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Exploring the Gap between Business and IT – The Customer Perspective

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Abstract. As global companies become more mature in their application of Enterprise Information Systems, their organizational structure also tend to converge towards specialized IT functions. The purpose of this study is to highlight how customer value is included in development of IT solutions and business processes in large organizations. The study is an explorative case study design including a cross-functional interview study counting thirteen participants. Thirteen Managers from IT, marketing, and logistics were targeted in the interview study. It has been found, that the development process of information systems in a large organization is perceived as a struggle between the global IT-department and the business units of the main organization, and customer value is not directly included in the development process. While the employees of the business units focuses on solving internal problems using IT, the IT-department focuses on broad solutions with internal efficiency in the IT-solution. The challenge is proposed to be rooted in different mindsets between IT and sales/marketing managers, which not only creates strains in the current situation but at the same time keeps the situation frozen in the existing form. There is no existing research on the relationship between customer value and IS-development in the distributing organization, and therefore the arguments of this paper are not directly linked to other research upon IS and customer value. Since the research is a case study, it is recommended to repeat the research in other organizations to test the reliability of the findings. This study provides new insight into understanding the factors of IS development in large organizations, and the findings are used to propose future areas of research within.

Keywords. *Information Systems Development and Implementation, Customer Value, Information Technology.*

1. Introduction

The field of Enterprise Information Systems (EIS) is at a crossroad. The commercial and standardized Enterprise Information Systems such as SAP or Oracle are almost ubiquitous in every business [1]. The functionality of these integrated packages have evolved from being mere ERP systems over CRM, SCM, PLM etc.

towards being comprehensive business suites spanning most business processes in a large variety of industry segments [2].

Enterprise systems are used in most global organizations today to handle information sharing and support business processes. The enterprise system is managed by a global IT-department, responsible for development and ongoing improvement and implementation of IS processes in the system. To most global organizations, any process initiative requires changes in the enterprise systems, and to many large organizations, this activity is a bottleneck and thus inhibits agility. This is identified as the gap between the IT and the business. This paper will explore the gap between business and IT and taking the customer perspective. First we will present the perspective, then we define the methodology of the study, and in the preceding sections we outline the result and discuss the implications. Finally we put forward the conclusions and suggest further research.

IT-value chain

Enterprise systems have transformed from mere ERP systems towards business process platforms. This new generation of enterprise systems provides a platform for executing business processes. Business Process Management (BPM) provides a link between IT and business, and the management of this value chain is critical to achieve the benefits and full potential of the chain. BPM is essentially a decoupling mechanism of information technology from the business. The consequence of this approach is that IT must be repositioned in the organization as a provider of services rather than infrastructure and applications, which is referred to as process-centric IT [3].

BPM enables agile business processes, but agility is not required for all business processes. Only the core business processes need to be IT-supported and automated. Most business processes have no strategic value and they can be managed based on templates or best practices. However, the key processes that differentiate an organization and provide high value to the customer need to be agile and innovated. Figure 1 illustrates the structure of the BPM-based IT-value chain. This model is adopted as hypotheses for the case study.
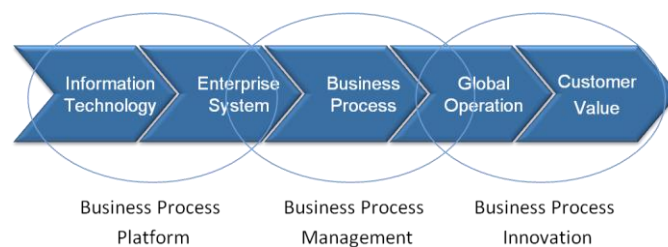

Figure 1 The BPM-based IT-Value Chain

This model proposes that the value chain is essentially resulting in and driven by customer value. In order to utilize the model, the phenomena defined as customer value is central for understanding the purpose of the value chain.

Customer value

The concept of customer value is an ambiguous phenomenon, which has been of interest especially within marketing research literature in recent years [4-5].

