

Chapter 6.6

E-Contracting Challenges

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INTRODUCTION

A decade ago, IT — through its innovations in business process reengineering — led the way in breaking down the inefficiencies within companies. Firms in the new millennium now face relentless pressure to perform better, faster, cheaper, while maintaining a high level of guaranteed results. Firms must thus focus on their core competencies and outsource all other activities. Working with a partner, however, requires breaking down the inefficiencies between organizations and coping with frequent change across the entire end-to-end value chain. In this new world of collaborative commerce and collaborative sourcing, a standard business process is simply inadequate. Using e-contracts to build new business relationships and to fulfill e-contracts through the Internet are important trends.

E-contracting is however not a new concept. The history of e-contracting can be reviewed from legal and technology aspects.

Over the last 20 years or so, a growing body of research in artificial intelligence has focused on the representation of legislation and regulations (Sergor, 1991). As specific regulations, contracts are used to regulate the actions of two- or multi-party interactions. Gardner (1987) has developed contract formation rules. Her work concerns legislation about the nature of exchanges that lead to contractual relations. The ALDUS project and Legal Expert project investigated drafting the Sale Goods contract (ALDUS, 1992) and the United Nations Convention on contracts for the international sale of goods (Yoshino 1997, 1998), respectively. Detailed information on developing logic-based tools for the analysis and representation of legal contracts can be found in Daskalopulu (1997, 1999).

DOI: 10.4018/978-1-60566-026-4.ch196

The law regards contracts as collections of obligations; research in this area includes automated inference methods, which are intended to facilitate application of the theory to the analysis of practical problems. The purpose of a legal e-contracting system is to clarify and expand an incomplete and imprecise statement of requirements into a precise formal specification.

In the early 1990s, the development of EDI (electronic data interchange) was a significant movement for electronic commerce. EDI was considered a term that refers solely to electronic transactions and contracts (Justice Canada, 1995). EDI requires an agreement between trading partners that not only dictates a standard data format for their computer-to-computer communications, but also governs all related legal issues of EDI usage. In 1987, the first set of EDI rules was named the Uniform Rules of Conduct for Interchange of Trade Data by Teletransmission (UNCID, 1987). In 1990, the American Bar Association (ABA) published a Model Trading Partner Agreement and Commentary, together with an explanatory report (Winn & Wright, 2001). In 2000 IBM submitted to OASIS (for standardization) the first example of an XML-based EDI TPA language, called Trading Partner Agreement Markup Language (tpaML).

While the EDI standard introduced efficient communication channels between companies, its implementation was not widely accepted due to its high installation costs, lack of flexibility, and technological limitations (Raman, 1996). With the development of the Internet, electronic contracting began to be interpreted in broader terms. In this new view, an e-contract is not only used as a legally binding agreement between a buyer and seller, but it can also be used across different workflow systems to cross different organizational business processes (Koetsier, Grefen, & Vonk, 1999; Kafeza, Chiu, & Kafeza, 2001; Cheung, Chiu & Till, 2002) to integrate different Web services (Cheung et al., 2002, 2003). E-contracting has become synonymous with business integration over electronic networks.

BACKGROUND

New technologies, the Internet, and other networks have changed business environments and provided the trading processes in e-business more efficiency. Legal regulations, such as the European directive for electronic signatures (EU Directive, 2000) and national e-commerce regulations, have set up a framework for using electronic contracts in business. Concepts of e-contracts under the network environment definitely have different characteristics than the concepts for traditional paper contracts. Whereas a paper-based contract document is a static view on the obligations, an e-contracting system could monitor the responsibilities of each contractual party and the performance of the obligations.

In a networked environment, the definition of the concept of e-contracts can be emphasized as “a contract is a guarantee” or “contracts build new business collaborations between contractual partners” (Xu, 2004a). First, the contract provides a guarantee to all contractual partners according to the clauses of the signed contract and relevant laws. An agreement between consumers and retailers in B2C commerce is a typical example of “a contract is a guarantee.” The agreement provides protection to both consumers and retailers. Second, contractual partners build a business relationship using a contract such as an “arm’s length transaction.” Two (or multi) parties who used different workflows can cooperate using e-contracts to support business automation (Koetsier et al., 1999; Kafeza et al., 2001). Web service composition can also be implemented using e-contracts. There also exist some e-contract applications that actually cover both sides’ concepts. For instance, Trading Partner Agreement (TPA) in ebXML provides a guaranteed business exchange with a certain quality. It also specifies a long-term business relationship/collaboration between partners to conduct the business. It is important to realize though that the concept of e-contract has only a partial overlap with the concept of a paper contract. Both have

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