AMCIS 2001 Proceedings

Americas Conference on Information Systems (AMCIS)

December 2001

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FROM VENDOR TO PORTAL: A CASE STUDY OF INTERNET-ENABLED RECONFIGURATION

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Abstract

The phenomenal impact of the internet upon organizations has manifested itself in many ways with its view as an opportunity and threat being the major items of attention for many. However, organizations embracing or responding to this do not always foresee the rapid, and sometimes dramatic, changes in their internal structures and in their relationships with other businesses. In this paper, an existing framework is developed and applied to a case study which concerns the evolving relationship between a software house and its customers in the book publishing industry. The case study traces the evolution of a portal, and its role in developing shared competencies and trust between supplier and customers in the context of Internet-enabled re-configuration.

Introduction

Despite the hype of the internet exceeding the reality of the balance sheet for 'pure play' dot coms such as Yahoo and Amazon – reactions by established businesses have been profound. The threat of being left behind by competitors and the appearance of new entrants has driven many to internet adoption (Vidgen, 1998, Reynolds 2000). Consequently, many organizations have used the Internet to enable different ways of doing business. However, in their response, organizations do not always foresee the rapid changes in their internal structures and in their relationships with other organizations. This paper adapts Vidgen's maturity framework to facilitate an understanding of the dynamics and nature of the relationships when a company undergoes internet-enabled reconfiguration, (Vidgen, 1998). In the next section the concept of internet-enabled re-configuration is introduced and situated within earlier literature on IT enabled transformation. Following that is a description of the research method. A case study of internet-enabled reconfiguration is then described and the application of the framework is reported. The last section offers reflections on the changing relationships between customers and suppliers in internet-enabled re-configuration.

Internet-Enabled Reconfiguration

Internet-enabled re-configuration can be linked to a strong theoretical basis in the field of IS – IT enabled organizational transformation. It is therefore useful to explore aspects of this to fully understand the relevance of the research presented here. Perhaps it is worth focusing upon the contribution receiving the most attention in recent years – that of business process reengineering/redesign (BPR) (Hammer 1990, Davenport and Short 1990). It is widely understood that early BPR approaches advocated the 'clean slate' approaches to existing ways of work, and more broadly organizational context, in order to capitalize on the benefits of new IT. However, as the concept was adopted by organizations, and received much attention from academics it became clear that recognition of context was critically important. BPR frameworks, and concepts were therefore developed that took multiple perspectives of the original concepts (Grover and Kettinger 1995, Willcocks and Smith 1995, Galliers 1998). A further strand of the development of IT enabled organizational transformation was the usage of concepts such as BPR. Benefits from early BPR projects were commonly associated with dramatic improvements in operational efficiency rather than innovative thinking to improve the competitiveness of an organization or employee working environments. In fact, the automation and simplification of business processes has in some cases inhibited competitiveness and increased complexity of employee working environments (Braa and Rolland 2000, Light and Holland 2000). Later BPR-rooted approaches such as the work of Venkatraman

(1994) have aimed to highlight other contributions of BPR and not just that of increased operational efficiency. Venkatraman (1994) developed a taxonomy for IT-enabled re-configuration with business network re-definition being the highest level of transformation. Business network re-definition was defined as the use of IT to alter business models or industry structures and was exemplified in the well know hospital supplies company case offered by Venaktraman and Short (1992). Venkatraman's (1994) taxonomy has since been adapted by Vidgen (1998) to produce a maturity level framework for Internet enabled organizational re-configuration as shown in Table 1. The framework characterizes different types and levels of maturity, ranging from a simple web presence to business transformation. If consideration is therefore given to the history of IT enabled reconfiguration and the need for a holistic and contextually influenced perspective it is clear that a number of questions arise in respect of Internet enabled re-configuration. It is this area that this paper seeks to refer, specifically - what the impact of the internet enabled re-configuration may be upon organizational relationships with customers and suppliers. The paper uses a case study to highlight shifting organizational dependencies, and relational rent,[1] in the context of growing internet maturity which led to a high level IT enabled organizational transformation (business network re-definition).

Table 1. Levels of Internet-Enabled Reconfiguration (Vidgen 1998).

