very much on persons in the beginning of the Req-to-pay process, they believe that if those people change the old working behavior and follow the standard operation procedure, the works afterward will smoothly follow.

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5.3.1.4 The second phase: KJ-Shiba workshop

Participants in the workshops were especially concerned about issues related to managing POs in the Req-to-pay process. There were two participants from finance department, two from procurement department, and two requestors. The session starts by we introduced the KJ-Shiba method as well as provided the steps of how to run the workshop to all participants. After that, it was participants themselves who proceed the session, we, instead, acted as observers and facilitators. In total the workshop took almost three and a half hours.

The initial question for participants is "What are the main problems in managing purchasing order after the ERP implementation?". Participants rephrased and rewrote the question until everybody understood the same thing, then the process continued. Each of them had answered 4 post-it notes and discussed upon their notes. All twenty-four answers were revealed and then were grouped into six groups. After finding the relation between those groups, it was the time to give points to groups, that participants believe it is important the most. After all, participants proposed the critical finding together with some suggested solutions.

The main findings from this workshop are *"The main problem in managing PO is the lack of understanding the standard procedure. However, lack of system training as well as overlook of understanding the employee behavior towards a new system is the causes of lacking in understanding the system procedure."*

As see in Appendix 1, the group that participants vote as the most important is lack of understanding the system's standard procedure. Subgroups within this group are mainly dealt with employee behavior as well vendor behavior against the use of standard operation procedure. According to participants, such resistance behavior is considered as the violation to ERP system. Most of participants agreed that the root-causes of lacking of understand the system procedure have to do with insufficient system training provided to employee as well as overlooking employee behavior toward a new system. As participants left the comment:

"It is significant for all users to understand the flow of the procedures and behave accordingly to standard operation procedure in Req-to-Pay process."

"The problem behind this issue is that people try to keep working in the same manner that they used to work before, instead of adapting to the system."

Moreover, many participants, particularly from requestor perspective, stated that the training provided for users was not well done. As users do not perceive any benefits of a new system, the training tended to be useless from the start.

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"Because we do not see any benefits of this system, training is just hopeless."

"There was not enough training for a new system."

"Nobody really understands and knows how the system works; we cannot get any answer from internal colleagues."

Another issue brought up by participants is dealing with vendor communication and behavior. Some participants, especially buyers working in procurement, mentioned vendors as one of the factors causing the problem in managing purchasing order.

"There is insufficient training provided to users and also vendors."

"The lack of vendor communication leads to higher level of misunderstanding and behaving accordingly to such mistaken process."

In sum, participants concluded that to improve the use of ERP as well as to manage purchasing order in the better manner, it is important that all users involved in Req-to-pay process:

- Understand the procedures.
- Understand how an ERP system works.
- Understand your own role.

5.4 How has (COMPANY) tried to solve the problems in increased GRNI and in managing purchasing order?

This part of the chapter presents the information gathered regarding our third research question, which is:

How has the company tried to solve the problem(s) identified in Research question 1 and Research question 2?

- *How has the company tried to solve the increased GRNI (with OR without the aid of ERP)?*
- *How has the company tried to solve the problems in managing Purchasing Order?*

5.4.1 First phase of data collection:

5.4.1.1 Documents

During the implementation of the ERP system, documentation regarding how to achieve balance in GRNI account was provided. The following is the main list of recommendations regarding this issue.

- Ensure that the information updated in the system regarding requisition of material or service is of high quality.
- Receiving must be performed in an accurate and timely manner. When material arrives, receipts should be entered into the system.
- One receipt per line should be made in order to improve the process of matching the POs with invoices.
- Ensure that the correct purchasing order number is written on the invoice.
- Never approve invoices that should refer to a purchasing order number. Do not approve invoices that contain items that should be paid through the system with a PO number.

These are general recommendations that are not mainly focused on one single department but on every department participating along the requisition to pay process. However, according to these recommendations, it is of remarkable importance that data is precise and well timed updated since the beginning of the process. Furthermore, later information updated regarding every transaction should be consistent along every department involved in the process.

5.4.1.2 Interviews

From the interviews it was identified that the issue related GRNI account has been followed up through a monthly basis report. At least one person from the finance department and one person from procurement department analyze this report. The GRNI report consists in aged items and largest amounts. By aged items they mean those items with more than 60 days into the system and, by largest amounts are those transactions with a higher value than 50, 000 Euros. The following are quotes gathered from employees involved in revising this report:

"During these meetings we check this report to identify errors with this account. We try to match invoices with POs."

"If we identify that there is an invoice with certain amount there is a transaction without PO in the system with the same amount, we ask users to do the PO in order to match it with the invoice."

"During these meetings we correct errors. We try to solve errors in GRNI together by tracking who made the requisition without putting PO and then try to put the PO on that purchasing."

The report is how they have been correcting errors causing an increased GRNI account, however, when asked about feedback to users regarding their errors this is what they answered:

"After monthly meetings that I have with finance department when we analyze the GRNI report, there is no formal follow up to every case."

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"Sometimes we send emails to users (requestors, buyers, suppliers, etc) but this is not all the time."

"Most of the times we just fix the problem manually without giving feedback to users."

"We have been solving the problem only at the end of the process, not really trying to fix the root-causes of such problems."

"Perhaps we should be stricter. For instance, inform to suppliers that PO must be generated for every purchasing. Otherwise, suppliers should not proceed."

Moreover, when the (COMPANY) identified that the number of errors generated in the system was increasing, they decided to approach this problem by reducing the number of approvers in IIPS system. In contrary to ERP system where every purchase requires a PO, the IIPS system manages those purchases that can be approved without PO. These are the reasons why they decided to decrease the number of approvers into the IIPS system:

"Kick-off project between finance and procurement, consisted in reducing the numbers of approvers in IIPS system. Before there are too many users having access to the system, that is why it was high possibility of making mistake."

"The fewer people involved in the system, the more proper training can be provided, and the lesser possibility to make mistakes. Hence, we decrease the number of system approvers and we will increase proper training."

