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Development of an Electronic Commerce WEB Application

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ABSTRACT

Electronic commerce is the buying and selling of product, services or information via computer networks, mainly the Internet. (electronic collection of real or virtual resources, which may also be available elsewhere). This paper present the development of an electronic commerce web system for efficient business management. The proposed system attempt to make a soft copy of all the products and goods available in a given business firm to be easily viewed by potential customers globally and have easy access to it. The proposed system came to limelight in an attempt to proffer solution to the problems associated with traditional means of managing business like difficulties encounter in the traditional operation and running of businesses through the use of online facilities, inventory management of what the companies have in their store, documentation of products and services and advertisement of goods and products online (purchase of goods).

Keywords: e-commerce, WEB, application, HTML.

INTRODUCTION

The Web is one of the most revolutionary technologies that changes the business environment and has a dramatic impact on the future of electronic commerce (EC). The future of EC will accelerate the shift of the power toward the consumer, which will lead to fundamental changes in the way companies relate to their customers and compete with one another. The immense popularity of the Internet in recent years has been fuelled largely by the prospect of performing business on-line. More and more companies set up their own corporate LANs by Intranet, apply Extranet and Internet to work collaboratively with their customers, suppliers, and partners. The Internet can bring down physical barriers to commerce, almost immediately giving even the smallest business access to untapped markets around the world. At the same time, consumers can conduct business and make purchases from companies previously unavailable to them. Furthermore, companies are able to place marketing material on Internet servers ranging from simple advertising to comprehensive virtual brochures.

In today's global marketplace, fast reliable information is a necessity for most companies to attain some kind of competitive advantage. For instance, companies can create a virtual marketplace in which to sell their products. This virtual market is untapped and could reach millions of users on the Internet 24 hours a day.

Electronic commerce is defined as buying and selling of product, services or information via computer networks, mainly the Internet. As the fastest growing facet of the Internet and other information technologies, EC offers functionality and new ways of doing business that no company can afford to ignore. The basis for moving to an electronic commerce is a belief that electronic markets have the potential to be more efficient in developing new information-based goods and services, finding global customers and trading partners to conduct business. Electronic commerce via the Internet or the next generation Internet Protocol, IPv6, will change business institutions, operations and products or services as we know today, just as the telephone, TV, fax, and e-mail changed the way businesses and consumers communicate.

Electronic commerce has become very popular because of the benefits and the convenience it brings along. The benefits include: product promotion, cost saving, timely information, shortened remittance time, information consistency, better customer service, better customer relationship, customization of products, competitive advantages, and convenience of doing business. Electronic commerce is no longer an alternative, it is an imperative.

The traditional business operation has a number of setbacks which include: inability to get to people who are far away i.e. at distance and other countries. Sales are made to only immediate customers, distances clients or customers are not reached, no

efficient means of payment, lack of accountability, inefficient customer services, lack of business management and inability to manage business from faraway places.

METHODOLOGY
System Design
Description of the existing system

The architecture of the existing system was basically manual oriented. The system was initially developed to cater for the products in the business area. The system was dimmed efficient during the initial stage of its establishment. The system caters for all the products owned by the business man. The objectives of the system were borne out of the fact that, business man cannot exhaustively make his products visible to his clients; therefore there is a need for the clients to search for more information of his products and services.

The proposed system

The newly proposed system is computer driven. The system is a modification of the various functions of the previous system, with better and efficient routine execution. The design takes into cognizance the input, output and the speed of processing information. The major factors considered during the design are the input and the output, which was the main problem of the previous system.

The proposed system output design

The output design made available by the system is very flexible. The records of already existing client can be displayed on the screen, by inputting only their username. This feature provides easy accessibility and unlimited flexibility for users. The output design also available is the ability of the user to print report of records i.e. List of available products in the Collection.

Table 1: DB: Existing user's table

FIELD NAME	DATA TYPE	SIZE
USERNAME	TEXT	30
PASSWORD	ALHANUMERIC	10

The proposed system input design

The input design of this is made very flexible and user friendly. The input design has the ability of instructing the user how inputting data can be done. The input design would accept the following information: Users User's name, email address, User's password etc.

