

21

世纪网站开发技术英文丛书(1)

用XML开发电子商务系统

BUILDING E-COMMERCE WITH XML

[美] Richard Martin



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本版英文版电子书

(英文版)

XML Application Framework for E-Commerce

B to B Application

B to C Application

E-Commerce Agreements



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内 容 提 要

本书是一本关于用扩展标记语言 XML 开发电子商务系统的英文版书。当今时代,信息技术飞速发展,人们越来越依靠现代网络技术来实现各种价值,架构自己的个人网站,组建企业的门户网站,进行网上营销、交流和宣传,网页设计技术也就成了关键所在,为此本社特地组织了一套国外最新的网页设计技术丛书,以满足国内广大从事电子商务开发和应用的从业人员学习和工作的需要。

本书主要介绍如何用 XML 语言来架构电子商务系统,全书共有七章,主要内容包括 XML 和电子商务系统的技术关联,XML 语言技术在典型电子商务系统(如 IBM 的整套电子商务组件)中的运用,如何用 XML 语言技术来构建 B2C 和 B2B 电子商务模式,如何用 XML 来实现网络营销等技术。

本书内容丰富,范例典型,技术新,实用性可指导性强。本书的作者是从事电子商务系统设计多年的资深工程师,在 IBM、Sun、Dell 等公司都从事过网络设计,对 XML 语言有相当深的功底,本书不但从事电子商务应用与开发的广大初学者、资深电子商务工程师不错的自学指导书,而且也是高等院校相关专业师生教学、自学读物。

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XML and e-business applications

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The purpose of this chapter is to provide you an overview of e-business applications and XML technology. First, we describe a general model of e-business applications, and identify the main types: inter-business applications (business-to and business-to-consumer applications) and intra-business applications.

Next, we introduce the Extensible Markup Language (XML) and related technologies, standards and organizations, and we show some typical applications.

Finally, we summarize how XML and related technologies can be used in building e-business applications.

1.1 | About e-business

At the beginning of the Internet era, IBM invented the term e-business to give a proper name to a new class of powerful software applications and services that, in its vision, should be developed in the following years. These applications derive their power from combining the universal access and standards of the Internet with the reliability, security, and availability of existing content, core business processes, and applications.

In very simplified terms, e-business refers to the use of Internet technologies to improve and transform key enterprise processes. Most organizations understand this, and have begun the transformation from traditional applications to their e-business counterparts. This transformation has begun to Web-enable core processes to strengthen customer service operations, streamline supply chains, and reach existing and new customers.

Probably one of the best-known applications of e-business is e-commerce, which refers to buying and selling activities over a digital medium. However, as we will soon clarify, e-business embraces e-commerce and includes intranet applications. e-business is the overall strategy,

although e-commerce is an extremely important subset of e-business.

In what way is e-business different than the old order? Some characteristics of the e-business model that set it apart from legacy business systems are these:

- The e-business model facilitates transactions with a much wider group of respondents.
- Communication and other transactions are instantaneous.
- Customers are empowered.
- Competition is fierce.
- Customer communities will emerge.

Examples of companies implementing e-business applications can be easily found as simply as you can browse the Web. But to be much more concrete, and to give you a better idea what e-business applications are, we recommend that you see the case studies discussed at the IBM Web site

<http://www.ibm.com/e-business>.

Following are some typical case studies:

- A commercial insurer developed an online billing inquiry system for agents that saves upwards of \$5000 a month in call center expenses and acts as a platform for a wide range of agent communications needs.
- A retail bank offers Internet banking as a successor to direct-dial home banking by supplying enhanced home banking features and services through the Internet. This application enables the retail bank to acquire new accounts, transition existing customers to home banking, reduce operating costs, and free up customer service personnel to provide value-added services.
- A retailer implements an e-business supply chain solution to increase collaboration with suppliers. In particular, the e-business solution provides the retailer's suppliers with real-time sales and supply information along the entire supply chain. The solution has resulted in significant improvements in shelf-availability of key products (from 87% to 98%) and time required for product introductions and promotions.
- A government Motor Vehicles Registration Division improved service and reduced cost by creating a Web-based driver's license renewal process that increases renewal alternatives, decreases transaction time, and cuts direct transaction costs while helping the division maintain the same level of operating budget.

These are only a few examples of the value that companies are creating when they implement e-business. But, realizing this value is not simply a matter of establishing a Web site or a single, discrete, online application. It arises from an e-business vision and an e-business roadmap that begins with an initial solution that is extendable into other high-value areas of the business. e-business is not just about e-commerce transactions; it's about redefining old business models with the aid of technology.

