

Development of E-Commerce Application on Open Source Platform Using Project Management Approach

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Abstract—Business-to-consumer aspect of electronic commerce (e-commerce) is the most visible business use of the World Wide Web. The primary goal of an e-commerce site is to sell goods and services online. In the current situation there are problem with e-commerce application development using project management approach.

The objective of this project is to create an online ecommerce portal that allows merchants to sell their products on the World Wide Web, thus exposing their goods to a global market. Open source technologies are utilized to minimize the cost of such a system. The system is tested and evaluated by multiple users. The results show that an e-commerce portal is an effective way of selling merchants' goods on the internet.

This project deals with developing an e-commerce website for Online Sale. It provides the user with a catalog of different product available for purchase in the store. In order to facilitate online purchase a shopping cart is provided to the user. The system is implemented using a 3-tier approach, with a backend relational database of MySQL, a middle tier of Apache Services and HTML web browser as the front end client.

Keywords: -E-commerce, Open Source, HTML (Hyper Text Markup Language), MySQL – Open Source Database, Project Management Approach.

I. INTRODUCTION

Customers are familiar with the normal way of conducting business: going out to the shops and selecting some goods. Thereafter, purchasing said goods with cash or with a credit card, then taking the goods home. This is a method that has been used by mankind since the dawn of commerce. However, the last decade has seen the advent of a new and more efficient way of carrying out commercial transactions without having to leave the comfort of your home or office. E-commerce can be defined as the digital enablement of commercial transactions between and among organizations and individuals, where all the transactions are mediated by digital technology [1]. It brings a virtual marketplace with new relationships among businesses and consumers.

E-commerce represents not only the ability to purchase and sell goods and services via a digital medium such as internet, but also the ability to automate the entire sales and purchase process. A typical goods or services business will have the following business processes:

- Sales
- Refunds
- Inventory management
- Customer support
- Customer information management
- Marketing

By using new digital business approach, all these processes can be managed by a single functional unit. E-commerce can be conducted either business-to business (B2B), business-to-consumer (B2C), business-to-employee (B2E) or consumer-to-consumer (C2C) [1]. Our goal will be to develop B2B and B2C ecommerce systems in order to reach a global consumer market. [17]

II. PROJECT MANAGEMENT APPROACH

The project management approach is a systematic and step by step process to achieve the desire goals within a specified

Time. The four important and basic phase of project management is Initiation, Planning, Execution and closure. During the first phase of the development process overall analysis of the project is being taken and as per the requirement task will be identified by breaking the entire project into small modules. The Gantt chart below shows that the task has been identified and the required resources to accomplish the task has been assigned. Below shown Gantt chart shown has been calculated by the open source project management tool.

The following flow chart shows the interaction between the customer and an e-commerce website for purchasing goods online. By keeping the flow of online purchasing, e-commerce application has been developed in such a way that new as well as the existing customer can interact with the system easily

