

# Developing Effective Way of Online Shopping

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## Abstract

*E-commerce is process of doing business through computer networks. A person sitting on his chair in front of a computer can access all the facilities of the Internet to buy or sell the products. Unlike traditional commerce that is carried out physically with effort of a person to go & get products, ecommerce has made it easier for human to reduce physical work and to save time. The main advantage of e-commerce over traditional commerce is the user can browse online shops, compare prices and order merchandise sitting at home on their PC.*

*For increasing the use of e-commerce in developing countries the B2B e-commerce is implemented for improving access to global markets for firms in developing countries. For a developing country advancement in the field of e-commerce is essential. The research strategy shows the importance of the e-commerce in developing countries for business applications.*

**Keywords:-** Ecommerce, Existing system, Proposed system, Scope and Functionality, Design And Implementation, DFD, ER-Diagram

## INTRODUCTION

E-commerce is fast gaining ground as an accepted and used business paradigm. More and more business houses are implementing web sites providing functionality for performing commercial transactions over the web. It is reasonable to say that the process of shopping on the web is becoming common place. The objective of this project is to develop a general purpose e-commerce store where any products can be bought from the comfort of home through the Internet. However, for implementation purposes, this paper will deal with an online local portal. The local retail portal is a virtual store on the Internet where customers can browse the catalog and select products of interest. The selected items may be collected in a shopping cart. At checkout time, the items in the shopping cart will be presented as an order. At that time, more information will be needed to complete the transaction. Usually, the customer will be asked to fill or select a billing address, a shipping address, a shipping option, and payment information such as credit card number. And mail notification is sent to the customer as soon as the order is placed. The portal is expanded permanently through new products and services in order to offer a product portfolio corresponding to the market. Private customer and business customers can order the selected products of the shopping portal service online quickly and comfortably. Target groups of customer of the local retail portal are. The customers can have a payment option through credit card and debit card only. In order to use the load writing procedure, the customer registers itself and receives a login for its purchases name. It is Internet application Electronic Commerce (ecommerce) applications support the interaction between different parties participating in a commerce transaction via the network, as well as the management of the data involved in the process.

## PROBLEM DEFINITION & OBJECTIVE

Before developing this application, we assumed that,

- There is a multi-product company that deals in many products into different business domains like Books, Sports Items, Apparel etc.

- Till date, the company had only one outlet through which it was dealing its customers wherein the customers used to come to the outlet / super mart and used to make purchases.
- Gradually, the super mart experienced a very high volume of business and consequently, large number of customers started thronging at the same time which resulted in the inefficiency during product purchases, amount collection, keeping a record of customer purchases etc.
- Since, all the major processes were handled manually; the authorities at super mart realized the problem of revenue-leakage due to improper amount collection. The record of purchases was not kept updated due to which super mart failed to identify their regular / gold customers.
- All such problems gradually resulted in decreased profit margins & goodwill of the super mart which posed as a great hindrance to their expansion.

Hence, the authorities decided to automate or web-enable all the major processes which could help the super mart to add or post the information about the new products being launched or added by them under any category or to inform its customers about the launch of a new product category altogether.

Plus, they also expected that the application should enable its customers to purchase products from any part of the world, irrespective of their geographical locations through the means of electronic shopping so that tomorrow, if the super mart opens its other branches, customers & prospective buyers should be able to purchase products from virtually any branch, at just the click of mouse from their location. This should also enable them to browse through any products of their choice.

The authorities also wanted to keep the record of fresh customers coming to them to purchase items for the first time and they also wanted to keep a detailed report of the purchases done by their customers so that they may retain their good, gold customers in order to increase sales & goodwill.

Keeping all the above points into consideration, we proposed an application that should be helpful to the super mart in successfully accomplishing all its objectives, thereby resulting in the automation, ease & efficiency in handling processes, increase in sales & goodwill.

## ANALYSIS

The analysis model must achieve three primary objectives:

- To describe the requirements of the customer.
- To establish a basis for the creation of a software design.
- To define a set of requirements that can be validated once software is built.

