

Chapter 3.4

Context Related Software Under Ubiquitous Computing

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ABSTRACT

The advancements in information and communication technology (ICT) have resulted in the new concepts being developed in this discipline. Ubiquitous and pervasive computing are among the number of other concepts provided by the ICT. Especially these concepts are providing scope for radical changes in business processes of organizations. It would become a necessity for integrating business with these concepts to face the new realities in business process in organizations. This chapter describes the historical background of commerce in electronic environment, the concepts related to context computing, ubiquitous computing and pervasive computing, and Grid computing. Further it explains the recent trends and also talks about the three business models with these concepts incorporated in three different contexts.

INTRODUCTION

Information technology has advanced by delivering exponential increase in computing power. Telecommunication technology has like wise advanced communicating capabilities. Convergence of these two technologies has become possible due to rapid advancements made in the respective technology. This convergence has been termed as information and communication technologies (ICT) as a new discipline. ICT is the major stimulus for facilitat-

ing business organizations to adapt themselves to the changes in business environment. Mobile computing is one of the concepts in ICT discipline has helped globalization to become successful. Mobile computing which is used in different contexts with different names. Asoke L Talvkder and Roopa R Yavangal (2005) list the different names related to mobile computing. They are 1- Anywhere Anytime Computing 2-Virtual home environment 3-Normadic computing 4-Pervasive computing 5-Ubiquitous computing 6-Global service portability and 7-Wearable computers. While talking about wearable computers Paul

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Luckowiz, Andreams Timm-Giel, Michael Lawo and Otthein Herzoz (2007) state that in wearable computers are often cited as an enabling technology for out-of office application. The concepts of ubiquitous computing and pervasive computing are providing the scope for innovations and radical changes in applications related to business and home environments. The dictionary meaning of the words “Ubiquitous” and “Pervasive” convey the similar meaning. The word ubiquitous is referred as “Found Everywhere”. The word “Pervasive” is referred as “Spread Throughout”. Ubiquitous computing blends computing devices with environmental objects. It means integration of computing devices into practically all objects in our everyday environment. Ubiquitous computing is based on pervasive computing which has computing activities. It will be interesting to note the complex concepts of ubiquitous and pervasive computing have hidden behind a friendly user interface. These concepts would facilitate creation of new applications and services for the benefit of individuals and business in the ensuing paragraphs.

COMMERCE IN ELECTRONIC ENVIRONMENT

Convergence of money, commerce, computing and networks has laid the foundation for electronic commerce. Effraim Turban Jay E. Arunson and Ting pang Liang (2006) narrate the various applications related to e-commerce. Many large organizations used to make use of the application electronic fund transfer (EFT) for electronic fund fund transfer. Another application electronic data interchange (EDI) has been used for direct exchange of documents from one business computer systems to another. Communications through internet and introduction of the web sites during nineties have led the applications related to electronic commerce to make rapid progress. The year 2000 has witnessed many dotcom companies going out of business. As a consequence to this

electronic commerce was affected. Due to globalization policy followed by many countries across the globe the applications related to electronic commerce have started gaining momentum from 2003. Now many organizations irrespective of the size of their organizations have been making use of electronic commerce applications. In the present business scenario, it may be noted that e commerce business models are being developed for various segments of business and industries. These models can be classified under three purposes such as organization purpose, people oriented and society purposes.. The advancement in mobile communications have made mobile commerce (m-commerce) popular. m-commerce can be considered as one or more features in e-commerce. Mobile commerce is the successor of today’s PC based e-commerce. Two more concepts are emerging under electronic environment. They are space commerce and ubiquitous commerce (u-commerce). Commercial satellite systems are made use of developing system models in multiple domains such as health, education and business. Ubiquitous commerce focuses in the development of location based application software.

CONTEXT COMPUTING

Generally business models developed under information systems follow two methods. They are “Push” and “Pull” methods. When information is thrust on end users it is considered as “Push Method”. The classic examples for this method are advertisements (print and electronic media), telemarketing and information through email and snail mail. End users when they browse websites and go through hard copies for specific information, it is termed as “Pull Method”. It has been the practice among end users to understand the information provided under the above methods and relate it to the particular context. This means end users are proactive to context computing. Now attempts are being made to make the information

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