Facilitation of Web-Based Business Systems Establishment through Inter-Organizational Process Mapping and Understanding

Olsson, Annika

Published in:
ISL Conference Proceedings

2002

Link to publication

Citation for published version (APA):
Olsson, A. (2002). Facilitation of Web-Based Business Systems Establishment through Inter-Organizational Process Mapping and Understanding. In *ISL Conference Proceedings*

Total number of authors:
1

General rights
Unless other specific re-use rights are stated the following general rights apply:
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.
- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: https://creativecommons.org/licenses/

Take down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00

Download date: 21. Dec. 2025

FACILITATION OF WEB-BASED BUSINESS SYSTEMS ESTABLISHMENT THROUGH INTER-ORGANIZATIONAL PROCESS MAPPING AND UNDERSTANDING

Annika Olsson
Department of Design Sciences, Division of Packaging Logistics
Lund University, Box 118, 221 00 Lund, Sweden
annika.olsson@plog.lth.se,

ABSTRACT

The introduction of web-based enterprise systems requires internal business process re-design, where organizations have to reconsider their internal working processes. These processes need to match their customers' and suppliers' processes and evolve into inter-organizational processes in order to create a sustainable web system. This article is based on a case study where the creation of a new web-based enterprise system is in focus. The purpose of the study is to identify gaps between the supplier of the web-based system and the case company and to share some insights into the process of bridging these gaps. The study shows the importance of closely united inter-organizational teamwork combined with inter-organizational process mapping in order to manage the implementation of a web system. The article suggests a model of inter-organizational process mapping and shared development, as exemplified by the actual case in the study, in the establishment of web systems where the web-system supplier and the buyer have different set-ups of cultures, core competences, project goals and business processes.

INTRODUCTION

The introduction of web-based systems within organizations is not only a matter of implementing a new tool for increased efficiency and of introducing an additional customer channel. It is also a matter of business process re-engineering (BPR), where organizations have to reconsider their roles and working procedures as well as their relation to customer and supplier processes. McIvor et al (2000) stress the importance of considering not only internal processes but also inter-organizational processes between a company, its customers and suppliers through business network re-engineering (BNR). When web-based systems are established, certain activities will be eliminated and changes in roles will take place both internally and among customers and suppliers. Hagel et al. (1999) have identified the potential of the Internet to build new business models. Nevertheless the strategies of business-to-business e-commerce add complexity, since they directly affect core businesses (Biggs, 2000). Technology infrastructure and business architecture have to be fully integrated among customers as well as suppliers in order to achieve effective implementations of e-commerce systems (McIvor et al. 2000). Bowersox et al (1996) argue that as a consequence of the introduction of e-commerce, the requirements placed on logistics will shift towards more complex systems, additional channels, and new customer expectations.

The creation of web-based systems means that web-system suppliers need to understand the vision and strategies of their customers. Furthermore, they need to understand the required organizational change as well as the change in work procedures and attitudes among the employees and among the customers' customers. Innovations in e-commerce will create an opportunity for suppliers to add value to their customers' businesses (McIvor et al. 2000). In order to create a value to their customers, suppliers should gather firsthand data about them (Andersson et al. 1998). If firsthand data is not available, suppliers have to rely on surveys, focus groups and conjoint analyses where the customer's perception of functionality, performance and the value of the supplier's offering is relied upon. The problem of relying on perceptions described by customers is the possible risk of misunderstanding their needs, expectations and requirements. Ulaga et al. (2001) argue that customer value analysis will become a strategic tool for auditing customer needs and for measuring gaps in the value perceptions of buyers and suppliers. This paper sets out to highlight the use of process mapping in the customer/supplier interface, as one tool for gathering and understanding customer needs in order to carry out such value analysis. The research data have been collected by means of a combination of interviews, observations and active research participation in the process of developing and establishing the web-based business system.

The objective in the phase of research data collection is twofold:

- to identify and map gaps in expectations between the service company, i.e. the buyer, and the web-system supplier, and to analyze the effects of these gaps on the process of establishing the web-based system
- to explore the effects of the web-based business system on the internal business processes and inter-organizational processes.