## An Overview

- We studied the whole system & its objectives. Calculated the total time & resources incurred on every function being done manually.
- Bifurcated the complete system into a list of functions & the users who operate on them.
- Further subdivided all the functions into a list or source of requirements/inputs & clearly defined the output/expectation from each function.
- The interaction, communication & dependency of all the functions between each other were carefully analyzed in terms of sequence & information.
- The source & flow of the information was determined & how would it be processed & used was considered.
- Finally, we visualized the complete system with automated functions & compared the total time & resources being incurred to check the feasibility & see whether it is fulfilling all the necessary objectives.

## SCOPE & FUNCTIONALITY

Our application consists of 3 classifications of users namely:

- 1) Administrator
- 2) Registered Users or Shoppers
- 3) Guests

Each user will have its own set of privileges as mentioned below:

### ADMINISTRATOR

The administrator of “Online Shopping” portal will perform following functions:

- **Product Category:** He/she would be able to Add, Modify & Delete new product category. Every product category would be assigned a unique Category ID & Name which will be stored in the database. Each new product that is added on our portal for shopping purposes will correspond to a particular category. Once a product category is added successfully, it could be viewed by the buyers & guest users on the portal’s home page.
- **Products:** Under this feature, the administrator would be able to Add, Modify & Delete products listed under specific categories. Every product has attributes like ID, Thumbnail image, Product description & Price per unit. Every added product will have its details stored in the database. Once a product is added successfully, it could be viewed by the buyers & guest users on the portal’s home page who can see its details & purchase them too through adding them in their shopping cart.
- **Customer Reports:** In this feature, the administrator would be able to fetch a particular customer’s record through his/her unique customer id. The report would consist of purchase details of the customer like Customer id, Name, Date of purchase, Purchase Amount & Payment made through which card like Visa, MasterCard or American Express. This feature would fetch a detailed report of any customer from the database by searching the unique customer id in it. If the customer id is not found, it will inform the administrator about an “Invalid Customer Id” or “No Records Found”.
- **Change Password:** Through this feature, the administrator would be able to change his/her password through entering the old & new passwords. The administrator’s password will be stored in the database & would be cross-checked at the time of login.
- **Logout:** In this feature, we would kill or stop the administrator’s session, reset any variables which are specific to the administrator’s login & commit all the necessary transactions to the database to maintain its consistency & integrity.

### REGISTERED USERS OR SHOPPERS

- **Online Shopping:** The registered users would be able to scroll through & purchase the products online. There would be an “Add to Cart” option in front of every listed product on clicking which, the user would be asked about the quantity or no. of items which he/she intends to purchase of that product. After the user the made the purchase(s), he will make the payment through our online payment simulation window.
- **Online Payment (Simulation):** Through this feature, the user will make the payments of the purchases that he/she made. During online payment, we would ask basic details from the customer like Credit Card no., Expiration date, Card type & Security Code. All the inputted details will be cross-checked from the database where we will store some dummy credit card details along with the balance amount. If the details are successfully crosschecked, the payment will be made and purchase would occur successfully. The billed amount will be deducted from the customer’s account if there is sufficient balance in the customer’s account. If the details are not entered correctly or if he/she has insufficient balance, we will inform the customer regarding same through an error message.
- **Change Password:** Through this feature, the customer would be able to change his/her password through entering the old & new passwords. The customer’s password will be stored in the database & would be cross-checked at the time of login.
- **Forget Password:** Through this option, the customer would be able to recover his/her password in case he has lost it. The password-recovery would be done through asking the security question which the customer entered during his/her first-time registration. If the customer inputs the security answer correctly, we will

display his account password on the screen. Otherwise, appropriate error message mentioning wrong answer will be displayed to the user. All the registration details of the customer will be stored & fetched from the database itself.

- **Logout:** In this feature, we would kill or stop the specific customer's session, reset any variables which are specific to his/her login & commit all the necessary transactions to the database to maintain its consistency & integrity.

## GUEST

The guest would be like any other normal user with one difference i.e. he won't be able to make any purchases unless he registers himself / herself on the portal. This means that a guest user will only be able to scroll through the listed products but will not be able to buy them or more specifically, add them to his / her cart. If he tries to do that, he would be asked about his login id & password. If he is a registered user, he'll enter the details; otherwise, he'll have to "Sign up" or register with us.