5.4.2 Second phase of data collection:

5.4.2.1 KJ-Shiba workshop

Once every participant was able to express what they considered the main issues regarding managing purchasing orders, participants identified together what were the main solutions for challenges addressed. The end of the session was dedicated for them to try to identify solutions together. The main findings are related to the need of understanding the role of requestors, the need for measurement into the process, reducing and providing training to users operating the system and improving communication with vendors. The following provides an illustration of the suggested solutions:

"It is important to emphasize the role of requestors. By upgrading the status of requestors and giving the significance of such role, employees might feel motivated to ensure that the information is updated with high quality and in the proper time. Management team must also pay attention to that role."

"We should start measuring employee performance. Although (COMPANY) has started to measure the number of invoices on hold as well as the GRNI account, it is suggested that people measurement is needed. For instance recording requestor performance; how often he or she makes the mistakes, procedure deviations identified according to the standard operation. This can be done through KPIs measurement. In so doing, employees will become more aware of how to operate the process, and be an active user."

"It is unnecessary to have many users operating in the system, indeed, it is the opposite way. The more people involve on the process, the more training needed, the higher possibility to have some mistakes. It is better to have few people know the system very well, instead of having so many users involved where most of them use the system very seldom. Usually, when you learn the new system and you do not use it often, then all the training will be forgotten. Perhaps it would be better to Select a small group of requestors, one super user in each department, and provide them high and continuous training."

"Improving communication with vendor is another issue. It is required to have the right attention to vendor communication. By stating clearly what the requirements are according to the system and ask suppliers to behave accordingly. In doing so, we expect that the misunderstanding due to lack of communication will be solved."

6   Analysis

The chapter presents the analysis of empirical findings related to theories stated in relevant literatures. Firstly we discuss the main findings regarding the implementation of the ERP system. Secondly main findings related to the problems in managing purchasing order presented in previous chapter are explained through concepts stated in literature: cross-functionality, knowledge sharing, and user resistance.

During empirical data collection it was possible to identify that the phenomenon of increased GRNI is considered as one part of the problems in managing purchasing order. Hence, the analysis hence will be grounded on discussing the major challenges in managing purchasing orders (POs) in general, which includes issues related to increased GRNI account. Figure 4 demonstrates the focus of analysis for this study.
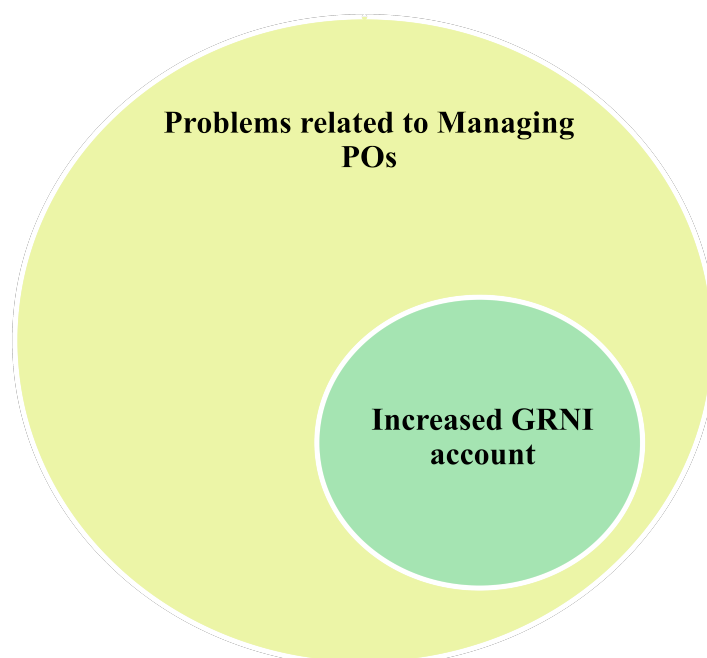
Figure 4. The focus of this study

According to data collected through interviews and KJ-Shiba workshop, the cause of difficulties in operating POs via an ERP system has to do with the implementation of the system itself. There are several key success factors of ERP implementation. Such factors are for instance technical fit, strategic fit, organizational fit, knowledge management, top-management support, business process re-engineering, user resistance (Kamhawi, 2007). Among them, in this paper, we stress the aspects of user resistance, cross functionality, and knowledge sharing. The relation of these three factors causes the problems in managing POs.

6.1 Implementing an ERP system at (COMPANY)

Interviewees, in particular users, commented that the process of the ERP implementation was not focused from management on dealing with user resistance. In this study, we refer to the paper by Aladwani (2001) studying the concept of change management in the ERP implementation. This is because that paper presents a process-conceptual framework of change management for successfully implementing an ERP that aims to solve the complex organizational problem of worker resistance to an ERP system. The framework consists of three phases: "Knowledge Formulation phase, Strategy Implementation phase, and Status Evaluation phase".

Knowledge Formulation Phase

The first phase, Knowledge Formulation, aims to identify and evaluate user attitudes toward an ERP system in order to identify sources of user resistance. Hence, this step should be done before releasing the system in order to develop strategy for managing such tendency of user resistance (Aladwani, 2001). Furthermore, the successful of change management depends highly on how change is introduced and communicated to all employees by managers. Two views of change were presented in literature review chapter: rational-linear view and systemic view. While the former refers to the situation where change is implemented only by top-management, the latter deals with change as systematic process involved knowledge exchanging and trust building along the process (Diefenbach, 2007; Mohrman & Lawler, Participative managerial behavior and organizational change, 2007).

Findings reveal that some problems related to managing POs in Req-to-pay process occur due to the difficulties in running and understanding the ERP system per se. (COMPANY) was forced to implement an ERP system in an intense time period. Furthermore, even though management level wanted to pay attention on what employees think about this implementation, unfortunately, top-management did not have any other option apart from accepted the change and moved on. This is because top-management of (COMPANY) received orders from higher hierarchical level of the main company that recently acquired them. Hence, some questions such as what users' needs are, what their beliefs and values they have, and what their interests are, never had a chance to be asked.

Implementing an ERP system within (COMPANY) lacks of systematic view of change from managers. The shift into a new system was purely done by managers holding rational-linear view of change. That is why the conflict of interests between management and operational level leads to some sort of employee resistance,

resulting in change failure. The root cause of this problem is a lack of interaction between decision maker and people who take action.