Maturity	Type	Sub-type	Level	Characteristics
Low	Data provision	Presence	1a	The organization creates a web-presence to publicize their existence and activities. This is often done out of fear of being left behind.
		Data	1b	Product details are added to support and promote the sales of the organization's offerings.
	Information support	Information	2a	A searchable database of products is implemented on the server, allowing customers to search for products using keywords. Basic ordering facilities may be added. Information such as industry commentaries is added to attract visitors and to provide added value.
		One-to-one marketing	2b	Mass customization - web page content is customized based on customer-defined criteria, transforming the site to a one-to-one marketing vehicle. Users may be issued with IDs and passwords to make them identifiable.
Medium	Process support	Internal coordination	3a	Intranets are established to aid coordination and communication within an organization.
		E-commerce	3b	Ordering and shopping cart software, secure payment facilities, and integration with back office databases and legacy transaction processing systems.
	Product redesign	Product redesign	3c	Offer new combinations of products and services and a wider range of varieties of existing products. For example, Dell computers allow users to 'build' their own PC to their precise specification.
	Business process redesign	Business process redesign	4	Reengineer internal business processes and extend the reach of corporate applications through extranet and intranet integration (e.g., suppliers access their customers' stock control systems and deliver stocks where and when needed).
High	Networkredesign	Network redesign	5	Create strategic alliances between organizations in the value chain (this is more than electronic data interchange - EDI).
	Transformation	Transformation	6	Deliver new products to new markets through Internet-enabled technologies.

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[1]In their examination of how a pair or network of organizations can develop relationships that sustain competitive advantage, (Dyer and Singh, 1998) use the concept of *relational rent* to denote the additional profit that can be realized by collaboration.

Research Method

This study was primarily an interpretivist one that sought to investigate and describe, in a rich fashion, attitudes concerning a development in business-to-business use of the Internet. To this end, a qualitative focus was adopted. In the main, a case study approach was chosen since it enables the researcher to ask penetrating questions and capture the richness of organizational behaviour (Gable, 1994). A case study approach is also recommended in instances where there is a desire to gain insight into emerging topics (the 'how' and 'why' questions), but there is no need to control behavioural events or variables (Benbasat et. al. 1987, Yin 1989). Unlike a case study focusing on a single 'bricks and mortar' organization, the case studied here was relationship-based rather than organization-based. The primary focus was on a trading relationship, as it developed during the Internet re-configuration of a supplier (a software house), and to a more limited extent, its customers. One of the authors had regular meetings with the web developer, who during the development precipitated the change in the relationship between the software house and its customers. Our focus on the web development, with due attention to the history of the web site, allowed our case to be self-contained in a virtual sense, in that we conducted a rich investigation into the relationship but looked beyond the organizational boundaries into the Internet re-configuration of customer organizations.

A Case Study of Internet-enabled Reconfiguration: The Development of Bookweb

Sweetens Computer Services (SCS) is a systems and support company with over twenty years experience of systems development, specializing in the Book Trade. Formerly owned by a bookshop, SCS develops, supplies and maintains computer systems for the United Kingdom (UK) and Irish publishing industry. The range of applications covers book publishing, journal subscriptions, authors' royalties, library supply, mail order, parcel dispatch tracking, and periodicals agency.

The organization is led by an experienced bookseller Christopher Sweeten who, in his role of chairman of a book publishing standards organization, has been at the forefront of encouraging this book industry to use the Internet for business-to-business transactions. These standards are intended to enable communication between publishers, retailers (on- and off-line), and libraries. In early 1996, SCS established Bookweb (http://www.bookweb.co.uk) as a free service for those book publishers who were SCS customers. They offered their customers the 'pipedream' of a web site, (Loebbecke et. al. 1999). For each publisher, Bookweb included a company profile, a list of their publications and a simple order form. Using Vidgen's framework (Table 1 - Levels of Internet-enabled reconfiguration (Vidgen 1998).) Bookweb was at level 1a for the Book Publishing Industry (BPI) and for SCS,. Over the next twelve months, two interesting trends emerged: the first was that book publishers who were not SCS customers began to request space on Bookweb; and the second was that SCS customers who had set up an independent web site (and thus left Bookweb) still required a link from Bookweb. From the original concept of a low cost web-site solution for SCS customers (the repository stage), Bookweb emerged into a BPI portal.

As Bookweb became a jump station or portal, it moved to a maturity level of 1b. By 1998, Bookweb contained one thousand links to publishers, and was receiving twelve thousand 'hits' per week from the BPI, and from book buyers seeking information about specialist publishers. Bookweb raised the profile of SCS within the BPI, and attracted new customers for their other products and services. However, Bookweb's rapid expansion and change of purpose resulted in a site that required significant maintenance (and hence cost), and was not straightforward to use.