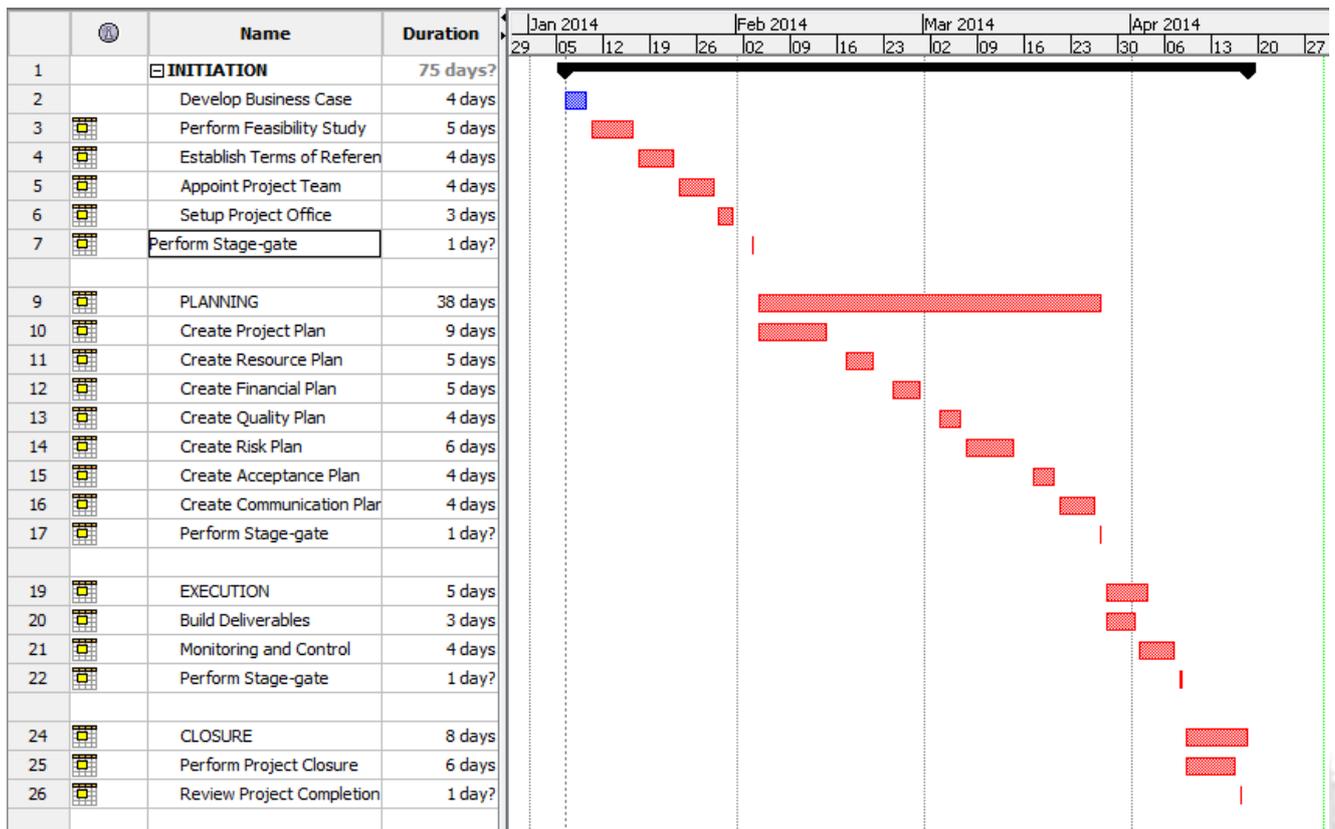


Fig. 1: Gantt chart for each task identified and resources allocated

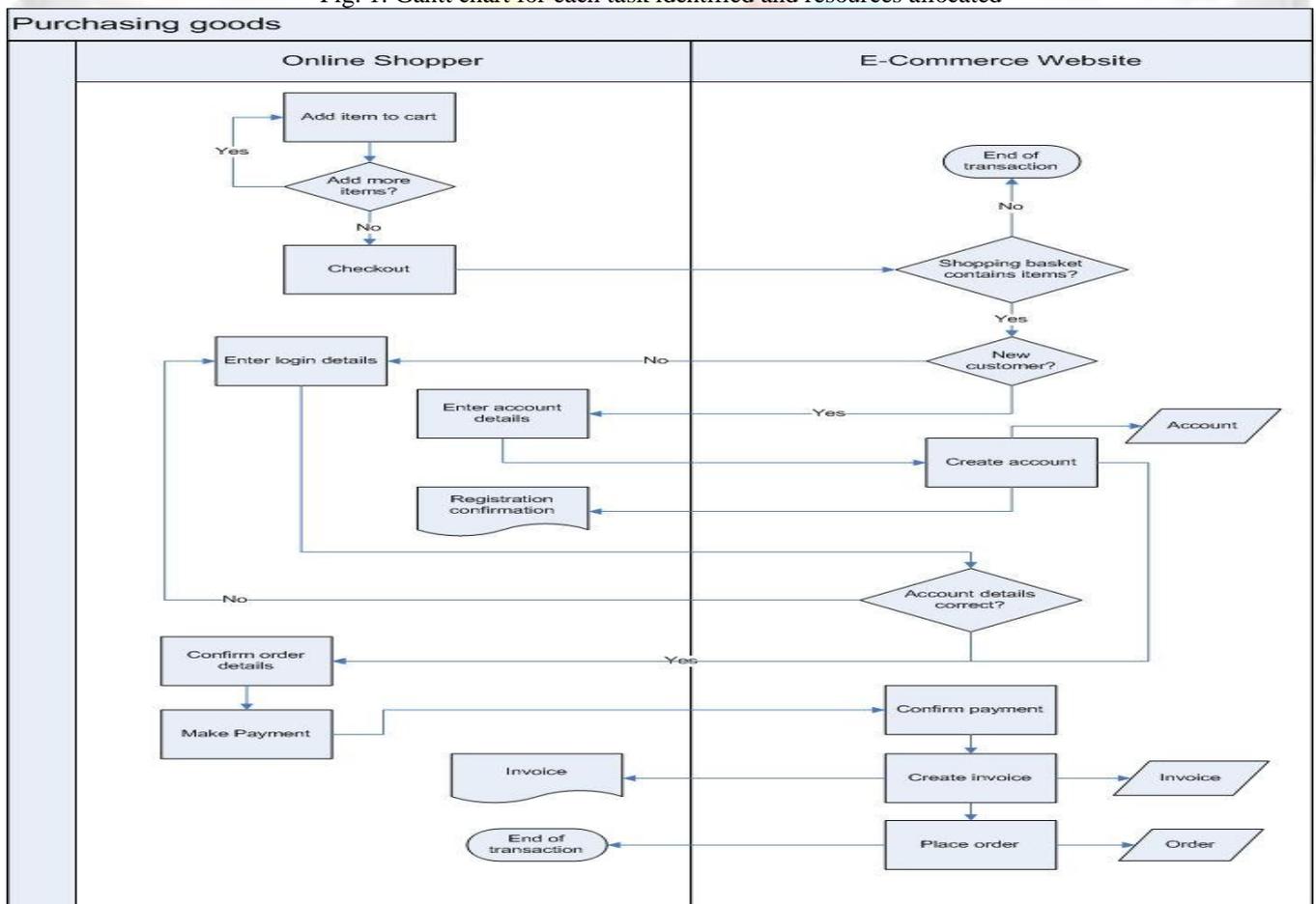


Fig. 2: Flowchart for a customer purchasing goods using the e-commerce portal [17]

During the second phase of the project management approach, planning of all the available resource is done within suitable time frame. In this phase all the design and development plan of the e-commerce application is being done in the context of resource, finance, quality, risk, acceptance, and communication as shown in the block diagram below.

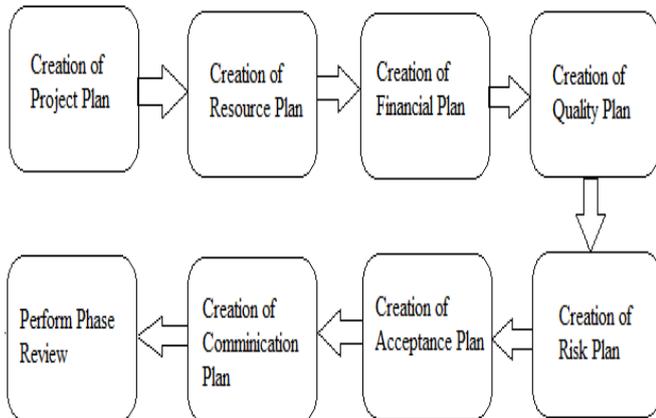


Fig. 3: Flow Diagram of planning phase of Project Management Process

During the project planning of an e-commerce desing and development the system consists of a number of vital components these are as follows:

- E-commerce website
- Relational database
- Security system
