Chapter VIII

E-Business Modeling

Tomaso Forzi
Aachen University, Germany

Peter Laing
Aachen University, Germany

ABSTRACT

This chapter introduces a meta-method for e-business modeling. As a matter of fact, the Internet and Web-based e-business solutions nowadays play a crucial enabling role for the design and implementation of new business models. This implies high chances, but also remarkable risks for enterprises that choose to pursue a new business model striving to exploit new technology potentials. In fact, the implementation of a strategically not appropriate business model would critically undermine the long-term success of a company. Hence there is a clear need for action in the field of methodical business modeling. We present a new approach for a customer-oriented e-business modeling, with specific attention on inter-organizational cooperative networks and re-intermediation, as well as on information management within distributed manufacturing networks. The approach has been validated in the case of the information service intermediary of a collaboration network in the German manufacturing industry.

THE IMPACT OF E-BUSINESS ON ORGANIZATIONAL STRUCTURES

During the past few years, the fast development of new information and communication technologies (ICTs) has been revolutionizing the market arena, has extended the horizon of competition and has caused radical changes in all business
sectors (Afuah & Tucci, 2001; Bensaou, 1997; Brynjolfsson & Kahin, 2000; Filos, 2001; Gebauer & Buxmann, 1999; Hagel & Singer, 1999; Holland & Lockett, 1994; Kornelius, 1999; Picot et al., 2001; Porter, 2001; Rentmeister & Klein, 2001; Schoder, 2000; Timmers, 2000; Wirtz, 2000). Among others, the effects of the introduction of new ICTs and of the related e-business solutions were an enhanced globalization process, an even more uncertain and dynamic economic environment and a technology-driven development of new capabilities, products and services as well as new businesses (Evans & Wurster, 2000; Hagel & Singer, 1999; Krcmar, 2000; Mooney, 1996; Pietsch, 1999; Ruohonen, 1996; Teubner, 1999).

Currently, there are different and not always concordant definitions of the term electronic business (e-business), e.g., according to Afuah and Tucci (2001), Brynjolfsson and Kahin (2000), Forzi and Luczak (2002), Evans and Wurster (2000), Hoeck and Bleck (2001), Porter (2001), Rayport (1999), Rentmeister and Klein (2001), Timmers (2000) and Wirtz (2000). E-business will be here defined according to Forzi and Luczak (2002) as the “holistic ICT-based support of (dynamic) inter-organizational and intra-organizational processes and transactions” (p. 494). E-business hence implies the modification of existing business relationships and might thus lead to the development of new or modified business models. Furthermore, we define e-business engineering according to Luczak et al. (2002a) as “all the methods and procedures that support companies of different industrial sectors to systematically develop, implement and run e-business solutions” (p. 223). E-business engineering is hence the systematic design and implementation of e-business solutions and models.

Transactions (i.e., the transfer of goods among the different economic subjects) and the related costs represent a basic element of economic analysis (Coase, 1937; Williamson, 1975). Transaction costs vary in function of the specificity of the involved good or job. Furthermore, the management of transactions may take place in the market (under various contractual forms), within a hierarchy (i.e., an organization in which transactions are regulated by hierarchical relationships) or within intermediate forms of transaction governance (so-called hybrids) (Coase, 1937; Mintzberg, 1979; Williamson, 1975). One of the most significant effects caused by new ICTs and the related e-business solutions is the decrease of transaction costs for all coordination instances (as shown in Figure 1), which might eventually lead to a change of the transaction governance (Forzi & Luczak, 2002; Malone et al., 1987; Picot et al., 2001).

In fact, ICT-based e-business solutions allow enterprises to design leaner intra-organizational processes, with the result of enhancing higher efficiency and productivity within a hierarchy (Davenport & Short, 1990; Fine, 1998). Besides that, ICTs can also strongly influence inter-organizational processes (hybrids up to market-like), by supporting cooperation within entrepreneurial networks as well as by enabling their coordination—by means of Internet-based business collaboration infrastructures (BCIs), such as e-marketplaces or collaboration platforms (Biggiiero,
Related Content

A Theory of the Online Teaching Experience
[www.igi-global.com/chapter/theory-online-teaching-experience/18670?camid=4v1a](www.igi-global.com/chapter/theory-online-teaching-experience/18670?camid=4v1a)

Exploring the Association Between Leisure Time Digital Immersion, Attention and Reasoning Ability in Pre-Teens
Mick Grimley, Mary Allan and Cathy Solomon (2010). *International Journal of Web-Based Learning and Teaching Technologies* (pp. 56-69).
[www.igi-global.com/article/exploring-association-between-leisure-time/52599?camid=4v1a](www.igi-global.com/article/exploring-association-between-leisure-time/52599?camid=4v1a)

Organizational Learning and Technology
[www.igi-global.com/chapter/organizational-learning-technology/62922?camid=4v1a](www.igi-global.com/chapter/organizational-learning-technology/62922?camid=4v1a)
Teaching and Assessing Problem Solving in Online Collaborative Environment
Yigal Rosen and Rikki Rimor (2013). Teacher Education Programs and Online Learning Tools: Innovations in Teacher Preparation (pp. 82-97).
www.igi-global.com/chapter/teaching-assessing-problem-solving-online/67972?camid=4v1a