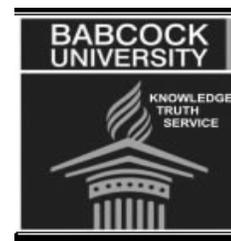




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Development of a University online store

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Abstract

This research work is aimed at developing and deploying a basic e-commerce website (A University computer online store) embracing the latest methods and trends of conducting businesses with the advancement of technology. The work covers the electronic trading of goods and services, electronic fund transfer, online procurement, direct marketing, electronic billing, etc, through the internet via the computer. The proposed system provides a self serve, easy to use site that offers a user friendly purchasing experience, provides personal attention through the use of tools such as feedback forms, to substitute for the face to face human interactions used in non electronic commerce, enhances reliability and security as regards customers' method of payment online by requiring specific details from customers. The site handles basic buying and selling, alleviating the stress encountered in the traditional commerce situation. It allows customers the opportunity to shop at their convenience without wasting time, money and effort, and also to conduct real time transactions in a borderless world, 24 hours a day, 7 days a week. The products associated with the university online store are limited to just computer accessories and products. The development of the University online store combines open source solutions to provide a free and open e-commerce platform, which includes the powerful PHP (Hypertext Preprocessor) web scripting language, a complete software package allowing the use of all the power and the flexibility that dynamic languages offer, as well as the efficient use of databases. Package includes an Apache server, a MySQL database, a full PHP execution, as well as easy development tools for web sites or applications. It also allows developing applications on a local computer without having to upload to a server., HTML (Hyper Text Markup Language), the stable Apache web server, and the fast MySQL database server (An open source relational database management system (RDBMS) that uses Structures Query Language (SQL), for adding, accessing, and processing data in a database).

Keywords: E-commerce, Buying and Selling

Introduction

In an increasingly competitive global marketplace, it is extremely important for businesses to embrace the latest methods and trends to conduct their businesses. With the advancement of technology, particularly the internet, the world has discovered a new path of opportunities, switching the transactions of traditional business models into a better model far superior in terms of efficiency, productivity, profitability and competitiveness (Longmire, 2000).

Ecommerce, or Electronic Commerce, is one of the most important aspects of the internet to emerge. It allows people to exchange goods and services immediately and with no barriers of time or distance.

Also known as business-to-consumer and business-to-business commerce conducted by way of the Internet or other electronic networks.

Electronic commerce consists of the buying, selling, marketing, and servicing of products or service over computer networks (iSoS 2007).

E-Commerce does not change the core of businesses, which is to generate profits from transactions, but it is to change the mindset of how to go about generating profits through an efficient manner. This simply means obtaining information at our fingertips, without wasting time, money and effort, and also to conduct real time transactions in a "borderless world" 24 hours a day, 7 days a week. It offers distinguished

benefits such as less overhead expenses, larger advertising market exposure, and reduces middle man participation and all these benefits are easily understood and quantifiable. E-commerce is the main reason a large number of Web sites exist on the Web. It has opened a whole new world for retailers, wholesalers, and other types of marketers. In some cases, it has even made a few people very wealthy. (*Choi et al., 1997*) But, for the most part, it has become another method of creating income, whether it is to make a living or just a little pocket change. Since it is different than the type of commerce most people are used to, producers and/or sellers need to understand how to reach customers and how to keep them once they get them. According to a report on eCommerce-Guide.com, two-thirds of the U.S.'s adult Internet users are also online shoppers, corresponding to about 134 million purchasers. In 2000, only about 47.8 percent of those online had made a purchase, according to Washington, D.C.-based Pew. Findings from the group's February study also indicates that about 78 percent of online Americans use the Internet to research a product or service before making a purchase (Amazon.com 2001). On the contrary, E-commerce is not slowing down; it is rapidly growing around the world, making for a true global economy.