Table 2: DB: New clients record

FIELD NAME	DATA TYPE	SIZE
FIRST NAME	VARCHAR	20
MIDDLE NAME	VARCHAR	20
LAST NAME	VARCHAR	20
E MAIL ADDRESS	VARCHAR	25
PASSWORD	VARCHAR	10
HOME ADDRESS	VARCHAR	30
PHONE NUMBER	INTEGER	11

The input also has the capacity of accepting information regarding the transaction made by the user. The products viewed and added

to the shopping cart, when it was paid for and when it is due for delivery. The input design is shown below and is where clients are meant to register so that they can get access to the available products.

Table 3: DB: Product record

FIELD NAME	DATA TYPE	SIZE
PRODUCT IDENTIFICATION NUMBER	INTEGER	10
PRODUCT NAME	VARCHAR	20
PRODUCT CATEGORY	VARCHAR	20
PRODUCT PRICE	VARCHAR	10
PRODUCT CODE	VARCHAR	15

Table 4: DB: Admin user

FIELD NAME	DATA TYPE	SIZE
USERNAME	VARCHAR	20
USER ID	INTEGER	20
PASSWORD	VARCHAR	30

Table 5: DB: Enquiry table

FIELD NAME	DATA TYPE	SIZE
PHONE NUMBER	INTEGER	11
NAME	VARCHAR	20
EMAIL ADDRESS	VARCHAR	25
MESSAGE	TEXT	50

Table 6: DB: ORDER TABLE

FIELD NAME	DATA TYPE	SIZE
ORDER ID	INTEGER	20
REFERENCE NUMBER	INTEGER	20
USER ID	INTEGER	25
ORDER DATE	VARCHAR	50

WEB design tools

Web designing tool includes the tools or applications which are needed to design or code the proposed E – Commerce web app. This can be achieved using coding languages such as HTML, ASP.NET, MySQL and MICROSOFT VISUAL STUDIO.

WEB host for E-commerce

A web hosting service is a type of Internet hosting service that allows individuals and organizations to make their website accessible via the World Wide Web. Web hosts are companies that provide space on a server owned or leased for use by clients, as well as providing Internet connectivity, typically in a data centre. Web hosts can also provide data centre space and connectivity to the Internet for other servers located in their data centre, called collocation, also known as Housing in Latin America or France.

The scope of web hosting services varies greatly. The most basic is web page and small-scale file hosting, where files can be uploaded via File Transfer Protocol (FTP) or a Web interface. The files are usually delivered to the Web "as is" or with minimal processing. Many Internet service providers (ISPs) offer this service free to subscribers. Individuals and organizations may also obtain Web page hosting from alternative service providers. Personal web site hosting is typically free, advertisement-sponsored, or inexpensive. Business web site

hosting often has a higher expense depending upon the size and type of the website.

Single page hosting is generally sufficient for personal web pages. A complex site calls for a more comprehensive package that provides database support and application development platforms (e.g. PHP, Java, Ruby on Rails, ColdFusion, or ASP.NET). These facilities allow customers to write or install scripts for applications like forums and content management. Also, Secure Sockets Layer (SSL) is typically used for e-commerce.

The host may also provide an interface or control panel for managing the Web server and installing scripts, as well as other modules and service applications like e-mail. Some hosts specialize in certain software or services (e.g. e-commerce), which are commonly used by larger companies that outsource network infrastructure. Web host are hosting provider that can accommodate all of the tools you want to use and offers the features that is needed for an e commerce web site.

Payment Solution

The payment process is what puts the "commerce" in "e-commerce." There are two kinds of payment systems that you should consider for your site: a payment processor and a payment gateway.

Payment processors, like PayPal Website Payments Standard and Google Checkout, will send a customer to a checkout page that is hosted by the processing company. After customers submit their credit card information, they will be sent back to your web site. In contrast, payment gateways—such as Authorize.net—integrate directly with your shopping cart and the transaction is essentially invisible to your customer.