Customer value can be defined in many ways for the single main purpose of understanding the reasons for customers to purchase products from their distributors: "The customer value approach attempts to identify how people evaluate competing offerings – assuming that they make their purchasing decisions, they do so with 'value' as their key driver" [6]. There is little doubt that these reasons are complex and ambiguous sometimes even for the customer themselves. It involves many factors such as complex rational and irrational decision patterns, whereof only some are affected by distributor variables such as price, quality, service or purchase opportunities [4-5]. Value can be defined simply as the ratio of perceived benefit to perceived cost [6], however perception of benefits and costs are contingent and complex entities [5]. In this context the value exchange model, depicted in Figure 2 is utilized as a model for customer value.
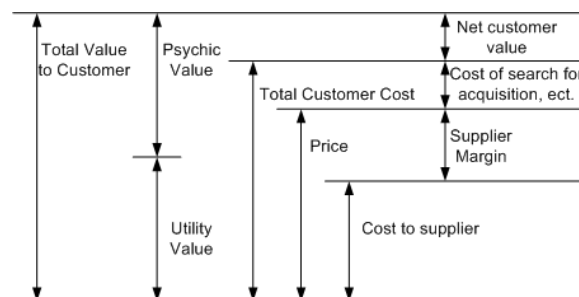
Figure 2 Value exchange model, adapted from [5].

Through the model it is shown that elements like supplier costs, price and additional customer costs (for instance purchasing and/or delivery time, logistic related costs, etc.) are central to customer value. These elements are primary measurable entities, which can be exploited by distributors to develop appropriate business processes to match the contingent value distribution in the respective markets. The more ambiguous parts of the value exchange model includes complex elements as psychic value, which is an internal and individual parameter only partial susceptible to external influence. Even though the concept is complex and difficult to manage, there is still relevance in pursuing to manage customer value as much as possible. Companies who know how to increase customer value compared with other competitors in the market will have a competitive advantage. Management of customer value is especially relevant in increasingly competitive markets, where customer power and thus customer expectations increases [4].

Up until recent years, global organizations at large have increased focus on internal optimization of processes like manufacturing processes and logistics [7]. This focus could be called a company centric view, as the center of this focus is the company. When including customer value in the managerial arena, this implies a new focus, which is named a customer centric view. In the customer centric view, it is the customers and increasing customer value, which is the main focus. "The core of customer centric business processing is to know and understand customers, to treat them as they expect to be treated, to anticipate their needs and respond positively to their actions" [7]. Optimization of internal processes is still relevant, but only when it is meaningful in the context of customer value. This is a radical shift in focus as many managers internal in large organizations generally do not focus on customer value.

This especially applies to the IT-value chain and the gap between business and IT. It is proposed here, that in the struggle to develop strategic and social alignment between business and IT to improve the internal part of the IT-value chain, customer value is not included.

Stakeholder theory

Applying stakeholder theory to the IT-value chain provides a basis for a case study exploring the factors included in the so called gap between business and IT. Through this model, the stakeholders of the IT-value chain can be identified, especially concerning the IT-business gap. The concept of stakeholders was first utilized in the 1960'ties and originally defined by the Stanford Research Institute as "those groups without whose support the organization would cease to exists" [8]. In 1984 Freeman published the book 'Strategic Management: A stakeholder approach, which was the initiation of research on the stakeholder concept [9] [10]. Since then the concept has developed as an area of research within organizational theories, developed rapidly and a vast amount of research articles have been published under the emerging concept 'stakeholder theory'. Stakeholder theory has its origin in Freeman's stakeholder model from 1984, and has been criticized for not being an actual theory [11]. In stakeholder theory it is originally argued, as opposed to the economic model, that "all persons or groups with legitimate interests participating in an enterprise do so to obtain benefits and that there are no prima facie priority of one set of interests and benefits over another" [9]. Today it is normal to distinguish between 'primary' and 'secondary' stakeholders, where the primary are those actors who have a direct and contractually determined relationship with the organization, and the secondary are at the borders of the organization and may be impacted by the organization without a contractual relation to it [12]. Furthermore there can be distinguished between internal and external stakeholders.