Analysis of the Existing System

The predominant mode of commerce (the existing system) involves a communicative transaction between two parties playing very familiar roles: *buyer* and *seller*. For commerce to occur, somebody must do the selling, and somebody must do the buying, and these two parties must share a basic understanding of how the transaction is generally supposed to flow. (*Marshall Brain, 2000*). In traditional commerce, the following limitations can be identified as follows;

- The buyer and the seller must make eye contact.
- It is limited by the barrier of time, distance and location.
- Requires employment of staff.
- Problem and risk of carrying cash especially in the case of bulky and expensive products such as electronics and so on.

- Problem of transportation.
- Slow trading cycles especially in popular trading centers and so on.

The above listed limitations have been analyzed with a view to developing a system that will remedy the problems identified. The feasibility study reveals that the development of the proposed system is feasible (i.e. a solution is possible) based on risk (limited risk), technicality (availability of technical resources and expertise), operation (acceptability), cost (benefits outweigh costs) and schedule (system can be developed within available time limits).

The primary objectives of the proposed system are;

- To provide a self serve site, easy to use, offering a responsive, user-friendly purchasing experience.
- To provide personal attention through the use of tools such as feedback forms, to substitute for the face to face human interactions used in non electronic commerce.
- To provide a facility for currency conversions such that anybody, anywhere in the world can purchase conveniently.
- Enhancing reliability and security as regards customers' method of payment online.

System Implementation

Starting the online lotus store

This application is web-based. This means that anywhere access to the internet is available; transactions associated with buying items on the lotus store can be made. Such transactions include:

1. Catalog list and Purchases
2. Trace and management of location of items on transit
3. Verification of available funds in customers' Bank
4. Conversions of values from one currency to another.

To start the lotus website, type the following in the URL of a web browser: www.in4webs.com/lotus and press the enter key. This action will result in the display of a screen as shown in figure 1.

Typical of all sites is what is referred to as font pages. The e-commerce site comprises of an initial page with 4 frames: The top frame, the left frame, the bottom frame, the middle frame.

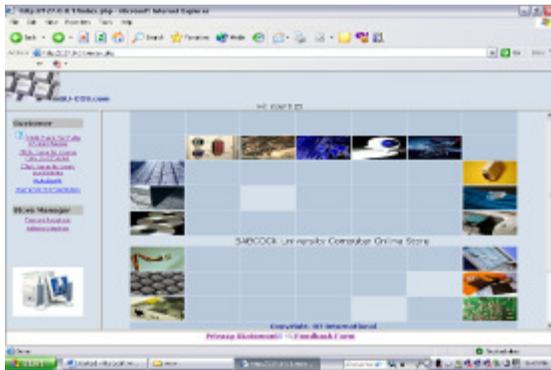


Figure 1: Home Page

The top frame is reserved for the site logo, hit count, adverts and site name. The left frame could contain logins for specialized services and offers, links e.g. process tracking, help, news about newly introduced products, top sellers, auctions etc. The bottom frame will contain links like the site copyright information, general privacy statement, web master's contact information, and customer feedback forms. The middle frame is the window for previewing result of links.

Making purchases

Displaying available catalogs

To start the process of buying an item from the lotus store, click on the link to invoke a page similar to the screen displayed in figure 2.

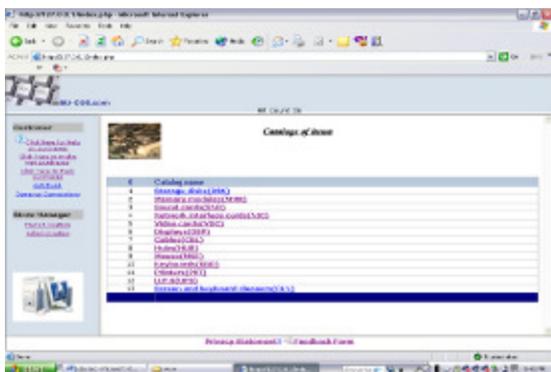


Figure 2: Catalog of items page

This page displays a group of items in a list format. Each group of item on the list gives an umbrella description of items associated with it. Each time this page is loaded, available stock items are read from the stocks file in the database and displayed as links as shown in the table above. Customers are expected to click on the link of the desired catalog.