There are pros and cons for payment processors and payment gateways that you should weigh. For some web site owners, payment processors can be easier to use because they do not require any backend integration with web sites. When you use a payment processor, you also don't have to worry about securing financial transactions because the processing web site will take care of it for you. However, a payment processor will also take your customers away from your site during checkout, a process that may cause confusion and may give them second thoughts about completing their transaction. Payment gateways on the other hand require more technical know-how, and you will have to obtain an SSL certificate to protect credit card transactions on your site. Even with these additional considerations, a payment gateway will keep customers at your web site during the transaction, making the user experience smoother and more professional.

Before you decide on a payment processor or gateway, you should also research the transaction, set up, and service fees that each provider charges. Average charges vary widely across the industry, with some processors charging a cash fee plus a percentage of each transaction (for example, PayPal charges 30 cents plus 2.9 percent of every transaction for merchants who receive $3,000 or less per month in payments). Setup fees for gateways can cost anywhere from $99 to $299, and fees typically range from 10 to 50 cents per transaction. Merchants with high sales volumes can often find providers that offer a fixed monthly rate for transactions. It is often best to start with your own bank to see what merchant solutions for credit card processing they recommend.

While set up costs and fees and important, there are a few more features that you should think about before making a decision. Check to see whether the payment services provider you're interested in offers automatic tax calculations. This will make it much easier to figure out how much sales tax you should be collecting and will cut down on accounting headaches during tax season. Also be sure to find out if the processor or gateway you want to use can automatically calculate shipping charges. With this kind of service, you'll know exactly how much to charge your customers so shipping costs won't eat into your bottom line.

Shopping Cart

At brick-and-mortar stores, shoppers pick items from shelves, put them in a cart or basket, and usually bring them to a cashier when they are finished shopping. There is a need to set up a similar system—commonly called a shopping cart solution—for the online store. Typically, shopping cart software allows people to select items from web pages, add them to their "cart," and walk them through the purchase process when they are ready to check out. Most shopping carts will also include taxes and shipping charges to give customers a total for their order.

When choosing a shopping cart to go with your payment processing solution, make sure it's supported by your hosting provider and look to see if the cart offers the payment and shipping options you need. There are a number of open source carts with active communities like osCommerce and Zen Cart, as well as GeoTrust Partner solutions like 3dcart.com. Shopping cart can be created using web page authoring programs like Dreamweaver or programming it from scratch using PHP, MySQL, and other web programs and languages.

SSL Security: An absolute must-have for the site

A nice site design and seamless integration with a payment system are great, but the on-line shop owners and customers need to be protected from fraud and theft. Security is one of the biggest concerns that shoppers have when it comes to buying online. In fact, a recent survey found that 45 percent of consumers are worried about identity theft when they buy on the web. Even more troubling for e-commerce business owners, security concerns like these have a serious impact on consumer behavior. The National Cyber Security Alliance recently found that a majority of Americans—64 percent—have abandoned an online purchase because they were not certain that a web site was secure.

Given these fears, SSL security is critical to your web site. With an SSL certificate, you'll be able to prevent cybercriminals from intercepting financial data as it's transmitted over the internet. Not only that, but you'll also be able to show your customers that your business is legitimate and can be trusted.