The stakeholder theory is today broadly utilized not only to analyze companies but also in analyzing process stakeholders. Process stakeholder analysis is a common discipline, and the concept is equal to the stakeholder theory however sized down to a single process within an organizational setting [13];[14]. The stakeholder analysis allows for both researchers and process managers to develop a map of the stakeholder

groups and their individual interests in the process. This is relevant in IT-value chain in order to map the key stakeholders of the chain.

2. Methodology

The methodology is a case study approach with interview studies [15] from a positivistic ontological viewpoint. By applying stakeholder theory to a specific IT-value chain of a global industrial company the key stakeholders have been identified. The IT-value chain examined is revolved around sales and marketing processes. Here an enterprise system is utilized by sales and marketing departments, while being improved and developed by a global IT-department. The main stakeholders in the value chain are the sales and marketing managers identified as process owners, IT managers identified as responsible for the enterprise system and the external stakeholders are the customers influenced by the sales and marketing processes. The study focuses on the potential gap between the internal stakeholders and how the external stakeholders are included and/or considered in the IS development process.

Thirteen people where interviewed in the study, which was conducted over a month. Eight managers in the global IT-department, three managers in the marketing department and one manager in a sales department where interviewed. A structured interview guide was developed to secure repetition of questions during the interviews, so comparison of these was possible. The interviews focused on three areas:

First: Employee perception of the relationship between the IT department and the rest of the organization, *Second*: Knowledge about the company's customers, and *Third*: Possible improvement areas. In all areas the interview guide focused on asking open non-leading questions. The interview guide is depicted in Table 1.

Questions Related to the relationship between IT and the organization	How do you perceive the IT department? How do you perceive the relationship between the IT department and the rest of the company? What central guidelines determine the relationship? What do you think is the future strategy of IT in the company? What is positive and negative in the relationship? Give some examples.
Questions related to the customers	Who do you perceive as being your customer? Who are the customers of the company? What are the needs of the company's customers? Have you ever had any contact with the company's customers? Which information has the company given you about the customers? Do IT employees need to know more about the company's customers why/ why not?
Possible improvement areas	What possible improvement areas do you see in this context?

Table 1 Interview guide

The interview study is supported by observation of department meetings in sales, marketing and IT departments, where the statements of the interviews were placed in context to ensure the basis of generalization based on a small number of interviewees. Furthermore the results of the interview study have been verified by key stakeholders as an adequate representation of the general statements of each stakeholder group.

3. Results

The company investigated has been identified to have a process centric view towards the IT-value chain. The IT department is viewed as a service provider and is financed completely through IT-projects specified by the business. This view matches the conditions of the IT-value chain described in the introduction, and thus there is a fitting match between the model and the case company. The main results of the study are presented in Table 2. The term 'the business' referrers to the main organization, and is the commonly used term within the IT department.

The results presented in the table are the general answers from the two groups interviewed. It is possible to summarize the answers in this way since a majority of the interviewees in both groups responded with similar answers. By summarizing the answers in a table the general differences between the groups are highlighted. The results in the table are described in more detail in the following subsections.

Relationship between IT department and the organization

In the relationship between the IT department and the Sales and marketing departments, several challenges are identified. Both stakeholder groups perceive the relationship between the IT department and the business as challenging. Business managers explain that IT often does not understand the challenges of the main organization, and the solutions the IT department offers does not cover their needs. This has lead to marketing managers hiring external IT consultants to develop a desired enterprise solution, because the collaboration with the internal IT department failed. Furthermore they express that the enterprise solutions currently offered by the IT department do not support sales and marketing sufficiently. On the other hand, IT managers explain that the business does not understand the need to optimize enterprise solutions across the organization, and often requires specific solutions tailored to their needs but with a negative impact on the rest of the enterprise system. Furthermore they explain that their knowledge is very technical and that this is often problematic when communicating to non technical staff in the main organization. Two IT managers propose that they should hire IT consultants with focus on being the link between the IT department and the main organization, having skills within practical application of enterprise solutions.