Each catalog describes a group of items. To view the associated items, customers are expected to click on the link of the desired catalog. A click on any of the links will result in a screen as shown in figure 3. Using the navigation button provided by the browser, customers are suppose to move around until they locate a catalog describing the items they wish to purchase.

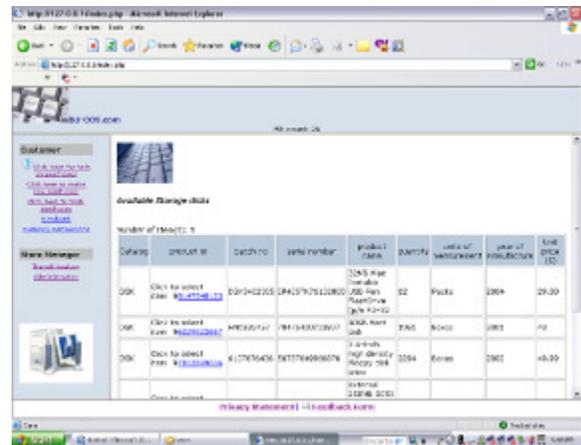


Figure 3: Associated items page

Displaying and selecting catalog associated items

When desired catalogs are located, users, by process must click on it to open up a page of associated items. The following screen shows sample item screen due to a click of a catalog row of the catalog page as shown in figure 3.

The items page is a page of items associated with a catalog link that is clicked on the catalog page. Each item displayed on the items page is a link on its own. Items of this page may be selected into a Basket in readiness for purchases. To increase the content of a basket,

1. Click on the product-id of a desired item on the items page. This displays the description of the item clicked.

Input the Quantity of same item intended for purchase and click the continue button in figure 3. Where there is enough of such item in store, the system displays a page showing the status of Customer's selections (i.e. the basket). Where there is not enough quantity to cover the demand, the system displays an error message.

Managing contents of the Basket

The Basket is a reservoir for items to be purchased. A typical Basket Page of items selected into its Basket is shown in figure 4.

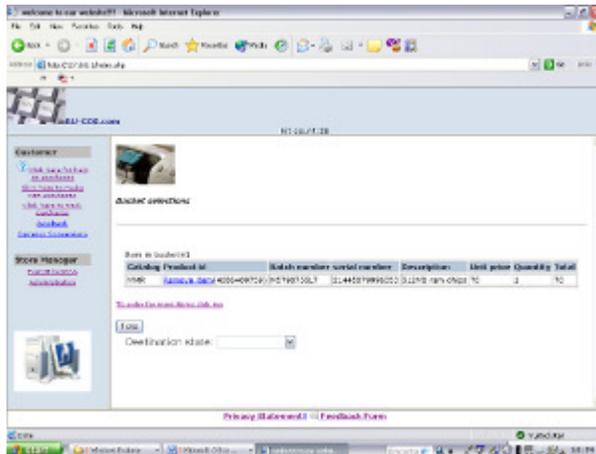


Figure 4: The semi-basket

In order for the customer to continue the process of purchases, the prospective customer must select a destination state, and click the Total button on figure 4, which invokes a page similar to the one in figure 5. Before a customer can proceed, there are 3 main functions available for managing the content of the Basket. These are:

1. The purchase button. Where there are items in the Basket and customer wishes to continue in the process of purchases, this button is clicked.
2. The Empty Basket button. This function helps to return the status of the Basket to a state before the first items selection was made. i.e. the Basket is emptied.
3. The currency convert button. Customers at times wish to convert values from one currency to another before deciding on whether or not they should continue in purchases.

Purchases

The following page is invoked on a click of the purchase button of the Basket page as shown in figure 5.