Implementation Phase

Following by the Strategy Implementation phase, managers might use the knowledge gained from a previous stage in order to set up appropriate strategies that can overcome user resistance (Aladwani, 1998). To change users' negative attitude toward a new system, the fundamental strategy is an effective communication. Many scholars note that messages regarding the benefits of the system as well as general description of how to operate such system have to be spread out in an effective way (Aladwani, 1998; Aladwani, 2001; Beaudry & Pinsonneault, 2005; Davis, 1989). Furthermore, the suggested strategy for influencing users' positive attitudes about an ERP system is dealing with users' perceived cost and benefits of the system. In general, employees are likely to refuse accepting a new system because of high perceived cost and low perceived benefits. It is believed that the message regarding the benefits and operation description sent effectively to all users are the factors enhancing users' positive attitudes. In so doing, the aid of group leaders might also facilitate user resistance as they can convince their followed colleague to adopt the system (Aladwani, 2001; Aladwani, 1998; Davis, 1989).

As mentioned that there was no input from users regarding issues like user needs, beliefs, and attitudes toward a new system, management did not find the proper strategy to deal with user resistance. Users did not perceive any clear message regarding how the new system will bring benefits to their own work in an improved manner. Moreover, the training provided for users was too short period of time without an insight understanding from persons whom really know the system. The other interesting point is that (COMPANY) did not use the key users in the Req-to-pay process to facilitate the implementation process. Group leaders were not used to spread the word regarding the benefits of an ERP system.

Status Evaluation Phase

The goal for this phase is to make sure that workers' anxiety and resistance to an ERP system are under control. Besides evaluating the work performance in general in order to ensure that the desired business outcomes are achieved, it is as significant to monitor the progress of ERP change management efforts by based on performance system. The results from this evaluation may offer the opportunity to managers to understand what actually went wrong (Aladwani, 2001).

We discovered that status evaluation was not conducted. This is neither the ERP change status, nor work performance. With all these reasons, not surprisingly the user resistance in adopting an ERP system is perceived rather high.

Due to inappropriate change management during ERP implementation, high user resistance in adopting an ERP for managing POs remains. This is because of no perceived benefits of the system in particular to their own work. We discover that no perceived benefits are caused by the lack of effective cross-functionality and the lack of knowledge sharing.

6.2 Factors causing problems in managing purchasing orders

Findings reveal that an ERP system was introduced and released even though (COMPANY) was not ready and did not manage factors such as cross-functionality, knowledge sharing, and user resistance. Figure 5 shows the relation of these factors.
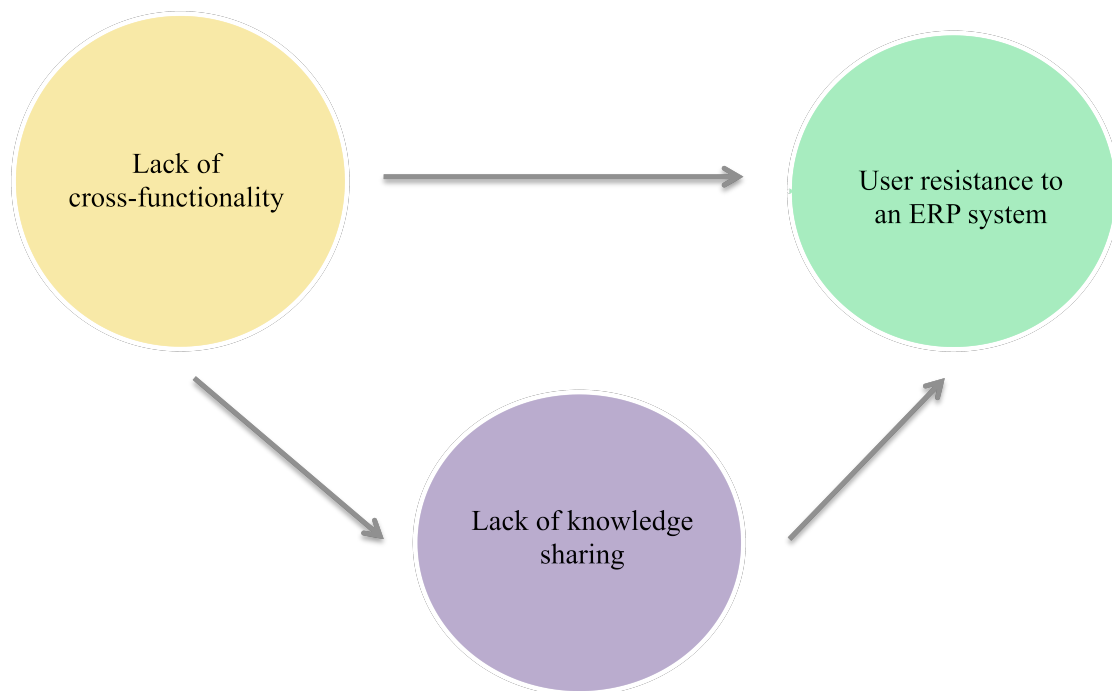
Figure 5. Factors causing issues regarding managing POs

6.2.1 Lack of effective cross-functionality

Cross-functional integration is one of the main benefits that ERP systems provide to a company (El Amrani, Rowe, & Geffroy-Maronnat, 2006). ERP systems facilitate cross-functional integration by embedding different business processes from diverse departments into a single system (Davenport, Putting the enterprise in the enterprise system, 1998).

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However, an effective ERP implementation goes beyond having a single system integrating information from different departments. The real value of cross-functional integration lays on improving the performance of a company by enhancing the actual cross-functional activities (Valle & Avella, 2003). Meanwhile cross-functional integration requires diverse departments to be embedded (Goodhue, Wybo, & Kirsch, The Impact of Data Integration on the Cost and Benefits of Information Systems, 1992), cross-functionality involves the creation of value out of cross-functional integration (Boland & Tenkasi, 1995). Accomplishing at some extent cross-functional integrations does not equal that perceiving cross-functionality (El Amrani, Rowe, & Geffroy-Maronnat, 2006). This means that even though companies implement an ERP system with the aim to increase the cross-functional integration, it does not necessary means that they will achieve cross-functionality if the actual cross-functional activities are not promoted.