Corporate guidelines determining the relationship are not explicitly present in other forms than the financial structure, which provides no independent budget for the IT department. Instead they are paid for their services by the individual departments of the main organization, both in larger development projects and for daily support and service. IT managers see this structure as limiting and request an individual IT budget.

On the other hand the marketing and sales managers perceive the current financial structure as functional, and a majority of them explains that the IT department should "do what they are told because they are paid for it".

Results of interviews		
Question	Answers: IT Department	Answers: Sales and Marketing
How do you perceive the IT department?	- As a service provider - Responsible for internal IT optimization.	- As a service provider - They often have their own agenda.
How do you perceive the relationship between the IT department and the rest of the company?	- Challenges in meeting demands and optimize.	- Challenging because IT does not understand the business. - IT supports standard solutions that do not fit the organization's needs.
What central guidelines determine the relationship?	- The financial structure. IT is paid by the business. - The IT strategies - Only few central guidelines	- The financial structure. - Only few guidelines.
What do you think is the future strategy of IT in the company?	- More responsibility to the IT department. Have an actual IT financial budget.	- IT must be more service providers. Meet the business' agendas.
Who do you perceive as being your customer?	The business.	The company's customers
Do you know the customers of the company?	No	Yes
What are the needs of the company's customers?	Do not know. This is the responsibility of the business.	They need better online IT solutions. For instance home page, e-business, e-portal, online brochures.
Have you ever had any contact with the company's customers?	No	Yes
Which information has the company given you about the customers?	None	None. Customer contact is part of the job.
Do IT employees need to know more about the company's customers why/ why not?	Yes. Could be relevant in some cases.	No. That is the business' responsibility.

Table 3 The main results of the case study.

The customers

Nearly no IT managers confirm that they know who the company's customers are. The few who has some knowledge about the customers, has gained this through previous jobs in the main organization. The customer of the IT department is by all IT managers perceived as the main organization. To include the customer perspective in the enterprise system development is perceived by all stakeholders to be a responsibility of the main organization. Marketing and sales managers knows the needs of the customers and they perceive it to include enterprise system development. However the managers do not want IT managers to know the customer needs, instead they ask for IT managers to do as requested. From a corporate viewpoint the knowledge sharing regarding customer value is not supported.

4. Discussion

From a stakeholder perspective the two groups have differing interests depending on their interests in the IT-value chain. The IT department views their responsibility to be securing an efficient enterprise system across the global organization, which is most easily done through standard solutions. Thus they take on a global standardization perspective, which is generally not flexible to match unique business processes. The sales and marketing managers on the other hand have the main focus on their internal business process, and request for a flexible enterprise system to match the specific business process. Hence the struggle in the IT-value chain view is between keeping a enterprise system and changing the business processes to match and vice versa. Both parties are reluctant to change, and demand change to be possible for the other party. In this struggle the external stakeholder is not included. Even though increased customer value ought to be the desired final outcome, this perspective is 'lost in the internal battle'.

From the IT-value chain perspective, customer value is affected by the company's internal information system through core business processes. A customer experiencing low value for money is more likely to purchase elsewhere in the future and vice versa. The enterprise systems affect the customer value and thus have an effect on company competitiveness. Customer value can be increased by being taken into account in development and change of these business processes and the supporting enterprise system. When customer value is omitted, solutions can easily be developed, which could be damaging to the relationship with the customer. Some of the obvious examples are IS processes linked to complaint processes, customer service processes, sales processes, product development processes, distribution processes and production processes. From this it is deduced, that the existing gap between IT and business is not only affecting the internal organization negatively, but is likely to have a negative effect on customer value and hence company turnover. Thus there are strong indications, that through improving the IT-Business relationship for increased collaboration according to the IT-value chain, the entire chain will benefit positively.

Through existing literature within IS propositions are developed, which might have a positive impact on the IT-value chain. The propositions are based on well known phenomena, which combined with the IT-value chain perspective could provide new insights into the phenomena influencing the IT-business gap.