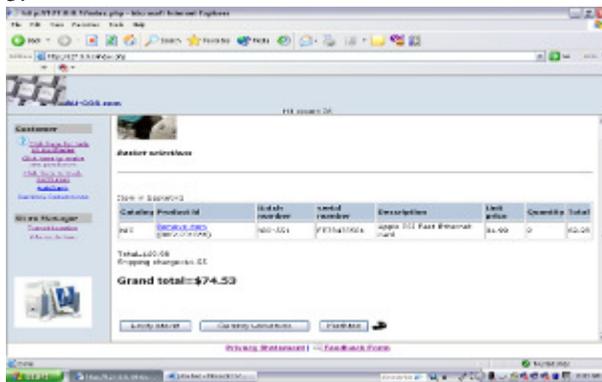


Figure 5: The Final Basket

This section links up with the Value Card providers Database that customers are subscribed to. It is assumed that customers wanting to transact business on this site are subscribed members of the Value card society. This is to say that, purchases are made using the Value Card system.

To request available balance, customers must input their assigned Visa Card number, Pin code and the name of the holder, the way it is shown on bank record and click the Validate button. This action displays associated Customers name and available Balance, as shown in figure 6.

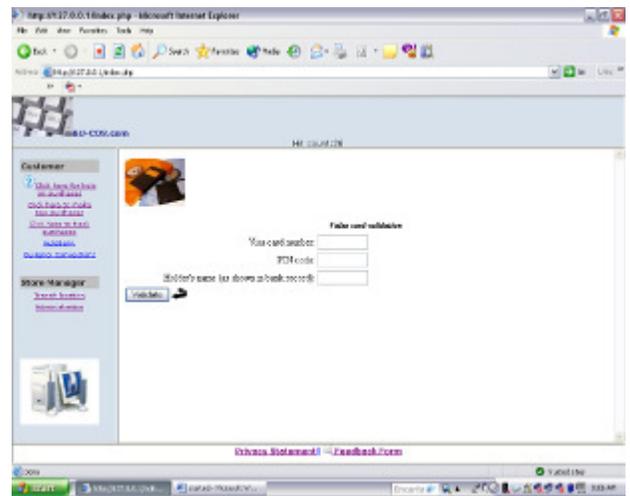


Figure 6: Validation page

The withdrawal amount, holder's name and available balance fields must be validated to ensure that they are not blank. The information is validated against the bank file on clicking the Withdraw button. Insufficient funds for withdrawal results in an error message reading "insufficient funds" else, the following actions are taken;

1. The bank file is debited with the withdrawal amount
2. The stocks file in the database is updated with the quantity of each product purchased.
3. The daily stocks file is updated with records of transactions in the database.
4. The purchase file is updated with information from the following input screen.

Where there is sufficient fund to cover purchase amount, the system automatically advances to the Shipment Information Page.

Shipment Information

The Shipment information Page is the concluding part of customer purchase exercise.

The following are automatically displayed at the top of the customer purchase information page as shown above; Purchase date, Customer's name, List of purchased items, Total purchase value, Track id.

The customer has no control over this section of the page at this stage but the customer is required to input the following information in the space provided.

1. Customer's address
2. E-mail address
3. Phone number
4. Fax number
5. Other information

Two buttons will exist at the end of the customer purchase information page, i.e. the conclude button and the cancel button.

On clicking the conclude button, the following occurs;

1. The purchase file is updated while the customer notes his or her track id which will be used to trace the delivery status of their products and is automatically generated.
2. The value of the location-in-transit field in the purchase file is set to "in stores".
3. An email is automatically sent to the customer's email address.
4. Customers are now set to continue to trace the location of their items as it travels from the seller's country to customers' destination country.
5. The Sellers items manager is set to continue to monitor and change the location of items on transit.

Tracing location of purchased items

Purchase tracking is the process by which customers can query for the present location of their purchases. Customers can do this, using track id. Each customer is assigned a track id during purchase. It is therefore important that customers take note of their track ids as it will be required before purchases can be tracked. The purchase tracking file will contain an input field for track id and a check button as shown in figure 9.

If a customer inputs a valid track id and clicks on the check button, the information about the particular purchase is read from the purchase file in the database and displayed below the check button, the following information.