At (COMPANY), based on this, it can be said that the ERP system facilitates cross-functional integration of departments involved in the process. Nevertheless, although cross-functional integration has been achieved by enabling a single system to manage the whole Req-to-pay process, there is still a gap to be fulfilled in order to accomplish cross-functionality.

Cross-functionality involves consciousness of the interdependencies between different organizational units and the importance that information sharing represents for them (Goodhue, Wybo, & Kirsch, The Impact of Data Integration on the Cost and Benefits of Information Systems, 1992). In this sense, based on the information gathered through interviews and workshop conducted at (COMPANY) show quite interesting findings.

Before the implementation of the ERP system, the Req-to-pay process used to be managed through three different systems. Using different systems to manage this process required several resources in order to integrate information. However, interviewees' perception regarding the quality of information converges in the sense that it has improved since the implementation of the ERP system. The ERP system has allowed the reduction of resources needed to integrate information, it is easier to track errors and having more accurate information that hence improves the decision-making process.

In order to integrate several organizational processes it is required for every member involved in the process to invest a considerable amount of efforts (Markus & Tanis, 2000). Meanwhile, cross-functional integration challenges the most classic management principle: functional specialization (Markus M. , 1983). Findings of this study show that although every employee seems commitment in accomplishing results, their efforts is not focus towards achieving common results but rather results

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for their own departments. Findings show a strong functional specialization involved in the process, which hence has hindered the achievement competition of goals along the process. It is imperative to clarify interdependence of tasks, roles and departments in order to improve the accomplishment of common goals.

The lack of cross-functionality has an important impact on issues regarding managing POs and therefore increased GRNI. The aim along the process is still functional specialization. Regarding how the process is internally managed, increasing levels of GRNI account and other issues related managing POs mainly occur due to mismatch information made by requestors in the beginning of the process. However, the finance department has been identified as the responsible for correcting this error. Findings indicate that it would be possible to decrease the amount of errors by improving communication and awareness between each department involved in the process. However, lack of awareness regarding what is the role that each department plays in the process and insufficient interdependences among them have counteracted efforts to achieve cross-functionality in the process. There is no clear understanding of each person involved in the process of how mismatch information affects other departments involved in the process.

Lack of effective cross-functionality in the process triggers some of the most common main causes of issues related to managing POs. Although an ERP system enables linking information together from different departments, there is yet no consciousness and focus on understanding the interdependencies between each department and how these affect outcomes of the process.

Although the Req-to-pay process is managed by one single system, results show that employees are not working in an integrated manner but are still working towards achieving fulfilling their own function. Employees have not a holistic perspective of what is their role in the process, therefore, there is no clear understanding of how the information updated into the system contributes or affects others from a different or from the same department.

Furthermore, departments have not yet set a target aiming at minimizing their responsibility for generating issues related with neither managing POs nor GRNI account. During data collection, it was possible to recognize that different departments have different perceptions regarding achievement of goals. Although an ERP system allows the cross-functional integration, findings also show it has been difficult to achieve collaboration and coordination among different departments.

The value of cross-functional integration lies in its capacity of improving the performance in the marketplace of a company. Achieving effective cross-functional integration would not only strengthen company's performance but also would allow

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interactive learning (Valle & Avella, 2003). Findings show that lack of effective cross-functionality in Req-to-pay process has hindered the development of an interactive knowledge sharing among different departments. Hence, we assessed the role that knowledge management plays for analyzing causes affecting problems related to managing POs in (COMPANY).

The implementation of the ERP system has represented an important change for (COMPANY). Despite all the benefits provided by this system, in terms of information gathering from different departments, there yet has not been possible to accomplish cross-functionality. Hence, findings show that lack of cross-functionality has caused lack of knowledge sharing among different departments involved in the Req-to-pay process. Therefore, we considered quite relevant for the study to analyze what were the implications that lack of knowledge sharing would represent for issues related to managing POs in the Req-to-pay process.

6.2.2 Lack of knowledge sharing

In order to emphasize the importance of knowledge sharing, the concept of knowledge management is brought up. Knowledge management is concerned about the development of knowledge assets of an organization in order to achieve organizational goals. Moreover, knowledge management attends to manage change and culture by striving to transform tacit knowledge into explicit knowledge, hence enabling accessibility of knowledge within the organization (Davenport & Prusak, 1998). Knowledge management brings many benefits to companies for instance enhancing intellectual assets management, maximizing operational efficiency, improving customer and competitor intelligence, increasing product and service innovation, minimizing time to market, preserving continuous improvement and mainly increasing organizational learning (Kostas, 2009).

ERP systems are not knowledge management systems but an instrument that strives for reducing management efforts for collecting, storing and utilizing information. By doing so, management can focus on analyzing and contextualizing information in order to translate it into knowledge. ERP systems should allow management to concentrate its efforts mainly toward knowledge-based activities in order to generate meaning out of information, spread such meaning to others and filter knowledge in order to find solutions to current or future problems (Chan, Walker, & Mills, 2009).

The implementation of the ERP system should facilitate (COMPANY) to increase its knowledge-sharing opportunities by allowing users from different functional areas to communicate using a single system. Additionally, the value of knowledge management lays on its capacity of allowing multi-disciplinary groups to reinforce

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and leverage knowledge flows produced by heterogeneous sources (Mohamed, Stankosky, & Murray, 2004). Findings of this study show that issues related to managing POs in the Req-to-pay process are aggravated by insufficient communication among departments involved in the process. Hence, although the ERP system has been implemented there is yet the challenge regarding achieving effective communication in the process, leading to challenge in accomplishing knowledge sharing within (COMPANY).

The ERP implementation is relatively recent for (COMPANY) hence there are still interesting challenges to be achieved in terms of promoting knowledge sharing within company. Findings indicate a strong inertia towards proceeding according to what employees used to manage the process before the implementation of the ERP system. Although training has been promoted along the ERP implementation process, there is no special focus on promoting knowledge sharing. Moreover, problems related to managing POs have been solved mainly at the end of the process by the finance department.

