



## **Ecommerce In PHP and MySQL(Online Shopping Store)**

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### **ABSTRACT**

**E-Commerce** or **Electronics Commerce** is a methodology of modern business which addresses the need of business organizations, vendors and customers to reduce cost and improve the quality of goods and services while increasing the speed of delivery. If you want to build an e-commerce site today, you must answer some tough questions. Here are a few things to ask yourself:

- Many big e-commerce sites have failed. What can e-commerce possibly offer me in today's tougher environment?
- Most e-commerce companies seem to need massive investment. How can I produce a site on my limited budget?
- Even successful e-commerce sites expect to take years before they turn a profit. My business can't wait that long. How can I make money now?

In this paper everything is done from scratch and coded everything by hand, but this requires solid knowledge of HTML, PHP, MySQL, and other programming languages. To shorten the learning curve, one might want to invest in web design software like Adobe Dreamweaver or Microsoft Expression Web but chose Notepad++ as Text editor for project. This project and layout would work handy for any Small scale Ecommerce Business. It consists of functionally related GUI (Graphical User Interface) and a database. The application programme is between the users and the database, where the data is stored for reliability, flexibility and functionality.

**Keywords:** ecommerce, Ecommerce Business, database, GUI.

### **1. Introduction**

In short, e-commerce is generally about combining three different systems: a Web server that can manage an online storefront and process transactions (making appropriate links to bank computers to check out people's credit card details), a database system that can keep a check of the items the store has in stock (constantly updating as people make orders and ideally making new orders with suppliers when stocks run low), and a dispatch system linked to a warehouse where the goods can be instantly located and sent to the buyer as quickly as possible.

On e-commerce sites, there's always a trade-off to make between building an amazing site that everybody will love and creating a site on a limited budget that will make money. E-commerce can be defined as a process in which computer networks are used and they help in the development of the organization. Organizations aim to provide faster services to their customers by using e-commerce strategies. Their ultimate goal is to increase profits, gain market share and satisfying customer needs. For making an integrated e-commerce strategy, there are



various things which have to be examined. They include: The nature of the organization- the industry in which the organization operates. The nature of the product the kind of products in which the organization is dealing, The online model which organization wants to adopt choose among B2B, B2C and others.

This paper shows a logical way to build an e-commerce site that will deliver what it needs to be profitable. However, when designing your own site, you need to think carefully about exactly who your customers are, what they need, how they want to place orders, and what they would most likely to buy. An example of business-to-consumer e-commerce would be an online store such as

## **2. Background**

Let us accept the fact - There is a rising demand for products and services purchased online. E-commerce is the latest fad among the general population across all age groups. The mad race for a share of the online business pie is certain to gain traction with more and more entrepreneurs joining in. If you are an e-retailer already in the business, you will know how important it is to have a business website that is secure, user-friendly, easy to update, and flexible enough to adapt to the rapid changes in customer preferences.

No matter which architecture is chosen for e-commerce, a major question that arises in every development project is which technologies, programming languages, and tools are going to be used, bearing in mind that external requirements can seriously limit your options. A fair idea about PHP frameworks for developing a robust feature-rich e-commerce website will add to your advantage when hiring website developers. In this paper, creation of a web site using PHP 5, MySQL 5, and related technologies is done. Many programmers really like these technologies, but it doesn't necessarily mean they're the best choice for any kind of project, in any circumstances.

PHP is an open source technology for building dynamic, interactive web content [1]. Its short

Amazon.com. Anyone with Internet access and a credit card can access the website, browse products and services, make a selection, and purchase a product by credit card payment with the assurance of delivery in the mail. The Payment System is based in three methods are processes that use debit or credit card models, electronic funds (a digital cheque), and the digital cash. The online shopping and selling experiences changed in a way that it became less time consuming and much less of a hassle for the customers, as well as for sellers who do not have to incur in many costs as they did before, such as the cost of a selling force, extensive paper work, and eventually the cost of installing or refurbishing a selling point.