**Registration:** The registration process will ask normal details from the user like Name, Contact, Country, State etc. One most important aspect of the registration process would be, the user will enter his/her security question & answer during this phase. The security question & answer would be used during the event of password-recovery for any customer. Once the registration is done successfully, the user would be provided his/her unique login id & password (that will be generated automatically) and all his registration details will be stored in the database. After registration, the guest user will become a registered user or shopper or a customer of the portal and he/she would be able to enjoy all the privileges assigned to same.

## DESIGN

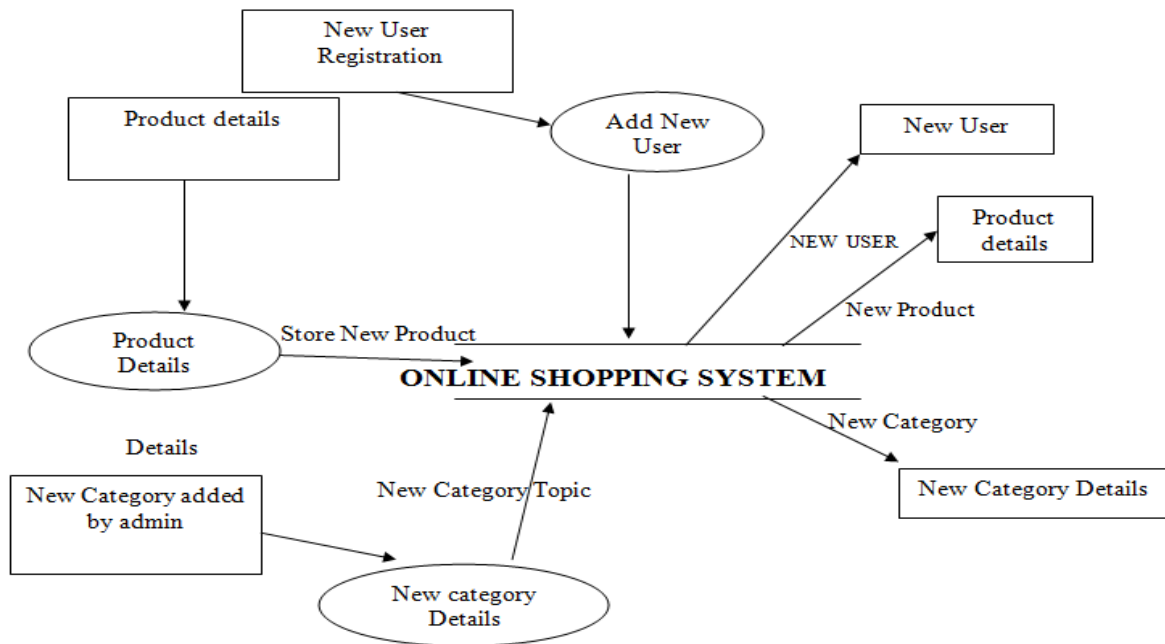
### Architectural Design

- Under architectural design, after defining the whole system into a set of objectives & further subdividing them into functions, we defined the basic dependency & communication between them.
- This means that all the prime functions, their required inputs, expected output/behaviour & interdependency between other functions were clearly defined. The corresponding interfaces for the user for each function were designed to ensure user-friendliness.
- We actually addressed the system-level problems here and made a conscious effort to build a robust design which can result in an effective communication within itself and with the system in terms of raw data or processed information.
- All the primary database design for data storage was also done in this phase.