2. Purchase Date
3. Customer name
4. shipment address
5. E-mail address
6. Phone number

7. Fax number
8. Other information
9. Total purchase, and
10. Location in transit

Perhaps the most important information to the customer at this stage is the location of his goods. He notes this.

As soon as the customer receives his item, he is expected to click on the confirmation button as shown in figure 9. This action marks the purchase record as a historic event.

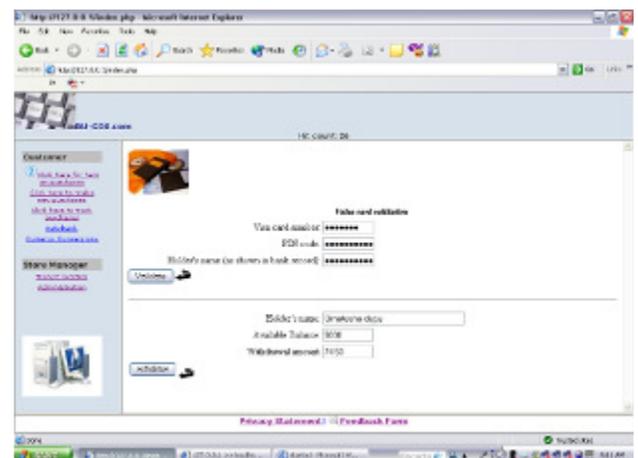


Figure 7: Withdrawal and final validation page

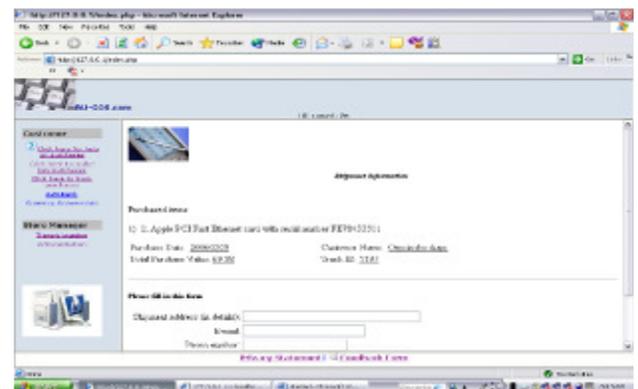


Figure 8: Shipment Information Page

Changing location of purchased items

After purchases have been successfully made, the stores manager will constantly update the location field of the purchase file in the database as orders change location on the way to the customer's address. This update keeps customers informed about the current location of their purchases.

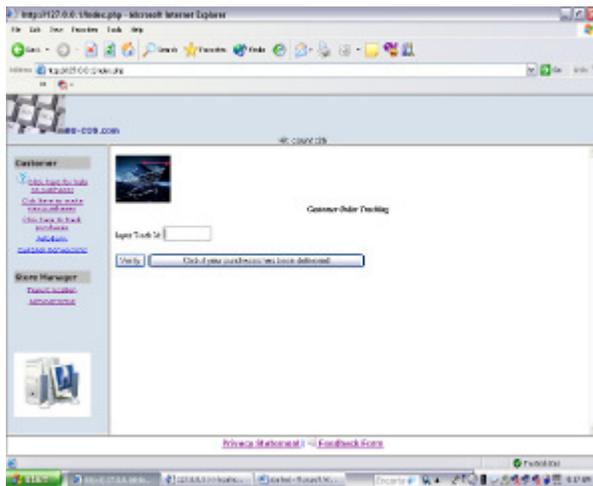


Figure 9: Customer Tracking Page

The stores manager is expected to monitor all purchases through from sales to delivery.

The Transit location link on the left panel of the introductory page invokes the page needed for this exercise. The page is similar to the following:

The stores manager can query for information about any customer using his Track-ID. He input a track-id against the Track-ID field and clicks the Search button.

If input Track-ID is found in the purchase file, corresponding information are displayed. Information displayed are Purchase date, name of customer, shipping address and current transit location.

To change the transit location of purchases to its current location in transit, the manager inputs the current location into the location in transit field and click on the update button.