description (on the official PHP web site, <http://www.php.net>) is "PHP is a widely-used general-purpose scripting language that is especially suited for web development and can be embedded into HTML." PHP is free; especially when combined with Linux server software, PHP can prove to be a very cost-efficient technology to build dynamic web content. PHP has a shorter learning curve than other scripting languages. The PHP community is agile. Many useful helper libraries or new versions of the existing libraries are being developed (such as those you can find in the PEAR repository or at <http://www.phpclasses.org>), and new features are added frequently. PHP works very well on a variety of web servers and operating systems (Unix-like platforms, Windows, and Mac OS). However, PHP is not the only server-side scripting language around for creating dynamic web pages. Among its most popular competitors are Java ServerPages (JSP), Perl, ColdFusion, and ASP.NET.

Most of the data your visitors will see while browsing the web site will be retrieved from a relational database. A relational database management system (RDBMS) is a complex software program, the purpose of which is to store, manage, and retrieve data as quickly and reliably as possible. Many RDBMSs are available for you to use with PHP,



including MySQL, PostgreSQL, Oracle, and so on. However, both formal surveys and real-world practice show MySQL is truly the leading database choice for PHP-driven projects. XAMPP is a package created by Apache Friends (<http://www.apachefriends.org>), which includes Apache, PHP, MySQL, and many other goodies. If you don't have these already installed on your machine, the easiest way to have them running is to install XAMPP. XAMPP ships in Linux, Windows, Mac OS X, and Solaris versions. A text editor is a computer program that lets a user enter, change, store, and usually print text (characters and numbers, each encoded by the computer and its input and output devices, arranged to have meaning to users or to other programs). A fair choice for this research would be notepad++. [5] discussed about a method, Sensor network consists of low cost battery powered nodes which is limited in power. Hence power efficient methods are needed for data gathering and aggregation in order to achieve prolonged network life. However, there are several energy efficient routing protocols in the literature; quiet of them are centralized approaches, that is low energy conservation. This paper presents a new energy efficient routing scheme for data gathering that combine the property of minimum spanning tree and shortest path tree-based on routing schemes. The

### 3. Related Work

Keyword search on "E-Commerce adoption in India" "e-business in India" "E-Commerce and India" and "e-business and India" in various databases like EBSCO, ProQuest, and Emerald Management Xtra found the following E-Commerce/e-business research articles done in Indian context. They give us ideas about work and ideas that various people explored during their research on different areas of E-commerce.

**Raven et al** compared India and China's approaches in adoption of e-business. Based on the literature survey and secondary data, the study analysed various factors influencing the growth of e-businesses in the two countries. The factors examined include government policy and focus, existing

efficient routing approach used here is Localized Power-Efficient Data Aggregation Protocols (L-PEDAPs) which is robust and localized. This is based on powerful localized structure, local minimum spanning tree (LMST). The actual routing tree is constructed over this topology. There is also a solution involved for route maintenance procedures that will be executed when a sensor node fails or a new node is added to the network.

HTML consists of a series of short codes typed into a text-file by the site author — these are the tags. The text is then saved as a html file, and viewed through a browser, like Internet Explorer or Netscape Navigator. This is needed for layout of a web page. CSS: Stands for "Cascading Style Sheet." Cascading style sheets are used to format the layout of Web pages.

JavaScript is a client-side scripting language, which means the source code is processed by the client's web browser rather than on the web server. This means JavaScript functions can run after a webpage has loaded without communicating with the server. Javascript coding is also included in this project.

Now that the theoretical foundations of the project have been laid, it's time to start putting them to work.

technology infrastructure regulatory environment, experience and understanding of business operations, and culture, among others. The study concludes that China appears to be ahead of India in the infrastructure, but India is ahead in e-readiness. Further, it states that both countries are poised for rapidly increasing e-business, however, problems of poverty and inequality between urban and rural connectivity must be resolved to really take advantage of e-business in both the countries.