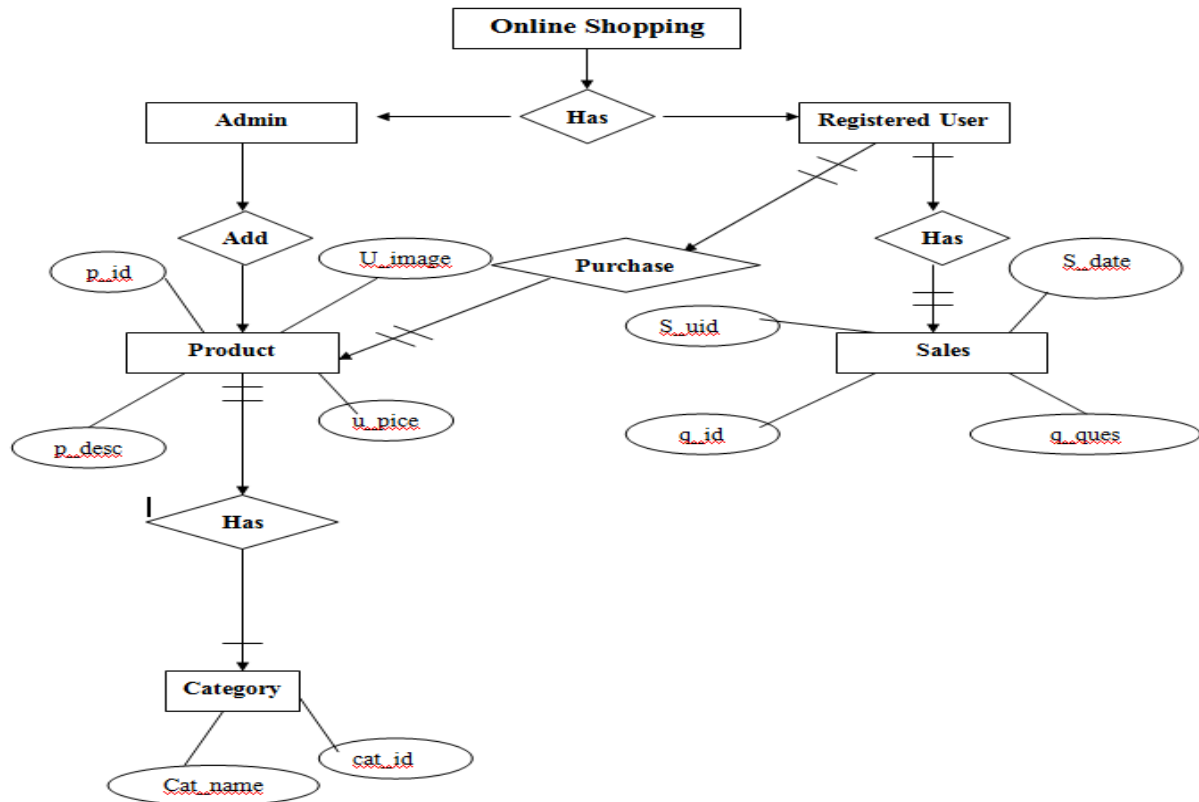
### Detailed Design

- In this phase, we further subdivided every function into a set of modules & defined required inputs & expected behaviour for each of them. All the minute correlations, interdependencies, communication between the modules were clearly defined. The source, usage & processing of data for every module was carefully done. The database design was also normalized at this stage to ensure that the data is efficiently stored & retrieved.
- Detailed design helped us to exactly concretize every problem into inputs & outputs and visualize them in terms of their communication with each other. We focused on interdependency & interoperability between the broken modules here.
- It was this design phase where the factors like user-friendliness ease of use, scalability and self-explanation of interfaces & outputs were actually realized. For all the modules, the placement of controls, passing of information, communication of different interfaces, user messages, data transfer to databases was defined.