Even though there are monthly sessions between members of finance and procurement department dedicated to review the GRNI report, these are focused on correcting errors. Although there are feedback emails regarding errors updated by users, there is no formal feedback or special attention to correct the root causes of the problem. The main focus of these sessions is to correct problems yet not to prevent them. Hence, by not focusing on providing feedback, it could be interpreted that knowledge sharing is not being encouraged.

Knowledge management is facilitated by four pillars; leadership, organization, technology and learning (Stankosky, 2000). These same factors are at the same time relevant for enabling cross-functionality (Mohamed, Stankosky, & Murray, 2004):

<u>Leadership</u>

The importance of leadership lays on its capacity of mobilizing and achieving engagement of middle managers in order to promote an appropriate environment to facilitate widespread information sharing (Stankosky, 2000). Leadership can establish the multi-level context to enhance knowledge management practices. Knowledge management and cross-functionality permit management levels to overcome resistance to change and deter existing communication barriers within the organization (Pan & Scarbrough, 1998).

Interviewees emphasized the flexibility and openness of (COMPANY) and its horizontal structure. During every interview conducted it was possible to identify employees' engagement and commitment to the company. Therefore, perhaps

management levels have succeeded at promoting an open environment for knowledge sharing among employees but not at setting a clear strategy that motivate this concept. The focus has been correcting but not specially controlling and preventing errors regarding managing POs, therefore it is crucial that management level gives priority to this issue and set a strategy that considers the importance of knowledge sharing. The main challenge is creating a strategy that clarifies the role that each employee plays in the system and their interdependencies in the process considering actions to enhance the cycle of knowledge in the process.

Organization

Traditional organizations with strong internal competition, strict functional silos and excessive compartmentalization tend to create barriers for departments to be isolated and disconnected. Knowledge management aims at facilitating collaboration within the company in order to set the appropriate environment for capitalizing from employees' intellectual capabilities (Stankosky, 2000).

Findings indicate most common challenges regarding managing POs have been caused by the tendency for departments to work mainly isolated. Hence, it is quite important to motivate and promote the creation of feedback loops and improvement of communication in order to attack challenges in terms of rigid functional organization structure identified in the Req-to-pay process.

Technology

Knowledge management considers technology as an enabler not yet an end-solution. ERP systems and knowledge management are complementary in terms of allowing the company to achieve efficiency and flexibility in the organization (Chan J. O., 2009). However, empirical results show that although the ERP system has enabled cross-functional integration the company is yet struggling in achieving knowledge sharing among different functional areas. As mentioned earlier in the section of cross-functionality, implementing an ERP system as the mean to facilitate the cross-functional integration does not mandatory mean that companies achieve the benefits of cross-functionality. As an ERP system is just a tool, to promote the knowledge sharing, companies have to still motivate it through its employees.

Learning

Organizational learning is enhanced through knowledge sharing among different functional areas of the organization. Enabling the interaction of different functional areas can maximize knowledge flows within the organization. The interaction of cross-functional integration and knowledge management reinforces benefits that one provides to the other and vice verse (Mohamed, Stankosky, & Murray, 2004).

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Due to the strong correlation between knowledge management and cross-functionality it is crucial for the company to enhance its cross-functionality in order to achieve the benefits that the interaction between different functional areas can produce increase knowledge flows in the process. This means that by promoting the cross-functionality, (COMPANY) enhance the learning process between different departments, leading to increased knowledge sharing.

Many scholars comment that even though organizations implement an IT system such as ERP system in order to increase their competitiveness, the result of such implementation rather disappointing. This mainly has to do with employee behavior toward technological shift; because their attitude upon the new system could affect their work performance(Lai C. L., 2008; Winston & Dologite, 2000; Dongseop, Youngho, & Randall, 2009). Additionally as seen in the data collected through interviews and KJ-Shiba workshop, one of the main challenges in operating POs through an ERP system deals with employee behavior toward such system. Hence, this subject is relevant for this study.

6.2.3 User resistance to an ERP system

Change in intra-organization power distribution, due to the new system, is defined as one of the root causes of user resistance (Markus M. , 1983). Because, often when the new IT or IS system is implemented, the interaction between characteristics of such system and the social context of its use will change. This hence leads to the loss of power which frequently resulting in the resistance by users.

Source of user resistance also has to do with user habits. Implementing a new system may change the way they worked before, users may perceive quite high risk in adopting the new system. This is because users may believe that in adopting a new system, they may lose their ability in working the old way (Aladwani, 2001). Indeed this demands more time and resource in getting used to the new system; this hence has to do with perceive high cost in order to learn the new system.

In the case of (COMPANY), the power issue is importantly noticed. The findings review that users have less freedom in managing POs in Req-to-pay process with the use of an ERP system. The other thing is that when it comes about net equity, users especially the requestors and needers tend to perceive net inequity (users perceive cost more than benefits). As they are quite used to with their old habits together with high perceived risk of an ERP system, users are unlikely to accept the system. With all these, users in (COMPANY) have quite high resistance in accepting and adopting an ERP system in order to use as the mean to manage POs.

6.2.3.1   A Status Quo Bias Theory

When it comes about user resistance due to old working habits, the Status Quo Bias Theory could explain such issue quite well. A status quo bias perspective refers to the resistance in user decision making in adopting new IS that happens due to the bias in preferences to stay with the current situation(Kim & Kankanhalli, 2009). Status Quo Bias explanations can be defined in terms of three main categories: "rational decision making, cognitive misperceptions, and psychological commitment"(Samuelson & Zeckhauser, 1988).

Status quo bias among users at (COMPANY) can be described based on these three categories. For an in-depth explanation of each category, see appendix 2.

Rational decision making

Since users perceive very little benefits of an ERP system, they interpret the use of system create high cost in terms of both transition and uncertainty cost. In fact, many interviews stated that they needed to invest a lot of time in adapting to the system as well as they perceived rather high risk in associated to such system because they were hesitant whether the system brings any benefits to them.

Cognitive misperceptions of loss aversion

Employees at (COMPANY) are reluctant to operate the POs via ERP system because they interpret the loss aversion quite high. It means that employees perceive loss, particularly in their ability they had through experiencing the old systems to an ERP system, larger than value perception of operating through the ERP system.