**Malhotra and Singh** studied the determinants of Internet banking adoption by banks in India. Panel data of 88 banks in India covering the financial years 1997–1998 to 2004–2005 was collected through CMIE (Centre for Monitoring Indian Economy)



database. Logistic regression analysis was used, the dependent variable is categorical with a value of 1 if a bank adopted Internet banking during the study period and 0 otherwise. Independent variables included in the study are firm size, firm age, bank deposits ratio, average wages, expenses (fixed assets & premises), ROA (ratio of average net profits to average assets), market share, average number of branches, percentage of banks adopted Internet banking

**Viswanathan and Pick** examined the issue of e-commerce in India and Mexico from the framework of developing countries as suggested by Tallon and Kraemer. The framework included critical factors that might impact the diffusion of e-commerce. The factors are government policy, legal framework, technology infrastructure, relationship with developed economies and extent of e-commerce usage by individual, corporate and government.

### 3.1 Present Scenerio

Today, almost all businesses need an e-commerce site to sell their products or services and to show their global presence. Hence, most companies show their presence on the Internet by developing e-commerce sites. The e-commerce site that you are addressed to in this paper will be able to sell almost anything, including books, smart phones, laptops, etc. The site will display different product categories via a drop-down menu along with a search box at the top. Users can select the products and can pay online. The paper addresses newbie developers who don't have a lot of experience developing web sites. The paper teaches you how to display and sell your products and services online by developing a fairly good website layout within a week.

This paper helps you build a Model-View-Controller style framework, which is then used to put together an e-commerce application. The framework contains template management, database management, and user authentication management. With core functionality in place, e-commerce-focused features are gradually added to the framework including

**Vishwasrao and Bosshardt** used a theoretical framework developed by Katz and Shapiro (1987) to examine the ongoing technology adoption behavior of foreignowned and domestic firms. Firm level data on 1400 medium to large Indian firms from 1989 to 1993 was used to test the model. Probit and Poisson estimation was used to analyze the data and model. Variables included in the study are no. of collaboration, nature of collaboration—foreign or otherwise, firm age, total assets, total sales, net profit, herfindhal index, R&D expenditures by industry as percentage of sales

Apart from the studies mentioned above, there are quite handful of research reports and survey based studies done by Internet and Mobile Association of India, IMRB International, Data monitor, and Internet and Online Association which presents with quantitative figures, the status of e-commerce existing in the country.

products, categories, customizable products with different variations and customer input, wish lists, recommendations, the shopping basket, and a complete order process.

This paper focuses on how to create your own PHP framework that can be extended and used with ease, particularly for e-commerce sites. Using this framework you will be able to display and manage products, customize products, create wish lists, make recommendations to customers based on previous purchases, send e-mail notifications when certain products are in stock, rate the products online, and much more.

The popularity of online shopping has increased dramatically over the past few years. There are plenty of options available if you not are planning to build your own e-commerce solution, but sometimes it's better to use your own solutions. It may be easy to find an e-commerce system but when it comes to extending it or using it, you might come across a lot



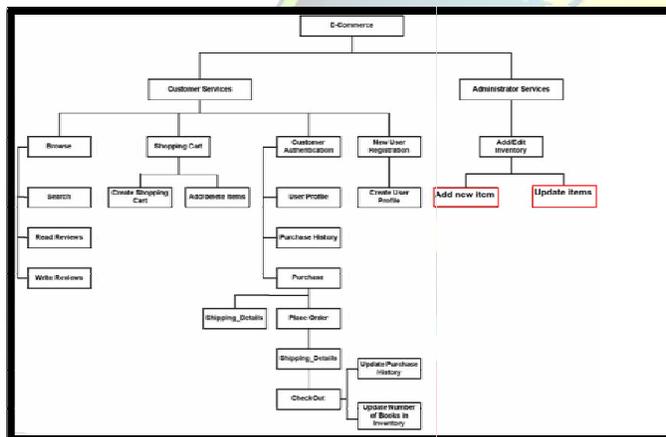
of difficulties so it is good to have own e-commerce solutions.

#### 4. Proposed Work

A decomposition diagram shows a top-down functional decomposition of a system and exposes the system's structure. The objective of the Functional Decomposition is to break down a system step by step, beginning with the main function of a system and continuing with the interim levels down to the level of elementary functions. The same for this research is shown in figure 1.