**DFD LEVEL 1**



**ER DIAGRAM**



USE CASE DIAGRAM

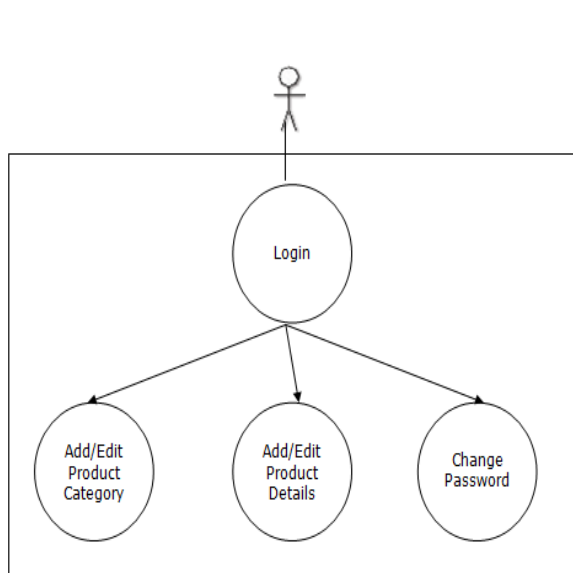


Figure 1 ADMINISTRATOR

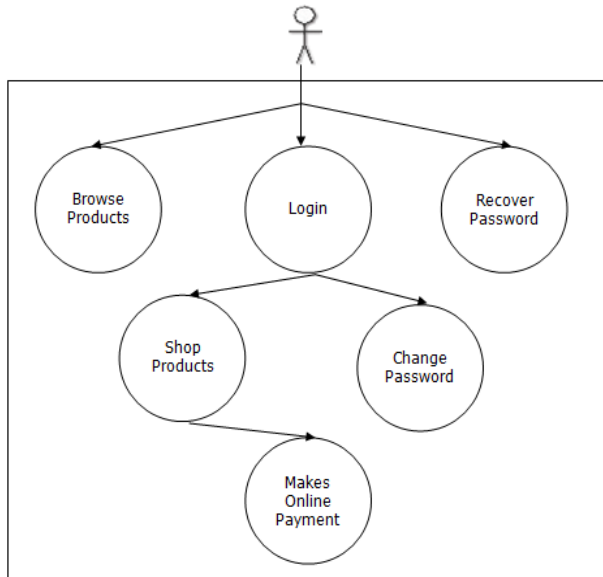


Figure 2 Customer (Registered user)

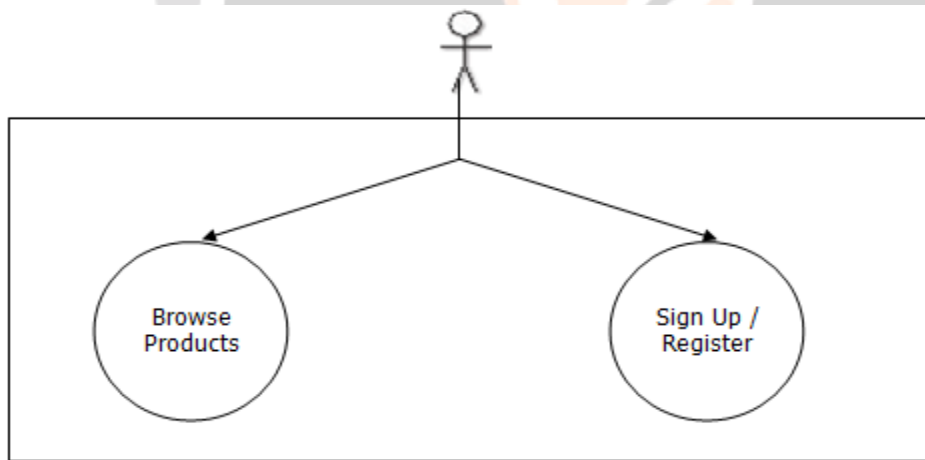
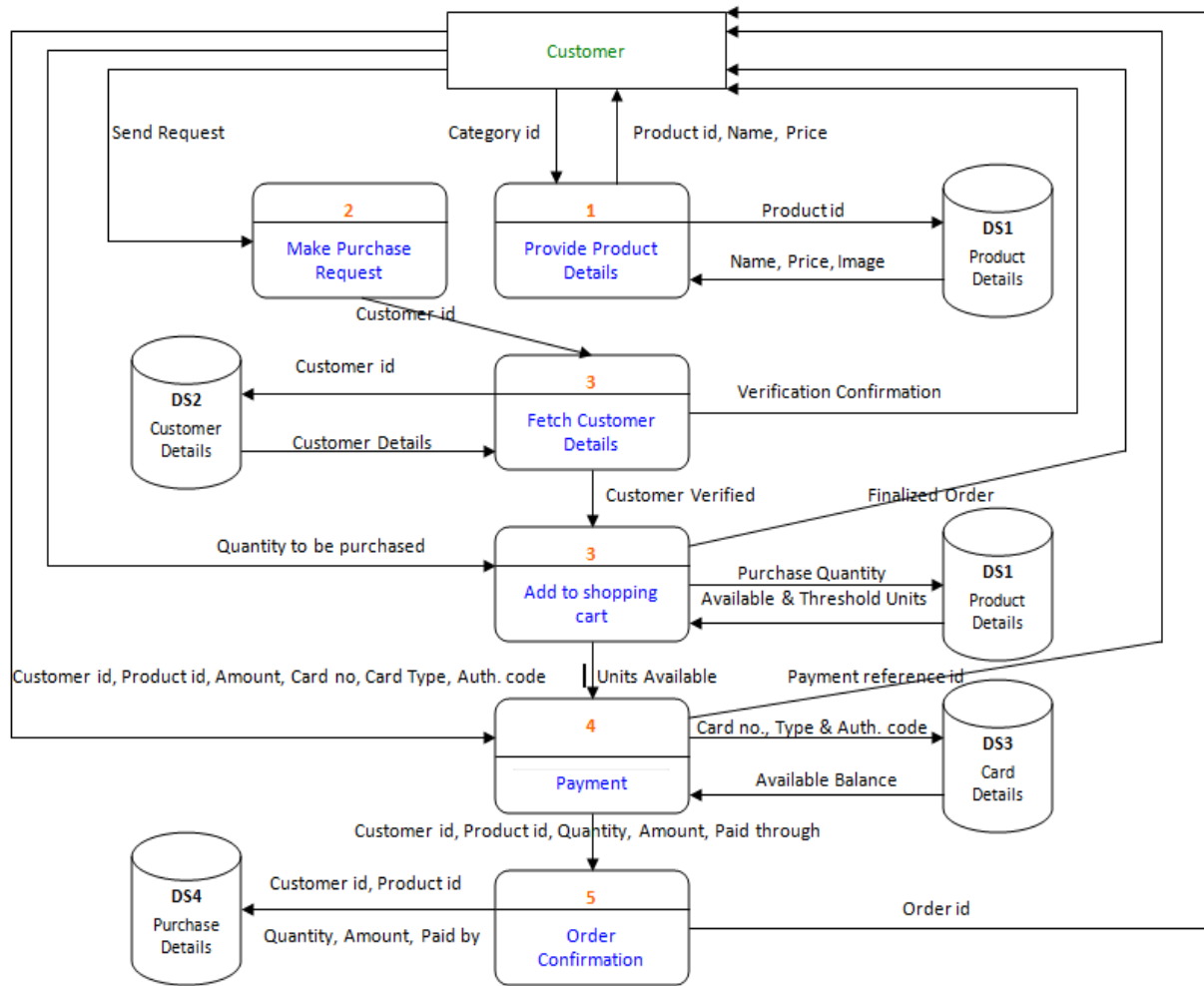