This study has been carried out in order to illustrate the concept of inter-organizational process mapping combined with internal process mapping in order, in turn, to create an increased understanding between internal functions and in the supplier/customer interface. One service-providing company within a global corporation was followed during a period of evolution towards a customer-oriented organization. The company's new web-based enterprise system is intended to play a central role in the internal organization as well as to form a new customer channel.

THE WEB-BASED BUSINESS SYSTEM

In the phase of change towards a customer-focused organization, the creation of a web-based system was initiated in cooperation with a supplier of web-based solutions with broad experience in the development of web-based systems and with reliable references from large Swedish companies, e.g. Ericsson, IKEA and the Swedish telecom company Telia. The web-based system was created in order to establish ***one*** system where information handling, trade, order handling, invoicing as well as production management from an internal point of view were integrated with trade, customer profiles, customized agreements and product information from a customer point of view.

Prior to the establishment of the e-business system, the service company made a SWOT analysis, where certain issues were identified. The major concerns were:

- good performance in only some parts of the functional organization
- unclear products and product portfolio
- end customers do not know what we offer
- end customers do not know whom to contact
- we do not know what end customers need
- uneven/irregular deliveries
- uncertain delivery times
- lack of follow-up
- lack of trust among end customers.

With these concerns in mind, four targets were set up in order to "productify" services and to create a customer-focused rather than a function-focused organization. These targets were: to move the company up the value ladder through clear offerings to customers; to work more efficiently; to create opportunities for employees to develop an increased self-esteem; and, finally, to raise the level of customer satisfaction by assuring the quality of products and services to customers.

The goal of introducing the web-based system was to create a new e-business channel for customers and at the same time create an enterprise business system for the service company. The whole product portfolio was sorted into six "offerings" in order to make it easier for customers and employees. The six offerings are:

- **Meeting Services** – offering 1
- **Transport Services** – offering 2
- **HR Services** – offering 3
- **Properties** – offering 4
- **Office Support** – offering 5
- **Administration Services** - offering 6

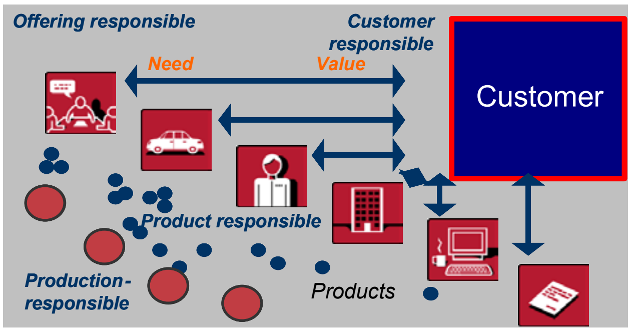

Figure 1: Six service offerings

The assets that matter in the logic of value are knowledge and relationships as well as a company's competencies and customers (Normann et al. 1993). Normann et al. (1993) stress technologies, specialized expertise, business processes and techniques that a company has accumulated and bundled into offerings as competencies as in the service offerings of the company of this study. The service offerings are clearly visualized to the user of the web system, as exemplified by the offering icons in Figure 1. Information about all the products can be found on product leaflets under each offering presented on the web-based system, which is in accordance with the strategy suggested by Porter (2001) to simplify the customers' process of gathering information about company products.

Sawhney (2001) emphasizes the decoupling of customer-focused functions from product-focused functions, which the case company did accordingly as presented in the model in Figure 1. The roles of the customer-responsible are decoupled from the roles of the product-responsible and the production-responsible and linked through the offering-responsible. Such decoupling will result in integrated and flexible offerings aligned with customer activities in combination with integrated and flexible IT architecture built from modular components. However, the challenges of such a decoupling, as exemplified by this case study, reside in gaining a deep understanding of customer activities and linking these with the internal business processes of product development and production. This case study also reveals the challenges of matching the case companies' internal business processes to fit the new enterprise web system. Furthermore, Sawhney (2001) identifies the challenges of integrating diverse applications, databases and computer systems from various functions into the web system.

THE CONCEPT OF INTER-ORGANIZATIONAL PROCESS MAPPING

Rummler et al. (1995) have established that customers and suppliers are often left out when managers are asked to describe their organization, and it is also hard to get a picture of the workflow within an organization. According to Rummler et al. (1995) the greatest opportunities for improvement within an organization are to be found in the interfaces between functional departments, and consequently an organization should be viewed as a system based on processes. Through processes it can be shown how work gets done across functional boundaries, and furthermore the internal relationship between suppliers and customers can be elucidated. Subsequent improvements of process mapping benefits will occur in the redesign of the processes that link companies to their customers and suppliers (Champy, 2001).