Psychological commitment

There are three related costs involved in psychological commitment: sunk cost, social norms, and efforts to feel in control. For (COMPANY), employees lose their competences in operating POs gained from experience with the old system; they consider this lost as sunk cost. Moreover, as (COMPANY) does not apply the strategy saying about the importance of group leaders in convincing other colleagues, the social norms related to technological change is caused rather nuance or even negative toward the system. Interestingly, the effort to feel in control is considered as the biggest cost. This is because employees had much more freedom in deciding their own situation before, but an ERP system somehow forces users to do or not to do according to only what is stated in the standard operating procedure.

To have a good understanding of employee attitude and behavior toward technological change, two models: Technological Acceptance Model (TAM) and Expectation Confirmation Theory (ECT) are chosen to explain such phenomenon.

6.2.4 Technological Acceptance Model (TAM) and Expectation Confirmation Theory (ECT)

As mentioned in the literature review chapter, each theory individually cannot explain employee behavior well enough, the combination of these two theories, hence, is recommended(Lai C. L., 2008). Since the integrated model is helpful in understanding how pre-deployment attitude influences use-stage attitude and actual use of a new system. It means that when users are introduced with the new system, their attitudes are mainly based on two factors: perceived usefulness and perceived ease of use, according to TAM. However, as users have experienced using the system, their satisfaction will be now laid on their expectation of the system as well as the confirmation of such expectation. In other words, users' satisfaction and behaviors on the new system are derived from their prior attitudes about that system and indeed these attitudes will change according to their usage experiences which will affect their actual behavior.

In the situation at (COMPANY), it seems like the company failed to manage employee behavior from the pre-implementation. As shown in empirical results, most users have quite negative attitude toward an ERP system from the beginning. To be related to TAM, it can be concluded that negative attitude toward the ERP system is caused because these employees do not perceive any usefulness to their own work, neither ease of use for an ERP system. That is why their prior attitude upon the use of an ERP system is quite negative, leading to resistance in adopting the system. This could be explained for many reasons, for instance, the implementation period was too short and intense, there were not enough training or if so it was not related to their role in the system after the implementation. As users did not receive any message stating the advantage of this system for their own work, they believe that the use of an ERP system does not bring any value to their daily work. Thus, they tend to resist adopting the system from the start.

After one year of experiencing an ERP system in (COMPANY), the Expectation Confirmation Theory (ECT) is brought up in order to explain how the actual experience could affect user behavior in the new system. The model posits that the user satisfaction is determined by two constructs: the expectation of a new system and the confirmation of such expectation that follows the actual use (Bhattacherjee A. , 2001).

Employees at (COMPANY) hold rather negative attitude toward an ERP system from pre-implementation phase, their expectation upon this system was rather the same way. It means that since they do not perceived any benefits of operating an ERP system, and indeed they perceive quite high cost (need more time and competence to operate), their expectation about ERP system is rather nuanced from the old system. Surprisingly, results from interviews and KJ-Shiba show that employees found an ERP system useful once they have experienced using the system. Even though, there are much more work to do, the quality of the work has been improved.

However it is crucial to highlight that the quality of information was especially relevant for departments involved in the final part of the process, the finance department. Improving information quality is perceived as an advantage mainly for departments working in the end of the process, however departments working at the beginning of the process such as requestors from production or maintenance department do not assessed a direct benefit for their departments. To be more specific, managing purchasing order in Req-to-pay process, as requestors initiate the process, they have to carefully put data such as purchasing specification into the system. Procurement and Finance department will then receive such data and continue the process. If the data received is correct, their work tend to follow smoothly, no error that they have to solve later. In contrast to employees working as requestors or needers, due to the standard operating procedure, they rather have more work to do such as more steps and stricter process. As a result, even though they realize that the system brings value to the company, they still think that for their own value they have much more and unnecessary work to do just for one thing, compared to operating Pos through the old system.

This can be interpreted that employees face disconfirmation from their expectation, as they did not expect any high value of manipulate an ERP system, however, the work results show an improvement. Especially employees working in Procurement and Finance department are likely to appreciate the use of ERP system in operating POs, because an ERP forces people to follow only according to what is written in the system, and this could decrease the mistakes made by requestors.

We notice that the reason behind why users do not perceive benefits of an ERP system is because the measurement has not been conducted. Research shows that constant measurement and monitoring are the most important drivers behind companies achieving success (Sugianto, 2008). Therefore, since employees do not have the report stating their performance in an ERP system, it is difficult for them to assess what is the individual impact on the system for the achievement of the common results.

7 Conclusions and further studies

This chapter presents the conclusions of this study together with some suggestions for further studies.

7.1 Conclusions

The purpose of this study was to investigate bottlenecks of organizational change in Requisition-to-pay (Req-to-pay) process due to ERP implementation at (COMPANY). From a pre-study phase, we found out specific issues affecting financial performance of the company. Firstly, we identified the factors causing an increased GRNI. Secondly, we wanted to see such factors causing increased GRNI could be generalized to problems related to managing purchasing orders (POs) in Req-to-pay process. Thirdly, we investigated how (COMPANY) has tried to solve problems regarding increased GRNI and managing POs.

Findings reveal that issues related to an increased GRNI are one part of the problems in managing POs. Therefore, our focus is laid on discussing the major challenges in managing purchasing orders (POs) in general. We discovered that problems in managing PO are triggered by the implementation of the ERP system per se.

We discovered that the process of ERP implementation was not focused from management on dealing with user resistance. In fact, the analysis showed high user resistance against the use of an ERP system. Results indicated that main factors causing user resistance are the lack of effective cross-functionality and the lack of knowledge sharing.

Even though an ERP system is used as the mean to increase cross-functional integration, it does not necessarily mean that companies implementing the ERP system will achieve cross-functionality. Findings showed that problems regarding managing POs are caused by the lack of effective cross-functionality and the lack of knowledge sharing among departments within (COMPANY). Findings furthermore illustrated that the lack of cross-functionality leads to lack of knowledge sharing.