- Payment gateway

These 4 components make up the Content Management System, which is the core of the e-commerce system. The following diagram shows how these components fit together: [17]

During the third phase of the project management process, developed e-commerce application is ready to get implemented on the server and going live. In this phase the developed e-commerce is delivered to the client after that all the maintenance, control and support is provided for any frequent error which occurs post implementation.

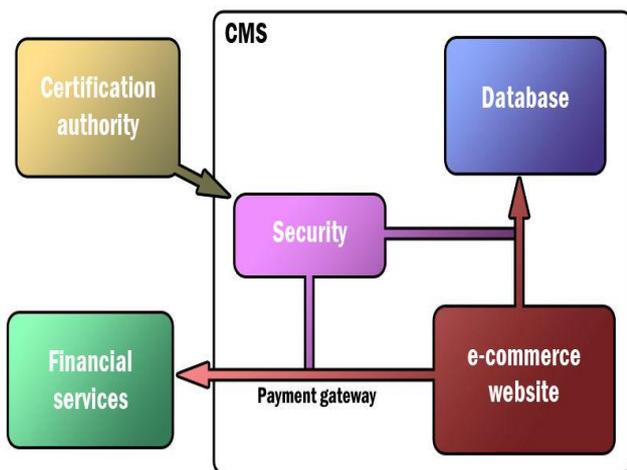


Fig. 4: Components of an e-commerce content management system [17]

During the fourth phase of the project management process the developed e-commerce application will be delivered and project will get closed after final review by the review committee member, sponsors and other stake holders of the client as per the requirement specified.