A process is a combination of inputs, actions, objects and outputs, used to make objective studies to evaluate and understand critical interrelationships in a business (Keller et al.). Keller et al. argue that relevant processes must be understood in order to judge whether customer needs or business objectives are met. Grönroos (2000) claims that the perceived value and quality of a service are not determined by the service offering alone, but also that the way the service process is perceived becomes part of the service. Hence the process-related elements must be included in a service offering, as exemplified in this case study and suggested in the model in the presented models (Figures 2b and 3).

In the early stage of this study some major gaps between the service company and the web-system supplier were identified in the interviews. These gaps can be summarized as follows:

- gaps in vocabulary and understanding, where the supplier is very technically oriented with a focus on technology issues in the creation of a web system and thus has little understanding of customer needs, while the service company focuses on administrative routines and on developing internal business processes
- the service company aims at creating a business process system, while the supplier aims at creating a standard product for future sale to other businesses
- the service company has great trust in the supplier's experience of web-based systems production, while the supplier has expectations on the service company's expertise in creating business process systems.

It was clear that the two organizations were talking at cross-purposes and that the supplier's understanding of the process evolution at the service company was limited. Major confusion arose due to the different process views of the two companies, i.e. the system processes focused by the supplier and the offering processes focused by the service company (the buyer) as presented in Figure 2a. An offering process, included in one offering, at the service company could for example be an office removal, while a typical system process at the supplier's end could be a single item order or a yearly agreement handled in the transactional system. These two process expressions had been used interchangeably, which created confusion in both organizations. This led to a separate use of processes (Figure 2a) in the two organizations, while they believed that they were working in parallel on a joint process evolution.

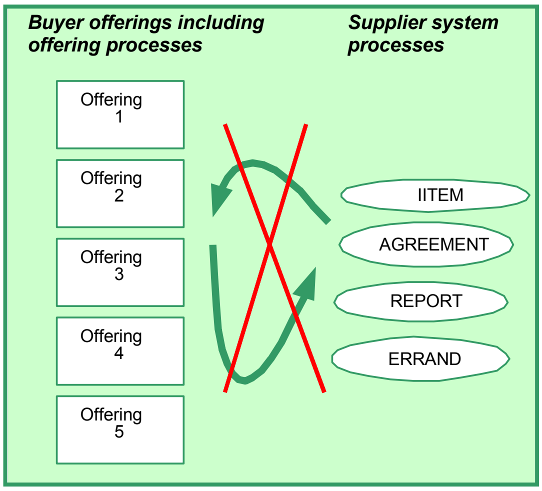
Buyer offerings including offering processes
Supplier system processes
Offering 1
Offering 2
Offering 3
Offering 4
Offering 5
IITEM
AGREEMENT
REPORT
ERRAND

Figure 2a: Offerings and system processes by the buyer and the supplier

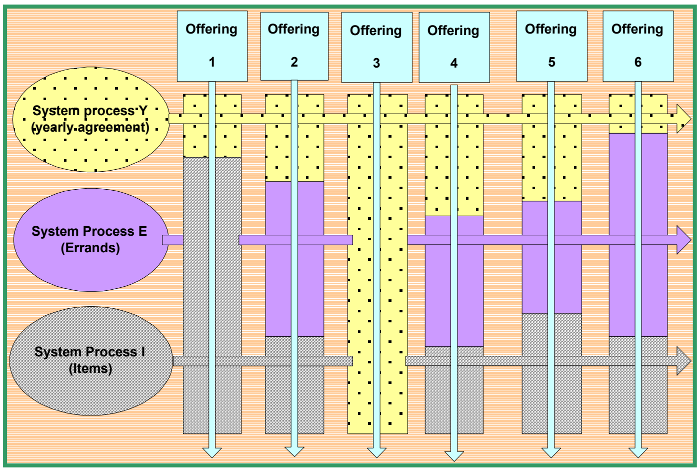
Offering 1
Offering 2
Offering 3
Offering 4
Offering 5
Offering 6
System process Y (yearly-agreement)
System Process E (Errands)
System Process I (Items)

Figure 2b: Process relation between the supplier system processes and company offerings

From the results of the study it was concluded that rather than having a parallel process configuration as originally intended (Figure 2a), the processes from the two companies could be visualized in a matrix relation, as in Figure 2b. Each of the offerings' processes of the service company contains system processes provided by the supplier of the web-system, whereas some of the offerings contain only one or two of the system processes (Figure 2b).