All current Item purchases (that are yet to be delivered to their shipping addresses) may also be viewed in table formats by clicking on the all items purchase button.

Currency conversions

Conversions between currencies may be carried out on this site:

To invoke the currency conversions page, click on the currency conversion link at the left frame. This invokes a page similar to the following:

Source and destination currencies cannot be the same. Source, destination and amount fields cannot be blank. Validation is carried out on clicking the Go button as depicted in figure 11.

The source and destination currencies are selection fields automatically read from the currency file.

The amount field must be entered by the customer.

The conversion amount is automatically determined

and displayed in the converted amount field on clicking the Go button.

To convert USD 5000 to Naira for example:

Select a source currency USD

Select a destination currency NGN

Input 5000 into the Amount field

Click on the Go button to show the equivalent amount of USD 5000 in Naira.

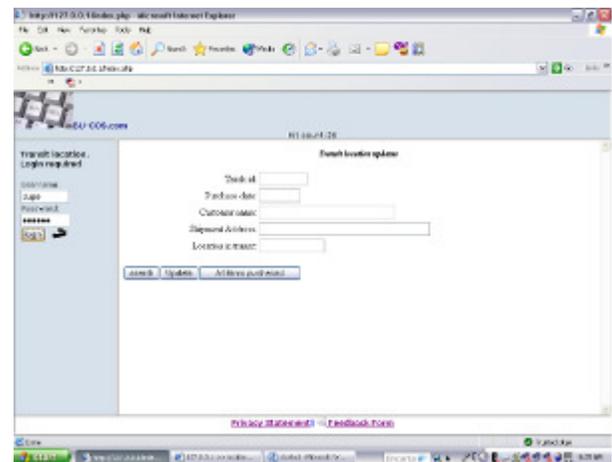


Figure 10: Transit location update page

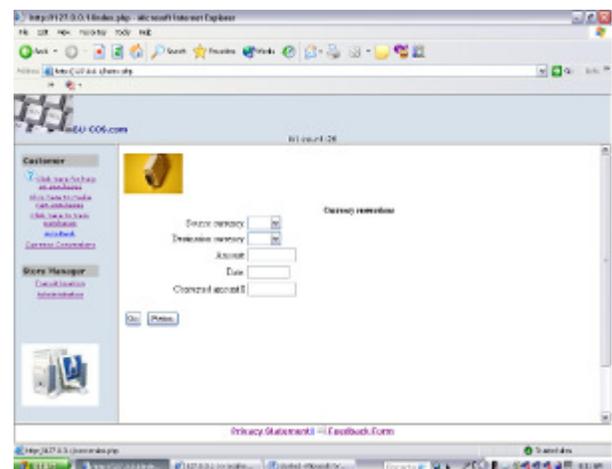


Figure 11: Currency conversion page

CONCLUSION

Electronic commerce, or "e-commerce," is one of the biggest buzzwords in today's business world. In its simplest form, e-commerce just means taking things that your company is already doing in person, through the mail, or over the telephone, and doing those things in a new place--on the Internet. The concept of e-commerce is all about using the Internet to do business better and faster. It is about giving customers controlled access to your computer systems and letting people serve themselves. It is about committing your company to a serious online effort and integrating your Web site with the heart of your business. The Internet's role in business can be compared to that of the telephone. It is a way for people to communicate with each other. It is also a way for a consumer to communicate with a company's computer systems without human intervention. In fact, the Internet is a communication medium like the many others we use in business every day.

The general idea is, if you could reach more customers, service them better, and make more sales while spending less to do it, which would be the formula of success for implementing a B2C e-commerce infrastructure. For the consumer, it is relatively easy to appreciate the importance of e-commerce. Why waste time fighting the very real crowds in supermarkets, when, from the comfort of the home, one can shop on-line at any time in virtual Internet shopping malls, and have the goods delivered home directly.

It may seem special now, but in a few short years it will be just another part of how every company does business. In fact, we're rapidly heading for a time when businesses that aren't on the Internet will be as far out of the mainstream as a business without a telephone number is today.

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