Enterprise Systems Development

From an enterprise systems perspective this can be viewed as the driver of enterprise systems development in organizations. The company adapts and adopts enterprise systems functionality according to business needs. Recently it is being proposed that enterprise systems development is changing into an evolutionary development process [16]. By viewing the enterprise system from an evolutionary perspective, the dynamics of the IT-value chain may reveal possibilities for enterprise system development in closer collaboration with the business and customers. Based on the existing functionality the enterprise system can be developed further to match the company and even department specific requirements without changing the system core. Furthermore functionality in some implemented enterprise systems modules might prove to be applicable to other business processes, than originally intended by system developers. From this perspective the root of the problem is in the development process, including adaption and adoption of the enterprise system. Further research is recommended on enterprise systems in relation to the IT-value chain in order to test this hypothesis.

Mindset

In the perspective of mindsets, the struggle can be viewed as that of differing mindsets between stakeholder groups. The IT stakeholder group has a mindset concentrated around enterprise system optimization, while business manager's mindset is concerned with business processes. While business managers view the enterprise system as supporting business processes, IT managers seeks to fit the process to standards of the rest of the organization. From a mindset perspective the root of the problem in the relationship is not the different agendas; it is the mindset of what is most important for the organization. The stakeholder groups develop a situation of 'us and them' differentiating between IT managers and business managers based on the different mindsets. Theories on organizational capabilities, e.g. Prahalad [17] has shared mindset as a central prerequisite. Through the perspective of mindsets it can be investigated how these mindsets differ, and to what extend customer value is included. Theories on changing mindsets can be used through action research including the IT-value chain in a change management project, and the effect on the IT-business gap can be evaluated including changes in regards to including customer value.

Social Alignment

In present literature social alignment is mainly used as an explanatory frame of IS development and implementation failure [18]. Reich and Benbasat [18] provides a set of factors for improving social alignment to increase change of implementation success. This perspective provides an explanation for the gap between IS developers and IS users, which can be viewed as the IT-business gap of the global company. Social alignment can, linked to the IT-value chain, provide insights into the gap, which can be used to take action in improving the IT value chain. Furthermore by using the IT-value chain as a frame within social alignment in global organizations, new theories can be developed within the field including customer value as an essential aspect.

Corporate Governance or Strategic Alignment

Another research area, which might provide valuable insights, is strategic alignment theories, which also include the area of IS corporate governance. Strategic alignment theory states that alignment of strategy between IT and the business is essential in closing the IT-business gap [19]. It points at financial benefits including benefits in IS implementation. Like the perspective of social alignment, the customer value perspective is not included in strategic alignment. By combining strategic alignment with the IT-value chain model, this could provide interesting new perspectives to both models, including new prescriptive theories on closing the IT-business gap.

Enterprise Information Architecture

Yet another theoretical perspective capturing the business-IT gap is enterprise information architecture. "The alignment between Business Processes and Information Technologies is a major issue in most organizations, as it directly impacts on the organization's agility and flexibility to change according to business needs. The concepts upon which alignment is perceived are addressed in what is called today the 'Enterprise Architecture', gathering business and IT together" [20]. This perspective has a more structural approach, and focus on prescriptive solutions more than explanatory models, since this is a practitioners approach to closing the IT-business gap. However it might prove fruitful in relation to the IT-value chain providing other insights to the phenomena, than the theories previously introduced. This area is recommended for further research of understanding and improving the IT-value chain.

Learning's from the case study

The theoretical perspective presented in this discussion are only the few, which seems to have the potential to benefit most to exploring the IT-value chain further, and provide both new descriptive and prescriptive theories to the IS-field. The case

study has shown the ongoing struggle in the IT-business gap, and revealed how customer value is non-existing in the enterprise development process. Furthermore the following the presentation of theoretical frames shows that there are many ways to explain the phenomena, including differing proposed solutions. None of these however include the essential customer perspective provided by the IT-value chain model.

5. Conclusions and Further research

This paper has now explored the gap between business and IT from the perspective of the customer. We have identified a number of both practical and theoretical issues that pertains to this gap. The study here is limited in scope and depth, however the purpose of the study has been explorative.

The questions to be addressed in future studies are…

<The critical assumptions or propositions you want to take further>

<Main conclusions from the study>

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