

Chapter 115

Emerging Trends of E-Business

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ABSTRACT

E-business has grown dramatically in the last ten years. Its only constant is change. Awareness of these changes can help both business and customers better utilize and take advantage of e-business. This chapter presents the emerging trends of e-business in various areas, including Web services, Web 2.0, Mobile Commerce (M-Commerce), and corresponding ethical and social issues.

INTRODUCTION

E-business has grown dramatically during the last ten years. The Internet has provided companies with access to new markets and customers. And customers have found e-business an effective way of researching and purchasing products/services. Things have constantly changed since e-business emerged and will keep changing in the future. The benefit of e-business cannot be gained if companies do not understand or adapt properly to these changes. In this chapter, we will not focus on those full-fledged e-business technologies or applications, but on emerging trends of e-business in recent years. These could be the super stars in the near future,

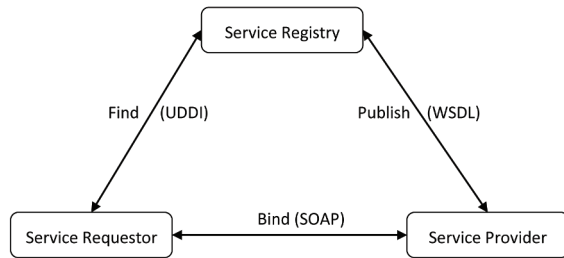
or, if not properly handled, the fatal disasters for some companies. Topics include: Web services, Web 2.0, Mobile Commerce, and emerging ethical and social issues.

Web Services

The growth of e-business depends on business-to-business (B2B), application-to-application (A2A) and business-to-consumer (B2C) interaction over the Web. This requires a technology that supports cross operating system, cross hardware platform transaction, and integration of software modules written in any language, sometime with legacy systems. However, no previous distributed computing architecture (such as Sun Java Remote Method Invocation (RMI), OMG Common Object Request

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Figure 1. Web services architecture



Broker Architecture (CORBA), Microsoft Distributed Component Object Model (DCOM)) can deliver such benefits (Lim & Wen, 2003), because these technologies are heavily dependent on the particular proprietary environment and tight-coupling of client and server, where one application that calls a remote network is tied strongly to it by the function call it makes and the parameters it requests (Joshi et al., 2004).

Web services refer to a group of loosely coupled software components that exchange information with each other using standard network protocols and languages (Laudon & Laudon, 2006). It is a technology that allows applications to communicate with each other in a platform- and programming language-independent manner. It uses protocols based on the XML language to describe operations to execute or data to exchange with another Web service. A set of Web services interacting together in this manner defines a particular Web service application in a Service-Oriented Architecture (SOA) (Laudon & Laudon, 2006). Furthermore, Web services can work on a more abstract level where data types can be re-evaluated, revised or handled dynamically. So, on a technical level, Web services can deal with data much more easily and allow software to communicate more freely than most previous systems (IBM, 2007a). For instance, Google and Yahoo both provided the Web service APIs (application programming interface) allowing other applica-

tions to integrate Google's and Yahoo's map and satellite images. Google has even simplified that process to the level of embedding only four lines of Java codes.

There are separate core standards developed for various Web services activities. The most important ones are Web Services Description Language (WSDL), Universal Description, Discovery, and Integration (UDDI), and Simple Object Access Protocol (SOAP). A basic Web services architecture is described in Figure 1. Web services providers use WSDL to describe a Web service. UDDI registries hold the Web service descriptions. And service requestors around the globe can access UDDI registries to browse and find the specific Web service. Then service requestors bind (invoke as required) the service from the provider based on SOAP.

SOA is a popular way to implement Web services. It is defined as a set of self-contained services that communicate with each other to generate a software application (Laudon & Laudon, 2006). These services interact by passing data from one service to another, or by coordinating an activity between two or more services. With SOA, loose-coupling of software components is more likely. Instead of embedding calls to each other in their source codes, services use defined protocols to describe how they communicate with each other. Often, Business Process Execution Language (BPEL) is used to extend the service concept by specifying the interaction among Web services to support business transactions. BPEL could facilitate the expansion of automated process integration both within and between businesses.

Following the service-oriented trail, one can also find some more recent concepts such as mashups, SaaS (Software as a Service) and cloud computing, among which cloud computing has attracted a lot of attention recently. Gartner stated that cloud computing would be as influential as e-business (Stevens & Pettey, 2008). Evolved from SaaS, cloud computing is service-centered. Gartner defines cloud computing as "a style of

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