Charging non-SCS customers could offset some costs but a re-development (to address issues of maintainability and usability) was indicated at this point, also allowing costs to be offset by realizing the first potential objective above, namely revenue-generation through advertising. This re-development was outsourced to a small specialist web development company but senior management took an active role in the project. This senior management commitment represented an auspicious start to the project, (Keil et. al. 1998). His interest and involvement maintained attention to longer-term issues. The authors examine two change processes: the first, an actual change process that took place, involving a re-development of the BookWeb web site; and a potential change process that was envisaged during the first change. These change processes are depicted in Figure 1.
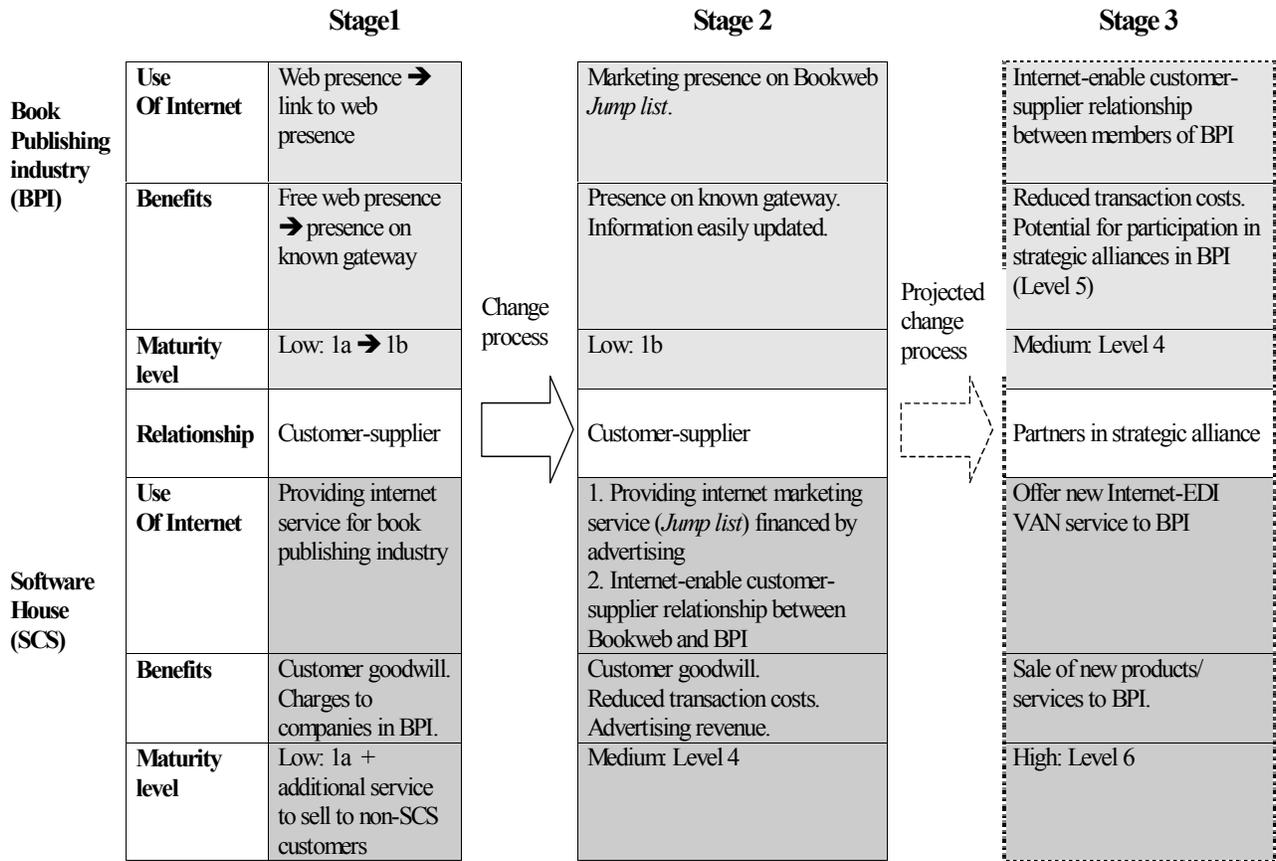
		Stage1		**Stage 2**		**Stage 3**
Book Publishing industry (BPI)	**Use Of Internet**	Web presence ➔ link to web presence		Marketing presence on Bookweb *Jump list*.		Internet-enable customer-supplier relationship between members of BPI
	Benefits	Free web presence ➔ presence on known gateway		Presence on known gateway. Information easily updated.		Reduced transaction costs. Potential for participation in strategic alliances in BPI (Level 5)
	Maturity level	Low: 1a ➔ 1b	Change process	Low: 1b	Projected change process	Medium: Level 4
	Relationship	Customer-supplier		Customer-supplier		Partners in strategic alliance
Software House (SCS)	**Use Of Internet**	Providing internet service for book publishing industry		1. Providing internet marketing service (*Jump list*) financed by advertising 2. Internet-enable customer-supplier relationship between Bookweb and BPI		Offer new Internet-EDI VAN service to BPI
	Benefits	Customer goodwill. Charges to companies in BPI.		Customer goodwill. Reduced transaction costs. Advertising revenue.		Sale of new products/ services to BPI.
	Maturity level	Low: 1a + additional service to sell to non-SCS customers		Medium: Level 4		High: Level 6

