Chapter 23

Application of Web–Based Geographical Information System (GIS) in E–Business

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ABSTRACT

This research paper discusses about the application of Web-Based Geographical Information System (GIS), an ICT tool for electronic business; particularly through Internet, with a future plan to develop e-promotion and strategic marketing by implementing Web GIS tools for Geobusiness. In the context of e-business, this present study penetrates the usage of GIS to disseminate maximum level of information to the customers. On the other hand, it depicts the growing incorporation of GIS in target marketing, business management, and strategic decision-making processes. It discusses how this modern Geospatial Information Technology (GIT) tool is used for collecting and analyzing information for the efficient and effective management and promotion of e-commerce. Geographical Information System (GIS) is the fundamental science and technology for Geo Design, a systematic methodology of Geographic planning and decision making. Web GIS is the modern technology for capturing, storing, retrieving, mapping and analyzing spatial and non-spatial geographical data in the digital format over the internet. It provides all the GIS functions over the Web, these functions can, in turn, be applied in various sectors of e-business. This paper highlights on the technical aspects of Web GIS for strategic planning, daily business operations, supply chain management, marketing, customer service, improving efficiency and attaining competitive advantage for business organizations.

INTRODUCTION

The current era of technology is the era of internet and e-technology. In the past few years ICT has become an inseparable part of the global or local business. Business has stepped outside the brick and mortar store to the World Wide Web. Commerce has changed to electronic commerce (e-commerce) and business has transformed into electronic business (e-business) and geobuisness. The term e-business gained
common currency via an IBM advertising campaign in the 1990s that emphasized a shift in the company’s technology towards e-business and promised the transformation of key business processes through the use of internet technologies [Li, 2007]. It is defined as the use of information and communication technologies and the Web for almost all the types of business activities, ranging from strategic planning to supply chain management to marketing strategies. It is a very common mistake that e-commerce and e-business are often coined interchangeably. But e-commerce is usually defined as the purchasing and selling of products and services using the Internet or any other computer network; any brick and mortar store can also become an e-commerce business by providing online catalog using a virtual storefront. On the other side e-business encompasses the use of internet protocols and related technologies to benefit business-to-business (B2B), business-to-employee (B2E), business-to-government (B2G) and business-to-customer (B2C) interactions. Initially, e-business started from B2C, i.e., providing online detailed information about products to customers just on a click. Slowly, the trend shifted from just browsing to online shopping and currently, e-business doesn’t mean just B2C online consumer sales, but it also emphasis on B2B sales among companies. Many business organizations have eagerly adopted e-business as they sensed competitive advantage using internet. In addition to cost-cutting benefits associated with carrying out transactions, e-business offered scalability, rapid implementation and modification of infrastructure and the ability to implement functionality in stages [Fu et al., 2011]. In the year 1999, that time-Intel president Andy Grove mentioned that within five years’ time all companies will be Internet companies, or they wouldn’t be companies at all. Harvard Business School Professors John Deighton and John Quelch and Hamilton Consultants of Cambridge, Massachusetts carried out a project in 2009, commissioned by the Interactive Advertising Bureau on Internet and e-business. The project depicts that the direct economic value of services provided by the Internet to the rest of the U.S. economy is estimated at $175 billion. The study also found that, to facilitate online marketing and conduct advertising on the internet nearly 1.2 million people are being involved. The introduction of e-business using Internet or other ICT tools like GIS or Web GIS has profoundly transformed the global business scenario, changing, what companies do and how they operate. The Web based technologies enhances the traditional business techniques and strategic planning which help the organizations to operate efficiently and can increase the reach of the business effectively. The “WebGIS” became a synonym for Web information systems that provides a functionality of geographic information systems on the Web through HTTP and HTML (Shanzhen et al., 2002).

OBJECTIVES OF THE STUDY

This research paper discusses about the application of Web-Based Geographical Information System (GIS), an ICT tool for electronic business; particularly through Internet, with a future plan to develop e-promotion and strategic marketing by implementing Web GIS tools for Geobusiness. In the context of e-business, this present research work penetrates the usage of Web GIS to disseminate maximum level of information to the customers, at the same time allowing the companies to visualize where their potential customers are located by analyzing demographic, economic, psychographic, market characteristics for the right customer just on a click. Thus, providing support for strategic planning, supply chain management, online marketing techniques, improving efficiency and attaining competitive advantage for the business organizations. It discusses how this modern GIT system is used for collecting and analyzing the business information and effectively contributing in business decision-making process.