#### 4.1 Database Design

Database design is the process of producing a detailed data model of database. The data model



contains all the needed logical and physical design choices and physical storage parameters needed to generate a design in a data definition language,, which can then be used to create a database. A fully attributed data model contains detailed attributes for each entity.

One Database with 8 TABLES is created in the php-admin section of XAMPP server. Table Structure is described below as:

- Products
- Categories
- Brands
- Cart
- Customers

- Orders
- Admin table
- Payments Table

#### 4.1.1. Overall Structure of the Interface:

1. The public Website for customers
2. The cart & checkout System
3. Paypal Integration
4. Customer Account
5. Admin panel

The attributes and values can be chosen as per the convenience of the user and designer of the website. Attributes are added to have more functionality and to avoid confusion in various scenarios like taking product id of the product from database.

#### 4.2 Implementation

a) **Creating the layout And Adding content:** The basic layout can be made by making 5 sections which are header, navigation bar, content area, sidebar, Footer by doing coding in the html and css as per requirements.

b) **Creating the Shopping Cart:** Cart should be created in such a way that it should display total items added to cart and corresponding prices for that. Finally it should show the total price of the selected products as well.

c) **Customer Register** business is fundame: ecommerce operation

Figure 1: Functional Decomposition Diagram

area, or user account system, is great way to encourage this by accommodating the needs of repeat shoppers and developing long-term customer relationships. This page lets user to register if visiting for first time or else login to continue shopping.

d) **Custom General User Interface:** User Experience is the first and most strategic step to an optimized user interface design. User Experience conceptualization, planning, and design ensures the site will fulfill your business goals. User Interface



should allow to view or edit information related to him/her. According Php script is created for it using functions.

- e) **Create The Admin Panel:** Your administrator control panel is the suite of administration pages that you use to manage the day-to-day running of your ecommerce business. It is the part of your website that sits behind your shop front and is only accessible to you and authorized members of staff. It allows you to view new orders coming in and keep track of their status, from confirmation of payment through to item dispatch.

You should also be able to use it to manage your product catalogue, such as adding, editing and removing products, modifying shipping rates and offering discounts.

- f) **Payment Gateway Integration:** As the customer has now confirmed their order and the order details, they should be presented with payment details:
1. For offline payments this may be a postal address, a reference number, a name to make checks payable to, and instructions.
  2. For off-site online payment methods, this will be a link or a button to the off-site payment gateway, such as PayPal.
  3. For on-site online payment methods, the page must be securely encrypted, and contain relevant text boxes for the customer to enter their card details. This may also require a separate address field, for their billing address, unless we implement that elsewhere. Paypal can be easily integrated in php script by creating an account on PayPal site.

#### **4.3 Testing and Debugging the Project**

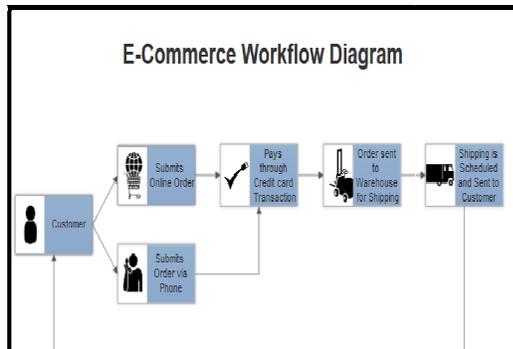
Finally test the project with all tabs and pages created. Test the Home page i.e all modules are working fine as expected or not. Best way of testing the project is to run the project basically on localhost like on wampp or xampp server. At time of updating The Database its values should also be modified. Any error should be debugged and should be corrected by backtracking each step.

#### **4.4 Results**

If all above steps are properly followed with some or no modifications then general prototype of ecommerce can be developed easily. The outcome have various functionality as shown in figure 2.

In this section, payment method is included in e-commerce application by integrating it with payment authorization. Once you've put your own products in the database, hooked it up with your suppliers, obtained a merchant bank account, and put it on the Web, you're ready to go ,that's still quite a lot of work, but none of it is particularly difficult. The hard work is behind the developer and admin of the site.

A workflow consists of an arranged and repeatable pattern of business activity enabled by the systematic organization of resources into processes that transform materials, provide services, or process information.