Transaction Processing Cycle

Transaction processing system (TPS) is Information system used to support and record transactions such as paying for products or paying an employee (e.g. payroll system that calculates an employee's pay and cuts a check). Transaction processing systems shares a common set of activities called the transaction processing cycle. It Batch processing where Transactions are collected over time and processed together in batches. It is useful in situations where transactions take place away from the computer system. Online transaction processing takes place at the point of sale, critical to time-sensitive transactions such as selling concert tickets and making flight reservations. Order processing system supports the sales of goods or services to customer arranges for shipment of products, supports the purchase of goods and raw materials from suppliers.
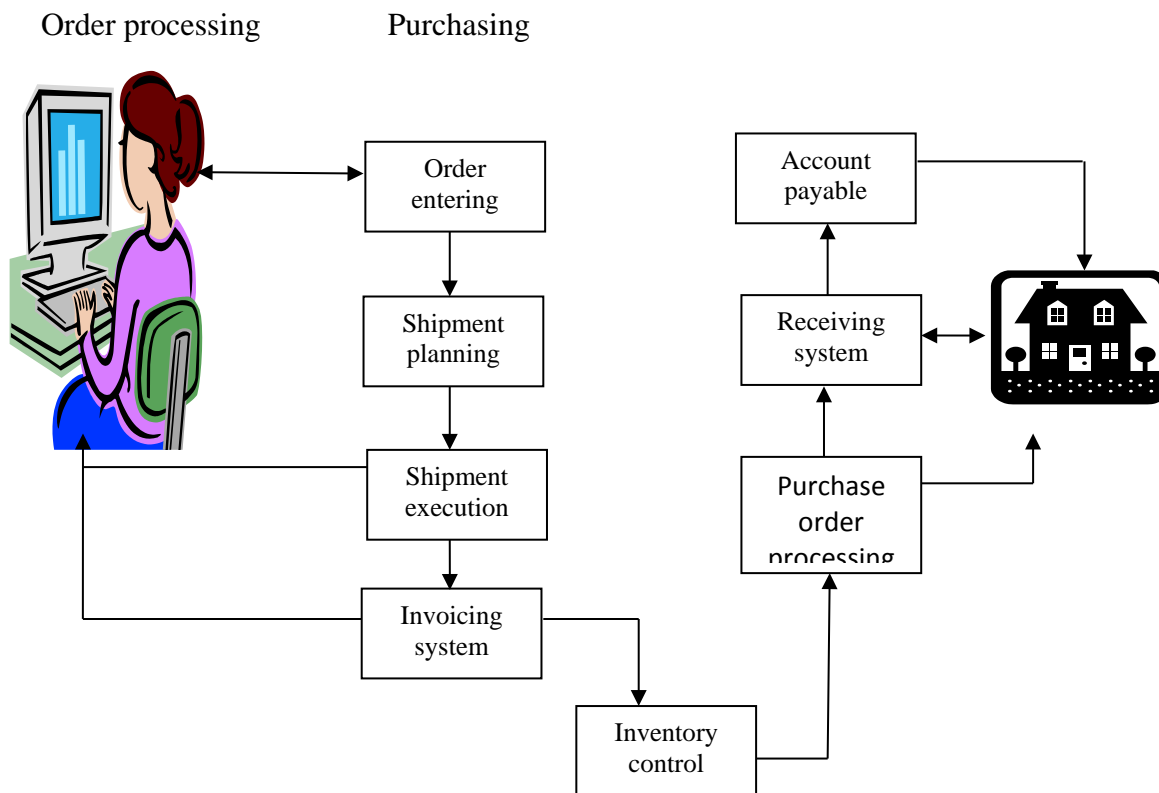
Order processing   Purchasing

Figure 1: Block diagram of transaction processing system interaction

System Implementation

The proposed system was developed in other to solve the problems associated with the existing system. The reason for the proposed project is not farfetched. The proposed system intends to correct the well-acknowledged inadequacies of the existing system such as excessiveness in paper works, repetitive task management. The proposed system is an automatic system which would be computer based. It is expected to make the problems of the existing system a thing of the past. Its functions to be performed includes: increase in transaction speed, keep track of record with greater accuracy and precision, perform repetitive task with ease, establishment of a user friendly interface with the users and permit sequential access to products in the store.

Testing

The hardware and the software for the proposed system were both installed to test the functionality of the system. During testing errors were detected and debugged, amendments were made to hardware installation initially implemented.

Furthermore, since a need has been indentified for a new system, then it is imperative to replace the old system with new one. The change over technique adopted was direct changeover. This involves immediate overhauling of the existing system, on completion of the new system. This would have been avoided, if the existing system were automated. The need to employ direct changeover was necessitated by the fact that, there is a dire need for replacement.

CONCLUSION

The computerization of the traditional business methods would help put a halt since e-commerce in Nigeria would afford greater access to resource material on products, outweigh operational costs of setting up conventional store, and create better opportunities for enriched buying and selling of goods and services and it will reduce the slow access to inaccurate data retention and excessive paper work.

RECOMMENDATIONS

The system is recommended because of its vast features. It also has a security mechanism (user name and password) which does not allow an unauthorised user. The system is preferred and recommendable because it offers fast accessibility to products and service, reliable storage facilities it offers, elimination of excessive paper work incorporated in the previous system, it has anti-virus to avoid virus invasion.

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