Chapter XVIII
Process–Driven Business Integration Management for Collaboration Networks

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ABSTRACT

In the chapter, a framework for cross-enterprise business integration management addressing the organizational and technical dimension is developed. Firstly, the authors identify basic characteristics of cross-organizational business processes whose complexity results in the need for an efficient and effective business integration management. Therefore, a holistic framework is focused, consisting of a view concept for knowledge management in collaboration networks, a three-tier architecture, and a process-oriented life-cycle model. The framework for business integration management offers the required methods to set up enterprise processes and ICT-support in collaboration networks. It proposes a management guideline for collaboration participants defining what, why, when, and how they might manage their business integration intra- and cross-organizationally.

BUSINESS INTEGRATION IN THE VALUE-ADDED CHAIN

Regarding the value-added chain of enterprises, a transition from an intra-organizational perspective, keeping value-creation within its own borders, towards a cross- or inter-organizational view, value-creation within a network of specialized firms, can be observed (Kanter, 1991). The growing importance of cooperation is a result of globalization in combination with the disappearance of political borders and, above all, technological advances caused mainly by the Internet (Scheer, Erbach, & Thomas, 2000; Scheer, Grieble, Hans & Zang, 2002). Thus, enterprises have to react to the raised innovation pressure and facilitate flexible collaboration on a global scale by aligning their business processes.

The borderless enterprise has been the subject of scientific discussion for years (Naisbitt, 1982; Picot, Wigand, & Reichwald, 1997). Current approaches addressing solutions to specific problems of dynamically interacting organizations are summarized under the term *"collaborative business (c-business)"* (Röhricht & Schlögel, 2001). It describes the Internet-based, interlinked collaboration of all participants in a value-added network, from the raw material supplier to the end-consumer (Scheer, Grieble, & Zang, 2003). Unlike former concepts regarding only small parts of the value chain, as for example, e-procurement, c-business incorporates all stages of added value (Scheer, Feld, & Zang, 2003).

The ability to network enterprises turns out to be a key success factor in c-business. As a consequence, *business integration* (Scheer et al., 2002) with a holistic view on networking solutions and their business value concerns both, economic-driven as well as information technology-driven aspects of collaboration networking. The link between evolving economic requirements towards the implementation with technology especially gains importance within collaborative environments with a growing heterogeneity of participating partners. Cross-organizational processes have to be designed, implemented, and managed sustainably. While, for example, the technological implementation (Linthicum, 2003) on the one hand, or the life cycle of cooperations (Liebhart, 2002) on the other hand, have already been intensively researched, too little consideration has been given to interconnecting, complexity-reducing management concepts. A rethinking from a pure technology-driven implementation or profit-driven business model discussion to an integrated view spanning from the conceptual level to the system blueprint is needed in order to reduce the inherent complexity and required efforts of business integration in cross-organizational business processes.

A management framework meeting these requirements provides a basis for a holistic and systematic Business Integration. This includes planning, design, and controlling of cross-organizational processes. A proposal for such a framework is being developed by the research projects "ArKoS—Architecture for Collaborative Scenarios" (Adam, Hofer, Zang, Hammer, Jerrentrup, & Levenbach, 2004) and "P2E2—Peer-to-Peer Enterprise Environment" (Kupsch & Werth, 2005). Existing business process management (BPM) methods and cooperation phase models are used as a foundation in the framework, regarding all necessary requirements for business integration from a business process-oriented view with state-of-the art implementation technology.

For a purpose-driven definition of requirements towards a process-oriented management of business integration, central objectives must be identified in order to specify efficient and effective management and implementation instruments. Due to its elementary importance in business networks, the *cross-organizational business process* may be seen as the initial point considering business integration issues. Hence, the authors exemplarily point out the basic characteristics of such processes motivating business integration management in the next section. The authors stress

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