Based on analysis, we come up with recommendations for current situation regarding managing POs and for second phase of ERP implementation. To deal with problems related to managing POs, (COMPANY) has to enable cross-functionality by promoting cross-functional team. Furthermore, the concept of knowledge sharing has to be encouraged by management team among different departments. In so doing, we believe that user resistance to the ERP system will be decreasing. However, (COMPANY) has to conduct the measurement of both employee performance and ERP performance in order to evaluate the results. In terms of

evaluating employee work performance, we suggest the use of Key Performance Indicators (KPIs).

For the second phase of ERP implementation, we recommend that during training sessions, (COMPANY) should encourage the systemic view of change among managers as well as promoting high involvement from both managers and employees. Last but not least, it is significant to promote cross-functionality in the process involved different departments in order to facilitate the knowledge sharing process.

7.2 Further studies

For further studies, it would be interesting to study the implementation of our recommendation for both current situation regarding managing purchasing orders and second phase of ERP implementation. We suggest the combination of qualitative and quantitative research approach would allow the possibility to evaluate the results and identify improvements. Additionally, conducted a detailed analysis of the departments involved in the second phase of implementation in order to provide the more specific recommendation according to their needs. Since the focus of this study was on the internal factors, further research can be done through analyzing similar situation and assess how the results can be changed by considering external factors such as suppliers. Another suggestion is that the study of problems related to managing POs in Req-to-pay process due to an ERP implementation can be analyzed for different company cases in order to find the similarity and difference with this study.

8 Recommendations

The chapter provides recommendations given to (COMPANY), it is divided into two sections. The former one provides the recommendation of how to solve the problems related to managing purchasing order with the use of an ERP system in Req-to-pay process efficiently and effectively. The latter one provides general suggestion for the second phase of ERP implementation in different processes.

8.1 Recommendation for the current situation in Req-to-pay process

To set up the ground for managing purchasing orders in Req-to-pay process, it is necessary to reduce user resistance to the ERP system. As seen in the previous chapter, the high user resistance is shown because no perceived value of an ERP by users. This is especially the benefits of an ERP to their own work. It is important to stress that messages regarding the value of an ERP system to an organization as well as to individual work must be communicated clearly to all users. In so doing, group leaders might be way to facilitate this process. By stressing those messages to key users, they can encourage their colleagues to have positive attitude toward the ERP system, leading to adopting the system. Because Req-to-pay process involves different departments to work together, it is as vital to increase the awareness of users of how their work has an impact to others.

Such awareness can be achieved by enabling cross-functionality in the process. Cross-functionality can be created by the use of cross-functional team that helps employees to understand their interdependencies within the process. The benefits of cross-functional teams go beyond knowing their own responsibility; the main advantage deals with a common overview of the process. Since Req-to-pay process involves different people from different departments, it is not enough that those people hold functional specialization; they should be able to see broad perspective.

Because of the diversity of cross-functional team members, there is high possibility to have misunderstandings and miscommunication among members. Thus, to reduce misunderstandings, it is recommended that all members should participate in establishing clear and consistent goals. Clear and consistent goals enable the generation and creation of a reference frame for achieving common tasks and outcomes within members of the cross-functional team (Pinto, Pinto, & Prescott, 1993). Because they have different perspectives so they can generate together a broad solution for common problem. In doing so, the higher level of results can be accomplished due to the member commitment.

Cross-functional teams can facilitate knowledge sharing (Santa, Ferrer, Bretherton, & Hyland, 2010). As members share the common goals and develop the same understandings to find the solution to problems, the knowledge is transferred among members within a team.

There is a strong link between cross-functionality and knowledge sharing. The real value of knowledge sharing lays on its capacity of allowing multi-disciplinary groups to reinforce and leverage knowledge flows produced by heterogeneous sources (Mohamed, Stankosky, & Murray, 2004).

In order to promote knowledge sharing among employees, the concept of knowledge management is brought up. Four factors facilitating cross-functionality and knowledge management are (Mohamed, Stankosky, & Murray, 2004):

The use of group leader

We see the importance of group leaders because they can promote an appropriate environment to facilitate widespread information sharing and achieve engagement (Stankosky, 2000). Therefore, we suggest that group leaders can be used as the mean to transfer the information regarding objectives and results generated by cross-functional team.

Overcome rigid functional structure

Furthermore, cross-functional team can overcome strict functional silos in Req-to-pay process by creating feedback loops and improving communication among departments. It is necessary to make sure that such information is spread not only within cross-functional team, but also everyone involved in the process.

Boost the use of an ERP system

The implementation of an ERP system is used as the mean to facilitate the cross-functional integration. However, it does not mandatory mean that companies will achieve the benefits of cross-functionality by only implementing such system. The appropriate use of the system should rely on promoting the knowledge sharing among different areas updating information in the system.

Promoting learning

By promoting cross-functionality, (COMPANY) enhance the learning process between different departments, leading to increased knowledge sharing. We recommend (COMPANY) to promote cross-functionality in order to achieve the benefits created

by the interaction between different functional areas that hence increase knowledge flows in the process.

The other significant fact we have noticed is that there is the lack of measurement in Req-to-pay process. Therefore, we propose the use of Key Performance Indicators (KPIs) as the mean to evaluate the employee work performance.

Key performance indicators (KPIs) assess the business health of the company and ensure that all members are working towards the same goals and strategies (Kent, 2004). KPIs should be clearly defined targets created to facilitate accountability of results through benchmarking and to track the progress of projects.

As mentioned in the literature review chapter, we suggest (COMPANY) follows four main criteria for selecting the most appropriate performance indicators are relevance, reliability, comparability and consistency, and understandability and representational quality (Carlucci, 2010).

In terms of cross-functional team that we mentioned earlier, (COMPANY) should select employees participating in cross-functional team whom have broad and insight understanding of the Req-to-pay process and their own department. We suggest having monthly meetings in order to evaluate the work performance (KPIs), discuss upon common problems related to the Req-to-pay process and find the solution together.

8.2 General suggestion for the second phase of ERP implementation

The suggestions are based on the findings from phase one combined with literature review. To implement an ERP system for the second phase, we strongly recommend (COMPANY) follow the framework of change management by Aladwani (2001). The framework of change management strategies consists of three phases: (1) Knowledge Formulation phase: identifying and evaluating user attitudes toward an ERP system in order to identify sources of user resistance, (2) Strategy Implementation phase: setting up appropriate strategies that can overcome user resistance, and (3) Status Evaluation phase: evaluating the work performance and monitoring performance of an ERP. The focus on these three phases is to develop the strategy to create positive attitude toward the ERP system. Noted that resistance can be managed by making users know what the benefits of an ERP system are.