PROCESS DEVELOPMENT FROM A CUSTOMER PERSPECTIVE

Traditionally, suppliers have taken the major responsibility for product development, including costly and time-consuming iterations between the customer and the supplier, to reach satisfactory product solutions (Thomke et al. 2001). A new process flow, based on the process map in Figure 2b but seen from the end-customer perspective, i.e. from the perspective of the customer of the service company, was developed in cooperation with the service company. This process map, which has its basis in the customers' process, was developed in a stage where the supplier transferred the design of the processes behind the web system to their customer, i.e. the service company. At the start of the project, the supplier staff thought that they were fully aware of the service company's customer processes and that they would be able to draw their process maps on the basis of these processes, consequently integrating and creating added value to the service company and its customers. The supplier, however, saw the service company as a master of process understanding and development, as found in gap c of the study. This led to the fact that, as a buyer, the service company was assigned the role of developing their processes based on their customers' needs, and as a knowledgeable buyer enabled inter-organizational process mapping where the end customers' needs were linked into the service company's offering processes and further into the system processes of the supplier, as in Figure 3.

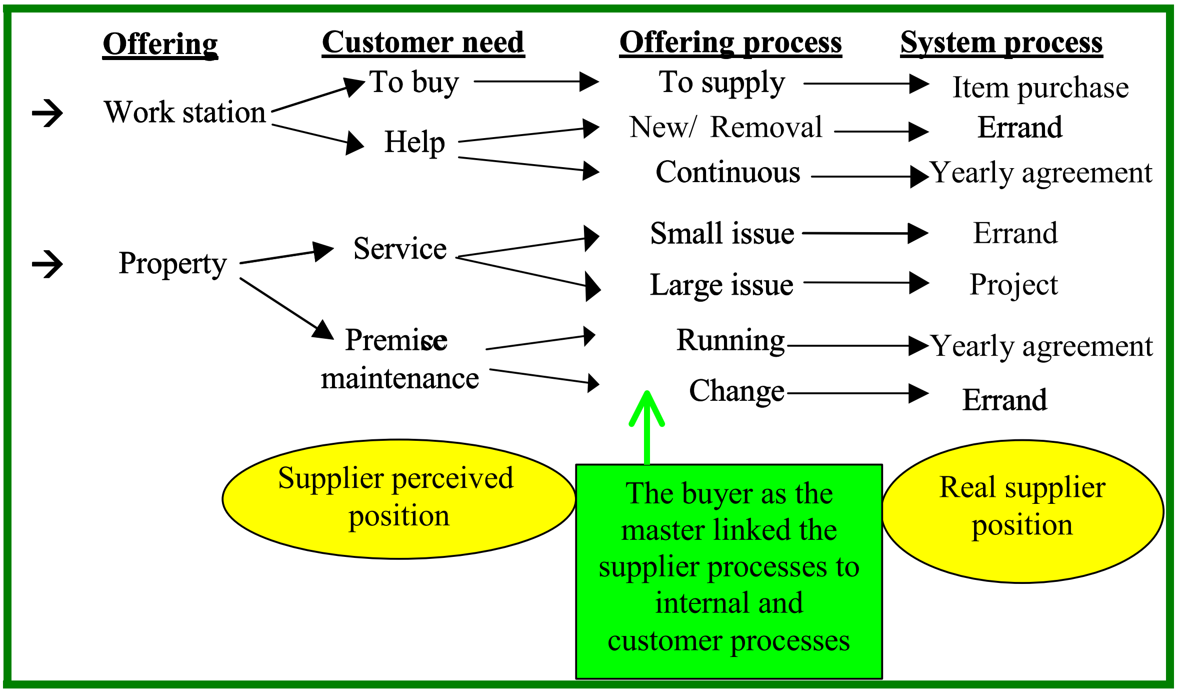
Offering
Customer need
Offering process
System process
Work station
To buy
Help
To supply
New/ Removal
Continuous
Item purchase
Errand
Yearly agreement
Property
Service
Premise maintenance
Small issue
Large issue
Running
Change
Errand
Project
Yearly agreement
Errand
Supplier perceived position
The buyer as the master linked the supplier processes to internal and customer processes
Real supplier position