III. CONCLUSIONS

The design process involved usability studies into how the e-commerce website should be presented to the users, as well as to determine the best design. Using use-cases, website models, and database models, a final design for the system was successfully developed.

The open-source e-commerce portal that was designed, developed, implemented and tested in the duration of this project achieves its intended goals. It does this by allowing merchants to advertise and sell their goods online. It provides merchants with a portal through which they can add, remove or edit their goods, and their personal information.

More importantly, it provides online shoppers a website through which they can buy goods, and pay for it.

REFERENCES

- [1] Wigand, R., T. 1997. Electronic Commerce: Definition, Theory, and Context. The Information Society, 13, 1-16.
- [2] Portillo, E. and Patel, A. 1999. Design methodology for secure distributed transactions in electronic commerce. Comput. Stand. Interfaces 21, 1 (May. 1999), 5-18.
- [3] Sherif, M., Serhrouchni, A., Gaid, A., Farazmandnia, F. 1998. SET and SSL: Electronic Payments on the Inernet. Third IEEE Symposium on Computers & Communications (Jun. 1998). 153-155.
- [4] Andres, G. 2003. PayPal and eBay: The legal implications of the C2C electronic commerce model. 18th BILETA Conference: Controlling Information in the Online Environment (Apr. 2003).
- [5] Gruhn, V., Mocker, M., and Schöpe, L. 2002. Development of an electronic commerce portal system using a specific software development process. In Proceedings of the Fortieth international Conference on Tools Pacific: Objects For internet, Mobile and Embedded Applications (Sydney, Australia). ACM International Conference Proceeding Series, vol. 21. Australian Computer Society, Darlinghurst, Australia, 93-101.
- [6] Robertson, J. 2004. Open-source content management systems. KM Column.
- [7] Srinivasan Raghunathan, Ashutosh Prasad, Birendra K. Mishra, and Hsihui Chang "Open Source Versus Closed Source: Software Quality in Monopoly and Competitive Markets" IEEE transactions on systems, man, and cybernetics-part a: systems and humans, vol. 35, no. 6, November 2005.
- [8] Susan Stecklier "seven steps for your e-commerce program success" e-commerce inc
- [9] Brian Chan, Lionel Marks, and Ying Zou " An Approach for Estimating Code Changes in E-Commerce Applications " Dept. of Electrical and Computer Engineering1 Queen's University Kingston, Ontario, Canada

- [10] Dr. Ion IVAN, Saha PRIYATOSH, "E-commerce Project Management" *Economy Informatics*, 1-4/2004
- [11] Farhad Nejadirani, Masoud Behravesht and Reza Rasouli "Developing Countries and Electronic Commerce the Case of SMEs" *World Applied Sciences Journal* 15 (5): 756-764, 2011 ISSN 1818-4952 IDOSI Publications, 2011
- [12] Deepinder Kaur, Salam Din "An Online Purchase Portal for Books and Seeds in Regional Language (Punjabi)" *International Journal of Advanced Research in Computer and Communication Engineering* Vol. 2, Issue 10, October 2013
- [13] E.W.T. Ngai, F.K.T. Wat "Fuzzy decision support system for risk analysis in e-commerce development" *Decision Support Systems* 40 (2005) 235-255
- [14] Tom Addison "E-commerce project development risks: evidence from a Delphi survey" *International Journal of Information Management* 23 (2003) 25-40
- [15] Andre L. S. Guimaraes, Helaine J. Korn, Namchul Shin, Alan B. Eisner, "The Life Cycle of Open Source Software Development Communities" *Journal of Electronic Commerce Research*, VOL 14, NO 2, 2013 Page 169
- [16] Swapna Kodali "The Design and Implementation of an e-commerce site for online book sale" Project Report Submitted to the faculty of the University Graduate School, May 2007
- [17] Konstantin Masalov—Developing Country E-Commerce Portal Honours Project Report Supervised by: Prof. Ken MacGregor, Department of Computer Science, University of Cape Town, 2007