Chapter 32
Cloud Integration for Effective Delivery of IT Services

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ABSTRACT
Cloud computing is a state-of-the-art Internet technology being recently adapted by enterprises. The cloud computing models are implemented by business to improve existing practices. With improvement in the standards of the Web and affordability of mobile devices, the customer has accepted the online way of shopping. Cloud computing has been extensively used to deliver e-commerce, Customer Relationship Management (CRM) and Enterprise Resource Planning (ERP). E-commerce models have undergone considerable changes in order to attract customers online. This chapter showcases the requirement of e-commerce model to integrate cloud computing technology. This chapter puts forward cloud computing applications for E-commerce, CRM and ERP by describing the significant characteristics of the cloud. For enterprises to bring into play cloud based e-commerce, CRM and ERP, certain significant issues need to be handled. These issues are the points of discussion in the chapter. In addition, the chapter introduces big data framework for building efficient e-commerce framework.

INTRODUCTION
Internet has transformed the way by which people connect and enterprises do business in today’s age of digital information overload. With the emergence of cloud computing and the benefits it delivers, majority of enterprises are keen to drift towards hosting their services on the cloud. With the improvement in the standards of the Web, e-commerce is being readily accepted by people. It can be defined as online commerce that includes retail shopping, banking, stock trading, online auctions, airline booking, booking a real estate and almost anything possible in the real world.

Cloud computing can be defined as “A style of computing where massively scalable information technology related capabilities are provided as a service across the internet to multiple external customers (Head & Hassanein, 2002). Cloud computing can be applied to conserve adequate energy that can be used in mobiles, but it also display different challenges. Mobile systems are

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extensively used by users to access cloud based application on the smart phones (Kumar & Lu, 2010).

E-commerce implementation earlier depended upon building and spending on robust technology infrastructure. With virtualization e-commerce business has variety of hosting opportunities on the cloud.

The online hosted e-commerce websites provides features including shopping carts, inventory and sales logs, and the ability to accept a variety of payment alternatives including secure credit card transactions. Till defines E-commerce as: “electronic commerce covers any form of business or administrative transaction or information exchange that is executed using any information and communications technology” (pp 9-12). The e-commerce applications are hosted on a server that will use cloud computing techniques and all the requisite resources are regulated for the application to function (Paul, Felician & Marius, 2010).

The Customer Relationship Management (CRM) is described as “a set of ideas and enterprise business processes that have a straight impact on addressing, contact and customer retention, in the areas of marketing, sales and service” (Kumar & Reinartz, 2006). CRM is not limited to employing technology and information system, in addition it includes business strategy focused on understanding customers and based on projecting the needs of current and future customers of the enterprise (Schneiderman & Yih, 2001). CRM is a substitute to increase turnover and profits of the company through the coordinated integration of all business contacts with its suppliers, business partners and customers (Österle, Tomczak & Muther, 1998). It is the process of addressing, maintaining and for future developing relationships with valuable customers” (Brown, 2000).

BACKGROUND

The combination of e-commerce and cloud computing research focuses on the technical level, therefore, cloud computing based e-commerce application framework will have a high practical value (Li & Deng, 2009). Wang (2012) introduced a system that enhances the e-commerce in the cloud computing setting. He formulated modern model for the problem exploration. He also determined relevant challenges of e-commerce framework based on cloud computing, and exploring complementary issues and suitable solution and illustrate how to use the influence of cloud computing.

Efforts were made to resolve the problem of the transaction security in consumer to consumer (C2C) E-commerce. A valuation model was proposed based on cloud model theory (Jie, 2010). (developed an Online Selling Syndicates system with Spring framework and several Apache open source projects for this market based on Software as a service (SaaS) model and analysis of customers’ requirements, multi-channel and multi-tenant are supported by the system (Sun and Yuan, 2012).

Armbrust et al. provided an exhaustive analysis of cloud computing, including the recent opportunities it enables, the potential challenges to its adoption, and a classification of cloud providers. (Illustrated the application of cloud technology in the business arena. The development trend of cloud computing is to solve prime issues of environmental costs when the enterprises apply the e-commerce. From the characteristics of clouds, the network security problems and solutions were analysed (Juncai and Shao, 2012).