Figure 3: Process development from a customer-need perspective

According to Thomke et al. (2001), it can be risky to hand over product development to customers. The buyer-supplier relationship has to be redefined, as in this case study, where the buyer became more involved in the development of the web-based system through their knowledge of the business processes behind the system. This was beneficial to the supplier, who was able to integrate external knowledge into their development process, as well as to the buyer, who benefited from a common platform of cost sharing from any future development. Thereby gap b, where the supplier's aim to create a standard product and the buyer's aim to create a business system, evolved into an iterative system-development process shared by the supplier and the buyer. Furthermore, the potential risks identified by Thomke et al. (2001) were eliminated through an agreement to share benefits and risks that was beneficial to both companies.

CONCLUSION

The study demonstrates that the evolution from separate supplier processes and buyer processes into inter-organizational process maps and further on to customer-perspective process maps will increase business understanding and thereby simplify web-system development. The process maps of the case in this study, which were created in cooperation with the buyer and where the processes of the buyer and supplier were linked in a matrix as in Figure 2b and then further developed into customer perspective process maps, as in Figure 3, contributed to an increased understanding of the development process of the web-based enterprise system. This understanding transferred the responsibility for process development from the supplier to the buyer, which facilitated the production of the web-based system, in allowing the buyer to focus on process development and end-customer understanding, while the supplier was able to concentrate on producing the web system. Both the buyer and the supplier benefited from letting the buyer develop the system and the supplier create it through optimal competence utilization. Furthermore, the vision gap of creating a standard product from the supplier and of creating an enterprise system from the buyer could be combined so that that the buyer as a developer benefited from any new development from the supplier of similar products.

REFERENCES

Anderson, J.C. & Naurus, J.A. (1998) ”Business Marketing: Understand What Customers Value” Harvard Business Review, Nov-Dec 1998

Andersson-Lehn, E. (2001) “Developing an internal service organisation into becoming better than the business” Internal case company document

Biggs, M. (2000) “Enabling successful e-business strategy requires a detailed business process map”, Info World, 03/06/2000, Vol. 22, Issue 10, p. 64

Bowersox, D.J. & Closs, D.J. (1996), “Logistical Management – The Integrated Supply Chain Process”, Mc-Graw Hill, Singapore

Champy, J. (2001) “New products of new processes?”, Sales & Marketing Management, May 2001

Grönroos, C., Heinonen, F., Isoniemi, K. & Lindholm, M. (2000) ” The NetOffer model: a case example from the virtual marketspace”, Management Decision, 38/4 2000, pp. 243-252

Hagel, J. III & Singer, M (1999) “Net Worth – Shaping Markets when Customers Make the Rules” Harvard Business School Press

Keller, P.J.& Jacka, J.M. “Process Mapping”, Internal auditor, Vol.41, Issue 5 pp. 60-65

McIvor, R., Humphreys, P. & Huang, G (2000) “Electronic Commerce: re-engineering the buyer-supplier interface”, Business Process Management Journal, Vol. 6, No.2, 2000, pp.122-138

Normann, R. & Ramirez, R. “ From Value Chain to Value Constellation: Designing Interactive Strategy” Harvard Business Review, Jul-Aug 1993

Porter, M. E. (2001) "Strategy and the Internet." Harvard business review, March 2001, pp. 63-78

Rummler, G.A. & Brache, A.P. (1995) “Improving performance – how to manage the white space on the organization chart”, 2nd edition, Jossey-Bass Publishers

Sawhney, M. (2001) “Don’t Homogenize, Synchronize” Harvard Business Review Jul-Aug 2001

Thomke, S. & von Hippel, E. (2002) “Customers as innovators: A new way to create value” Harvard Business Review, April 2002

Ulaga, W. & Chacour, S. (2001) ”Measuring Customer Perceived Value in Business Markets” Industrial Marketing Management 30, pp. 525-540