Figure 1. Maturity Levels and Relationships for Bookweb and Trading Partners

The Actual Change: The Redevelopment of BookWeb

Re-developments of web sites are quite common, as site owners seek to exploit new technology and maintain the interest of the user. The development approach adopted, detailed in (Howcroft and Carroll, 2000), included the development of a web strategy for SCS. The three core elements of this strategy were documented as follows:

> "*Where* - BookWeb will be a "Portal" to the UK and Irish book industry that will eventually generate revenue from the site so that it is self-funding.
> *Now* - BookWeb has an existing user base, but an under developed web site with little user interaction.
> *How* - Re-develop the BookWeb site to reflect the change in requirements and provide users of the site with a much more functional environment. This will encourage more hits and generate revenue by advertising from the site."

Bookweb had two key groups of users: content providers (book publishers), and users who browsed that content (who might be from the BPI or from the general public). There are several portals aimed at the book-reading public but few for the BPI itself. The stated objectives of the development were focused on improving user interaction with Bookweb, smoothing the process of content provision, and setting up a discussion group for the BPI. In the event, the provision of a discussion group was postponed until Bookweb was moved to an Internet Service Provider that would support related features of Microsoft Front Page.

Prior to the re-development, the Bookweb site was poorly organized, both from the technical view (an untidy directory structure with pages hyper-linking across directories) and from the user view (a list of one thousand members of the BPI). The re-development resolved the problem of the technical maintenance of the site by re-organizing and documenting the directory structure. The introduction of automated entry of content by providers increased the technical complexity of the site but offered greatly simplified maintenance of content. In simple HTML-based web sites, maintenance of content is synonymous with

technical maintenance (i.e. changing content requires at least a 'brush' with HTML) and can soon involve costly maintenance. The user view was improved by introducing a hierarchy of categories that would permit quicker navigation by users, and less information presented per page. At the same time, organization of content was re-designed with users in mind, and effected through on-line forms for providers to input content. Re-categorization could have taken place independently of automating process of content provision, but it made sense to deal with these together.

It has been noted previously (Erikson, 2000) that there is a large distinction between 'producer' users – those held responsible for the continuous development of the site - and 'consumer' users – the actual users of the web information systems. This distinction appeared as a gap in this project, as the development process focused on the producer users and tended to neglect the consumer (Howcroft and Bell, 2000). With more traditional systems development, the involvement of users, despite the tensions and complexities entailed, is often viewed as accepted practice. This is an obvious point of departure with web development, where many users are often viewed as unattainable and existing 'out there', rather as consumers are in the marketing of retail products. In this case, the longer-term goals of promoting business-to-business Internet use may also explain undue focus on producer users. For the customers of SCS, the re-development did not alter their Internet-enabled configuration: they remained at level 1b (with respect to their relationship with SCS). However for SCS itself, this re-development represented substantial change in their maturity level to Level 4, as they created this fairly simple application that extended beyond their organizational boundaries to the desktops of their Bookweb customers. These customers were willing to adapt their business processes because they valued the 'gift' of inclusion in a popular portal. The shift from customers using Bookweb as a Web presence to that of a link can be viewed as an indicator of the increasing use of the Internet (at least for marketing) by SCS customers.

The Potential Change Process - Ghost Development

Reports of the death of the BPI (as of Mark Twain) have been greatly exaggerated. Despite the advent of the electronic book, the market (electronic or otherwise) for hard copy books remains buoyant. (Stevenson, 2000) describes the book publishing industry as the "liveliest of corpses" and stresses the need for publishers to think about the impact of changes in retail and distribution to their business. In the UK Book industry, EDI has been used for many years to send orders from customers to suppliers: either through private systems set up by a single wholesaler or distributor, or through trade-wide national systems such as Teleordering in the UK. EDI systems have changed from being closed systems using proprietary message formats to open systems covering a wide range of messages, using standard message formats, and increasingly using standard communication protocols, (Communication, 1999). The EDItEUR EU funded project is an example of the promotion of the use of standards such as UN/EDIFACT to facilitate open systems. Software houses offering services to the Book Industry can take advantage of the ubiquity of the Internet for the physical layer and HTTP for the transport layer, and the uptake of EDIFACT for the standards layer, to develop applications and offer Value Added Networks (VANs).