In summary, an e-business is an organization that connects critical business systems directly to

their customers, employees, partners, and suppliers, via intranet, extranet, and over the Web. As customers, employees, suppliers, and distributors are all connected to the business systems and information they need, e-business actually transforms, innovates, and integrates key business processes.

1.1.1 Business transformation and innovation

The convergence of Internet technologies, IT systems, and business processes creates new business models: e-business models. Thus, e-business poses the most significant challenge to the traditional business model. Computers have increased business speed by automating tasks, but have not fundamentally altered the business foundation; e-business does this. If any entity in the value chain begins to do business electronically, similar companies must follow suit or risk being eliminated. Rethinking and redesigning the business model is not an option, but a necessary step to surviving in the information era.

Companies have found that success in e-business is typically based on building efficient value-added relationships with their customers. Those companies exhibiting the highest degree of satisfaction and success with e-business consistently focus their strategy on improving their performance for their customers. Whether simply making it efficient for a customer to place an order for a product or service, Web-linking and customizing access for a supplier network, or integrating a real-time collaborative product design/development process, the goal is to serve customers better.

Regardless of size or industry, companies follow a similar pattern of e-business adoption. Figure 1 illustrates the typical e-business adoption roadmap.

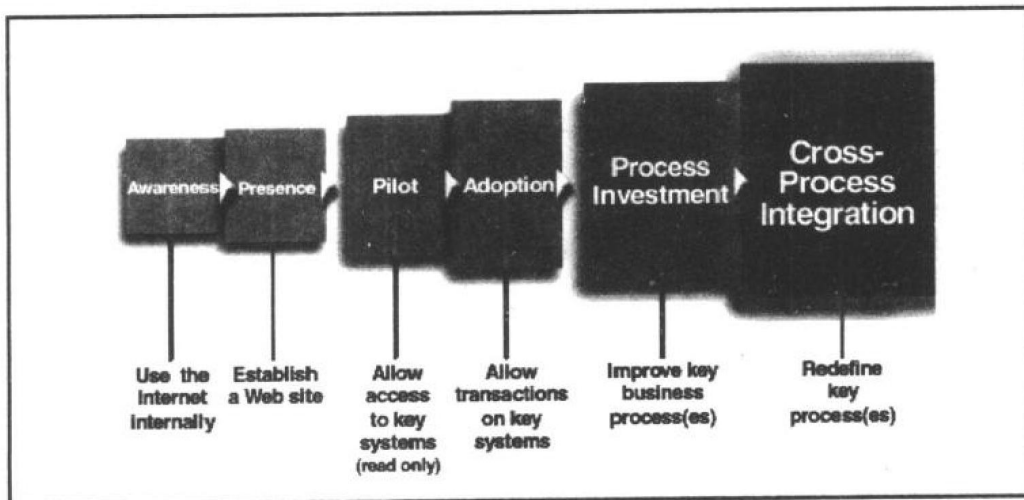


Figure 1. The e-business adoption process

The first two steps are typically a company's introduction to using Web technologies — deploying intranet applications to communicate with employees and establishing external Web presence with information about the company and its offerings.

This experience has led companies to take the first steps toward real e-business — the establishment of pilots that give customers and suppliers access to the information contained in key business systems — for example, opening up the customer database that a service representative views and providing this information to customers directly.

The next step in the cycle extends legacy transaction capability to customers. The travel industry, for example, offered online bookings, while retail banking offered online banking.

The final two steps in the process offer the greatest opportunity for return, as companies transform their business processes by integrating multiple back-end systems to create a common user experience. As an example, an airline has integrated all travel systems and customer processes for bookings, upgrades, seat and meal selection, awards redemption, and frequent flyer account management.

During these last two steps, not only can a customer buy or process transactions online whenever they wish, but the company gains valuable insight and knowledge about the specific needs and behaviors of its customers. They can also segment customers from a behavioral perspective as well as from a value perspective. However, without an initial effort to make the data customer-ready, value for both the customer and the enterprise, though real, would be minimal. Many companies have begun offering online transactions to reduce their costs without considering the value for their customers and, therefore, have not achieved sustained customer commitment to the system.

In the process investment phase, armed with this customer knowledge and with the integration of business intelligence tools, analyses, and insights, companies can improve the customer relationship process by personalizing customer interactions online and integrating the customer view for their entire enterprise. Through these personalized interactions, customer retention and loyalty analysis can be applied to serving the customer more effectively at the point of need, rather than integrating this information after the fact.