### 5. Evaluation

Security is a very important aspect with any website, but especially so with e-commerce websites. The security of the server itself is one aspect of security that needs consideration. This can be broken down into two primary areas:

- a) Server software
- b) Firewall and network traffic

#### 5.1 Security

Almost all software contain security vulnerabilities; once a vulnerability has been discovered, it is important to ensure that the software is upgraded or patched to prevent malicious users from exploiting these vulnerabilities. With managed hosting, we don't need to concern ourselves with server-installed software, as our hosting provider should keep that up to date.

However, if we want to concern ourselves with the software on our server (and check our provider is up to date), or if we are operating on unmanaged virtual or dedicated servers, we need to keep updated on security developments with:

1. PHP
2. MySQL
3. Apache
4. The FTP server software
5. The SSH server-side software

PHP framework is most widely used framework for building e-commerce and web application sites. Some statistics that shows the performance in recent past are given below in figure 3.

SQL injection – It is a vulnerability in the database layer of an php application. When user input is incorrectly filtered any SQL statements can be executed by the application. You can configure Apache and write secure code (validating and escaping all user input) to avoid SQL injection attacks. A common practice in PHP is to escape parameters using the function called `mysql_real_escape_string()` before sending the SQL query[2].

Site	Up Since	Server Platform	Programming Language
Google.com	November 1998	Linux	C, Java, C++, PHP & MySQL
Facebook.com	February 2004	Linux	PHP, MySQL and C++
YouTube.com	February 2005	Linux	C, Java and MySQL
Yahoo.com	August 1995	Linux	C++, C, Java, PHP & MySQL
MSN.com (owned by Microsoft)	August 1995	Windows	ASP.net
Live.com (owned by Microsoft)	August 2008	Windows	ASP.net
Wikipedia	January 2001	Linux	PHP & MySQL
Amazon.com	October 1995	Linux & Solaris	C++, Java, J2EE
WordPress.com	November 2005	Linux	PHP & MySQL

Some barriers interrupt the promotion of E-commerce Figure 3: Php running Platforms and misuse of information and failures of systems. The sources of such risks come from several factors such as less of performance, design, security and usability. If those risks are realized, we face several big and small losses: direct financial loss, loss of customer confidence, loss of business opportunity, etc.

#### 5.2 Performance Measures

As the variety of websites increases and usefulness of E-commerce, it gets more important to have a set of evaluation criteria that should meet expected requirements, to illustrate the value of the proposed methodology by comparing the efficiencies of two website designs. To evaluate the effectiveness of the online grocer's e-commerce website, employment of data envelopment analysis (DEA) is done, a non-parametric methodology for production frontier estimation (Charnes, Cooper, and



Rhodes, 1978; Banker, Charnes, and Cooper, 1984) [3]. In the online shopping context, DEA conceptualize the input as customers' actions in navigating through the e-commerce website in order to produce a transaction, in which the output can be regarded as a checkout of a basket of products. The input and output variable for measuring efficiency of a website are discussed in table 1.

CATEGORY	VARIABLE	MEASURE	DESCRIPTION
Inputs	$x_1$	Products	Number of product page views
	$x_2$	Lists	Number of product lists views
	$x_3$	Personal	Number of personal list views
	$x_4$	Order History	Number of orders history page views
	$x_5$	Search	Number of search conducted
	$x_6$	Promotion	Number of promotional page views
	$x_7$	Recipe	Number of recipe page views
	$x_8$	Checkout	Number of checkout pages
	$x_9$	Help	Number of help page views
Output	$y_1$	Basket size	Number of items at checkout

Table 1. Input and Output Variables for Website

The data in this study has been collected at months July, August and September, year 2004 in order to avoid any distortion that might be introduced by the Christmas period. The evaluation efficiency of certain ecommerce sites based on Table 1 parameters and other parameters given in Figure 4 was analysed and was Collected by Maxamine™ web analyst tool[4]. The output is displayed in Figure 6.