If we regard the re-development described above as an example of EDI, we can see that it depended mainly on the physical and transport layers with a very simple application layer. There was no need to use EDI standards. The future possible development of SCS as a provider of Internet-EDI applications and services for the BPI (our ghost development) was not explicitly stated in the goals of the re-development above but it was quite clearly in senior management's mind during that development. The web developer was also aware of the long-term aspirations of SCS as a VAN provider. By employing the logic of the 'gift economy' in offering a free service to its customers, SCS was able to support its customers with increasingly mature use of the Internet, and develop its relationship with them in readiness for new relationships as a VAN provider to its customers. SCS customer readiness for Internet-EDI depends on their ICT competencies, and their willingness to adapt their business processes. Stage 2 in our model can be seen as an important step in creating such customer readiness. The other pre-requisite for Internet-EDI is the uptake of EDI standards in the BPI, closely related to this step.

The customers currently supplying simple company and link data on-line are the same ones who may look to SCS to supply much more complex applications within the EDI semantic layer. These applications will allow customer operation at Level 4 once EDI standards have been adopted by a sufficient number of their trading partners within the BPI. SCS should be in a good position to sell its products and services (thus operating at level 6) to its Bookweb customers on the basis of their reduced transaction costs and the opportunity for participation in strategic alliances between trading partners within the BPI.

Conclusions

Our use of this adaptation of Vidgen's model of Internet-enabled re-configuration has enabled us to trace the growing maturity of SCS and their customers through the introduction of Bookweb. In Stage 1, both SCS and its customers are operating at a low level of Internet maturity. The 'relational rent' is limited and fairly evenly shared between the two parties, but the popularity of

Bookweb leads to problems of maintenance and usability. Stage 2 represents an increase in the Internet maturity of SCS, with the main benefit being the elimination of the problems experienced by SCS. The projected change process (our ghost development) is expected to benefit both SCS and its customers, with a significant increase in 'relational rent'.

The provision of Bookweb brought two major benefits to SCS. Firstly, it improved its image with existing customers as a provider of a web presence for those who needed it, and, as the Bookweb became a recognized portal, it attracted new customers to Bookweb and drew their attention to SCS as a provider of products and services. The second benefit, which may yet prove to be more important, was that SCS could develop its Internet maturity in tandem with that of its customers, in readiness for the more widespread adoption of Internet-EDI standards by the BPI. (Loebbecke et al., 1999) identify the potential of electronic publishing as a possible route by which book firms can profit from the Internet, once they enter the electronic publishing value chain.

It was useful to examine the re-configuration from the different perspectives of the partners, at different stages - extant and expected. This examination revealed the potential for asymmetries in both benefits and maturity levels. The benefits for SCS grow in line with their Internet maturity as they move from Stage 1 to Stage 2 and, hopefully, to Stage 3. Their initial investment has already paid off in improved customer standing and may yet pay off more in business transformation at Stage 3. Although the case for the internet-enabling customer-supplier relationships within the BPI (at Stage 3) is very similar to that for SCS's internet-enabling of the simpler relationships with its Bookweb customers (at Stage 2), the risk is greater for the BPI than it is for SCS. Extended use of technology brings immediate benefits for software houses and other technology companies, whilst their customers may need to wait longer to realize the benefits, if at all. Thus the projected relationship between SCS and its customers tends to confirm the view, given by (Jansen et al., 1999) and (Sandhoff, 1999), of such virtual organizations as power-asymmetric networks.

Vidgen's framework focuses primarily on maturity of use of the Internet, without looking at the business benefits. Here, we have used the relationship between the parties in the inter-organizational network as a focus for our consideration of individual and mutual business benefits, thus putting the Internet maturity level into a broader perspective.

The question remains as to whether or not the future scale of Internet-EDI will meet current expectations. Even if the uptake is relatively limited, it is something that providers of 'back-office' software cannot afford to ignore. If use of Internet-EDI increases as predicted, software vendors will try to provide EDI-enabled products and services to maintain their current customer base and reach new customers. An inter-organizational network such as Bookweb may become a useful tool for exploiting customer switching inertia as well as developing shared competencies.

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