Cross-process integration, the final phase in e-business evolution, focuses on integrating across all the processes in an enterprise as well as across customer processes. For the enterprise, this means integrating all the customer touch points across all operational systems from supply to demand fulfillment, and through customer satisfaction. For the customer, it means linking the systems of all the suppliers involved in their process. Airlines, for example, have integrated their booking systems with their frequent traveler services internally and have linked into their travel partner systems to begin offering passengers a single convenient point of fulfillment; retail banks are integrating their services into a much broader single service access point for their online customers.

1.1.2 Which is the e-business value?

There are several trends that are shaping the e-business necessity, and at the same time, its value:

- Businesses of all sizes are impacted by globalization and deregulation, which lowers barriers to entry and dramatically reshapes the competitive landscape.
- Customers now have a broader array of choices and, therefore, are becoming more sophisticated and more demanding — both in what they want from a supplier and how they choose to acquire goods and services.
- As a consequence of the fact that markets are becoming increasingly fragmented (see the first two points above), mass marketing is fading in importance as mass customization becomes the path to serving discriminating customers.
- Technology continues to evolve rapidly to support this environment. The global reach of the World Wide Web enables companies to reach customers anywhere and to connect to employees, suppliers and trading partners wherever they are. This will create an expanding amount of data, which now can be mined for insight leading to better decisions — creating ways to know and serve your customers better and more profitably as well as ways to gain a competitive advantage.

Thus, e-business can dramatically improve competitiveness and create new paths to customer loyalty.

1.1.3 A simplified classification schema for e-business applications

There are a number of ways to classify e-business activities. In this section, these are divided based on the scope of the applications, and on the players at each end of the transaction.

Concerning the application scope, we have two main categories:

- Intra-business applications
- Inter-business applications

The first category, intra-business applications, includes all e-business applications that have a company/organization internal scope. These applications lie in the company/organization boundary and they are connected to internal business activities. For example, this class includes the realization of an Intranet Information Web Site for company employees.

The second category, inter-business applications, includes all applications that require some kind of interaction between the company/organization and some other external entities, such as a customer, a company trading partner, or a financial institution. For example, as we will see better in the following sections, an e-commerce application which models a buying/selling activity between a company and its customers over Internet is an inter-business application as well as a Web-bank application, where, by using the Web, the bank customers can view their account

balances, their recent transactions, and other financial data.

Note: One could argue that sometimes the boundary between an intra-business application and an inter-enterprise application cannot easily be defined. However, just for the purpose of this classification, we are referring to intra-business applications as all applications that are interfaced/used directly by company employees and/or other systems belonging to the company and are isolated from the external world. Complementary, inter-business applications are all those applications that can be interfaced by external end-users (for example, a customer) and/or external applications (trading partner applications).

Classification of e-business activities, or business processes, is described in more detail in the following sections. It is important to note that, although the following sections make a distinction between intra-business applications and inter-business applications, from the infrastructure solution's point of view, this distinction can disappear.

In fact, IBM has defined another convenient way to describe the architectural nature of the e-business solutions that can be applied both to intra-enterprise and inter-enterprise models. As the next chapter explains, recently IBM has introduced Patterns for e-business which will allow IT architects in 80% of cases to quickly develop 80% of their required infrastructure by reuse of proven architecture patterns, design patterns, and runtime patterns, as well as offering design, development, and deployment guidelines and code.

Figure 2 illustrates the e-business application classification schema.

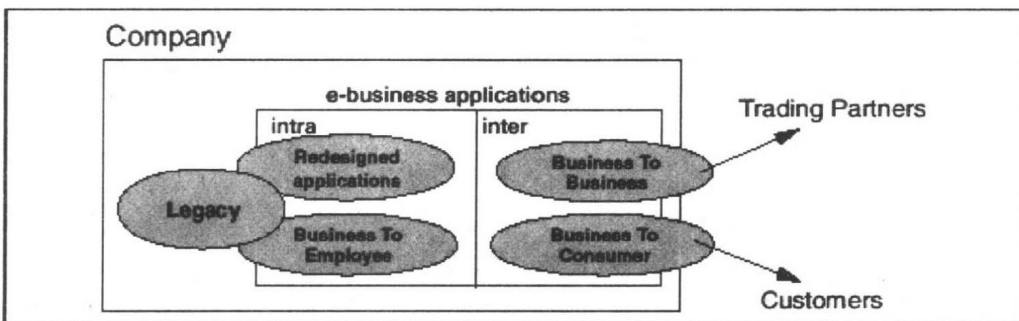


Figure 2. The e-business applications classification schema

1.1.3.1 Intra-business applications

Most intra-enterprise solutions are based on an intranet infrastructure where the purpose of an intranet is to share company information and computing resources among employees — usually, this class of applications are known as business-to-employee (B2E). An intranet can also be used to facilitate working in groups and for teleconferences.