The managers' perceptions and understanding towards change could also affect the employee resistance (Diefenbach, 2007; Mohrman & Lawler, Participative managerial behavior and organizational change, 2007). We propose managers to

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develop a systemic view of change where managers perceive change as a systemic processes focused on knowledge exchange, trust building, and cross-functionality in preferences and value. This type of perception of change requires interaction between managers and employees to discuss upon problematic issues in order to generate aligned goal for common solutions.

It is suggested that when managers adopt the systemic viewpoint of change, they have to enable the high involvement from both management and employees in change process. We recommend (COMPANY) to promote the concept of participative managerial behavior where the focus lays on human development, supporting information and knowledge sharing, and especially the significance of cross-functional participation. Being participative managers involves getting employees to (1) 'know more': providing employees information about jobs and business, also developing them to perform new task, (2) 'care more': taking into consideration the employees' motivational environment in order to make jobs motivating and connect desired performance to value outcomes, and (3) 'contribute more': enabling employees to contribute to work even more by providing enough resources, giving clear expectations and feedbacks, and importantly let everybody participate in the decision making processes (Saskin, 1984).

Beside management involvement, employee high involvement is quite relevant. In particular, when employees participate in decision making process, they are more satisfied and likely to accept change. Through participation, employees can help deciding the working condition, the nature of the job, and expected outcomes rather than waiting for the company to take care of these areas. By involving employees in the implementation process, the likelihood that they are satisfied with the system as well as accept such system is rather high.

According to findings from the first phase, in order to improve the training session for the second phase of ERP implementation, we propose (COMPANY) follow these specific aspects.

- Providing users with comprehensive training and especially allowing sufficient time during the training period so they are able to use the new system in an appropriate environment.
- Presenting to employees how the companies' business processes function in the new system environment.
- Management team must understand what new skills for users will be needed and facilitate them to get such right skills.
- Providing focused training to users according to what will be their role in the system and stressing the impact of users' role to others, as well as giving general overall of how the system works.

- According to what is going to be their role in the system, users should create the list of their requirements so they can have specific questions to the trainers implementing the system.
- Beside outside trainers, (COMPANY) should build internal trainers who are familiar with company's business process and employees, to ensure that such trainers understand how the ERP system works within the companies' business.
- Training sessions are conducted by internal employees who are quite familiar with the companies' business processes.

Meanwhile, we suggest that (COMPANY) should continue promoting knowledge sharing among different departments in the company. This can be done through building cross-functional team in order to ensure the cross-functionality. In so doing, we believe that user resistance will be under control and second phase of ERP implementation will be successful.

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10 Appendix

10.1   Appendix 1: Results from KJ-Shiba workshop

GROUP 4 (3 Points)
LACK OF COMMUNICATION BETWEEN VENDORS AND (COMPANY)
•The deliverer/supplier doesn't receive the PO.
•Invoice have no reference to PO number.
•Vendors seldom or never refer to the PO number on the invoice.

GROUP 3 (7 Points)
INCORRECT PROCESSING OF RECEIPTS
•Suppliers do not send invoice on time after delivery of goods.
•Receipts do not make reference to PO number (Invoices on hold).
•Requesters tend to forget to make the receipt in Oracle when goods arrive.

FACTORS AFFECTING MONTH END CLOSING
•Receipts are not done in the correct month.
•Due to the segregation of duties, creating a PO could take a long time (1-3 days).
•This could be a problem during the month end.
•Need focus/time from several resources to get all documents in place for requisition, approval of requisition, creating PO and receiving into ERP system.

TECHNICAL PROBLEMS WITH ERP SYSTEM
•Some system technical faults (errors).
•Some faults from the system in converting information about vendors, especially payment terms.
•The ERP system does not allow PO to have status field for confirmed and delivered.

GROUP 1 (15 Points)
INCONSISTENT INFORMATION BETWEEN STAKEHOLDERS
•The payment terms are not set up according to the agreement, leading to interest on late payment.
•POs often are associated to the wrong accounting (Department).
•Needer provides incorrect specifications of the purchase to requestor.

REQUESTOR/PURCHASER BEHAVIOR
•The department of Shared Service Center matches wrong invoice against the PO in the ERP system.
•The correct currency is seldom considered when withdrawing articles from the system.
•Receiving of goods where requisition have been placed in Core application (module of ERP system) and receiving is performed in IPROC application (module of ERP system).

MAJOR VIOLATIONS AGAINST STANDARD OPERATION PROCEDURES
•There are too many cases where the invoice arrives before the PO is made.
•Needer do not inform to requestor that goods have been received. Therefore, receipt is not created.
•Purchases are done without PO.
•Mismatch between quote generated by suppliers and requisition created by the (COMPANY).

GROUP 2 (11 Points)
LACK OF ADDITIONAL TRAINING
•It takes time for people to learn the system and its possibilities.
•Everything in Oracle is in english, not everyone understands it very well.
•Not everyone knows the standard operation procedures well enough.

10.2 Appendix 2: Three main categories of the Status Quo Bias Theory

Status Quo Theory category	Rational decision making	Cognitive misperceptions of loss aversion	Psychological commitment
Explanation	An assessment of costs in relation to benefits of change (such as net benefits) before switching to a new alternative Costs are greater than benefits, this leads to status quo bias. Two types of cost: transition costs implies the costs that incur in adapting to a new system, uncertainty cost represents the costs happened due to the users' psychological perception of risk associated with a new system.	Loss aversion is a psychological principal in human decision making in the way that losses become visible larger than gained value perception.	Three main factors sunk cost, social norms, and efforts to control. Sunk cost: previous commitment includes any kind of skills related to previous way of working which will be lost due to a switch to a new system. Social norms are related to norms prevailing in the work environment about such change, such as colleagues' opinions. Efforts to feel in control arise from desires of individual to decide their own situation.