Figure 1 Guest



**DFD LEVEL 2**



**CONCLUSION**

The Internet has become a major resource in modern business, thus electronic shopping has gained significance not only from the entrepreneur’s but also from the customer’s point of view. For the entrepreneur, electronic shopping generates new business opportunities and for the customer, it makes comparative shopping possible. As per a survey, most consumers of online stores are impulsive and usually make a decision to stay on a site within the first few seconds. “Website design is like a shop interior. If the shop looks poor or like hundreds of other shops the customer is most likely to skip to the other site. Hence we have designed the project to provide the user with easy navigation, retrieval of data and necessary feedback as much as possible. In this project, the user is provided with an e-commerce web site that can be used to buy Products online. A good shopping cart design must be accompanied with user-friendly shopping cart application logic. It should be convenient for the customer to view the contents of their cart and to be able to remove or add items to their cart. The shopping cart application described in this project provides a number of features that are designed to make the customer more comfortable. This project helps in understanding the creation of an interactive web page and the technologies used to implement it.

## FUTURE SCOPE OF STUDY

This is a web-based project which is made for remote-shopping or shopping through Internet. As the technology is being advanced the way of life is changing accordance. Now a day's we can place the order for anything from our home. There is no need to go the shop of the things we want. The order can be placed online through Internet. The payment, the confirmation of purchasing; we can do everything we want. Now we can think that how the days have been changed with time. People had to stand in rows to wait there terms to buy a particular thing from a popular shop. But what is happening now a day's; we can extremely surprise that those things can be available on the door-step in few hours .In future we will try to make this website which work so flexible and beneficial for the customer and also try to make smooth service.

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