Chapter 7
Model-Driven Engineering for Electronic Commerce

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ABSTRACT

The chapter explores the development of a specific process e-Commerce metamodel for reuse and interoperability, which is proposed to obtain the taxonomy of e-business processes. It defines a specific ontology and semantics of independent processes platform. This is achieved with the help of the principles proposed by the Model Driven Engineering (MDE), specifically the proposal for the OMG, Model Driven Architecture (MDA), enabling it to minimize the time and effort required to create e-commerce solutions.

INTRODUCTION

The competitive scenario in which operate business organizations are forced to create value as a condition of sustainability, the rapid development of Information Technology and Communications (ICT) make necessary to incorporate the modernization of business processes within framework strategic organizational and technological. The boom in e-commerce as technology has had on the global industry and its impact on the organizational structure, has led to the development of multiple solutions in parallel to the traditional trade.

Enterprises are forced to implement changes in your organization to maximize the opportunities offered by electronic commerce, otherwise are going into bankruptcy. Therefore, the effective implementation of the strategy for e-business transformation turns out to be a critical factor for sustainable competitive advantage (Qingfeng, Wenbo, & Lihua, 2008).

BACKGROUND

Electronic commerce is the buying and selling of products or services over electronic means such as the Internet and other computer networks, its implementation offers advantages to buyers and sellers; the use of electronic commerce facilitates sellers to access narrow market segments that are widely distributed while buyers can benefit from access to global markets with greater availability of products from a variety of offers at reduced costs, this situation improves product quality and
the creation of new forms of business (Grandon & Pearson, 2004).

Originally, the term applies to the execution of transactions through electronic transactions, such as electronic data interchange. However, with the arrival of the Internet in the mid-90s, began referring mainly to the sale of products and services on the Internet through e-payment. The amount of trade conducted electronically has grown extraordinarily since the spread of the Internet. A wide variety of commerce is conducted in this way, spurring the creation and use of innovations such as electronic funds transfer, management of the supply chain, marketing on the Internet, online transaction processing, electronic data interchange, system inventory management and automated data collection (Carmona et al., 2012).

Electronic commerce is also defined as the purchase of products from suppliers and selling to customers using ICT. There are several models of e-commerce, Business to Business (B2B), Business to Consumer (B2C), Business and Government (B2G). Broadly, electronic business (e-business) covers all kinds of collaborations with partners, using ICT, and provides for legal purposes. A business interaction is the electronic exchange of business documents or a message containing a business document vital in a business process, these activities play a key role in the collaboration. Since the late 1960s, enterprises have used information systems for electronic data exchange with trading partners.

Electronic integration has led to dramatic changes in the definition of an enterprise, with the emergence of virtual enterprises whose capabilities to offer their products to market are defined largely by their ability to organize and maintain a network of business relationships in rather than for their ability to produce a product or provide a service. To understand an individual company, you need to study business networks in which it is immersed (Zwass, 1996).

Electronic commerce is a guiding strategic decisions in the domain business to business (B2B), this is a favorable impact on the Internet. There is consensus on the influence on the Internet as a platform for development of alternative channels and / or complementary distribution. The proliferation of electronic commerce can be related to multiple business processes (Faroughian, Kalafatis, Ledden, Samouel, & Tsogas, 2012).

Faced with the evidence that Web proved to be an effective channel for trade, have suggested different views on how companies should develop an e-commerce strategy. Sung-Chi and others define a structure of building e-commerce Web sites with four major areas to break down the core technology that provide the functions that allow to conduct e-commerce activities (Chu et al. 2007) in Figure 1 shows the four areas with representative examples.

**Communications:** For any of the parties involved in electronic commerce activities must establish a virtual channel.

**Information Presentation and Representation:** This specifies the presentation of information (format) and how to organize the exchange (plain text, graphic images, sound and video, or a combination).

**Language:** Precise and logical steps for handling data and computing resources is the critical

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Figure 1. The core technology areas
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