Inputs	Outputs
- Home page response time	- Average daily hits
- Average page size (kB)	- Average daily unique visitors
- Total number of pages	
- Distinct number of foreign sites referenced	
- Percent of pages requiring two or more links to reach	
- Percent of pages greater than 60 kB	

Figure 4 : Inputs and Outputs Parameters

Website Name	Website Description	Website URL
1 EL-KATTAN	carpets	www.elkattan.com
2 WOOD STEEL	furniture	www.woodsteel.com
3 BSBUTIL	data security and communication	www.bsbutil.com
4 JUHAYNA	milk and juices	www.juhayna.com
5 JUMBO-BEKA	home service tools	www.jumbo-beka.com
6 NOVA	household appliances	www.nova-cg.com
7 STYLE TEAM	decorative light fittings and traditional lamps	www.styleteam.com
8 COMPU MAGIC	computer accessories	www.compumagic.com
9 ASFOUR	crystals and antiques	www.asfour.com

Website	Rating
1 ASFOUR	21.34%
2 WOOD STEEL	27.93%
3 COMPU MAGIC	71.14%
4 EL-KATTAN	81.17%
5 JUMBO-BEKA	87.14%
6 BSBUTIL	100.00%
7 JUHAYNA	100.00%
8 NOVA	100.00%
9 STYLE TEAM	100.00%

Using the parameters listed in Figure 4, output oriented DEA approach was used to analyze the 9 Web sites. The DEA analysis results in six sites being rated as efficient and three sites are rated inefficient (<80%). Using this DEA analysis tool efficiency of E-commerce websites should be analysed after being uploaded to live server and hosting account. The outcome should be compared with previous Results and if found satisfactory better optimization techniques need to be employed for more enchancement and best outcome.

The research discussed in this paper was initially developed on the localhost and then uploaded to live server for testing above parameters. Some parameters were found satisfactory like home page response time, average page size, time taken for loading all images on a page but some areas need to be improved like traffic management on site, percentage of pages greater than 90 KB. Since this project was more kind of prototype so other parameters could be improved as per requirements of Real-time Project.



## 6. Conclusions

Future of e-commerce is not easily predictable but as per the present scenario e-commerce industry is growing very speedily. There are some essential factors which will contribute to the boom of the e-commerce industry in India which includes M-Commerce services, multiple payment options, replacement guarantee, location based services, shipment options and quick services.

With the rise of identity theft and malware, web security is particularly important. If customers don't believe that a site is secure, they won't choose to spend their hard-earned money there. By using a reliable SSL certificate provider, you'll be able to arm your site against online threats and send your customers a clear message that your company can be trusted.

Companies have been working their way around to innovate the delivery process to shorten human effort as well as time. The answer to these problems is Delivery by Drones. DGCA is now fast tracking the process of issuing guidelines for the use of drones for civil purposes in India. If everything goes as per the plan, then India might become the first country in the world to allow the use of drones for civil purposes.

Statistics suggest the future of internet lies in mobiles. Experts say more than 580 million people in India will use the Internet by 2018, and 70-80% of them will access the Web on mobile phones. This will cause all major players to switch to app only model. About two-thirds of its online traffic of Flipkart comes from users in small cities and towns. Google is reportedly working on its own "Buy Now" style button that would allow e-shoppers search for products on Google and purchase them with a single click, right through Google's own search results page. The button will be displayed near sponsored search results beneath a "Shop on Google" heading at the top of the page. When users click on the Google's "Buy Now" button, they will be re-directed to another Google page that will allow them to choose specific item details, such as color and size, and then select a

shipping route. Google would then pass on order information including the customer's name and shipping address, to the retailer.

As the ecommerce space gets saturated, investors looking for innovative use of technology are zeroing in on companies developing artificial intelligence (AI) solutions. PHP security has to be taken care here so that nothing malicious and injection could harm your database and site from crashing. Recommendation System can be build using machine learning so that most frequent visited products can be recommended to users who previously searched for it. Future of e-commerce is not easily predictable but as per the present scenario e-commerce industry is growing very speedily. While in countries such as the US and China, e-commerce has taken significant strides to achieve sales of over 150 billion USD in revenue, the industry in India is, still at its infancy. On the behalf of the study and experts views the future of e-commerce would be very bright in India if implemented with the all essential factors[6][7].

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