Introduction

1.1 Introduction to the Project

1.1.1 Why Online Shopping

Online shopping is a process where customers directly buy goods and services over the Internet. These shops come in various forms such as, online shop, e-store, Internet shop, eShop, web store, web shop, online store or virtual store. With the increase of computer usage and Internet access, online shopping is becoming a more popular way of doing shopping. Figure 1.1 and Figure 1.2 indicates this trend and predicts this to grow to a much higher percentage of shopping in the coming years.
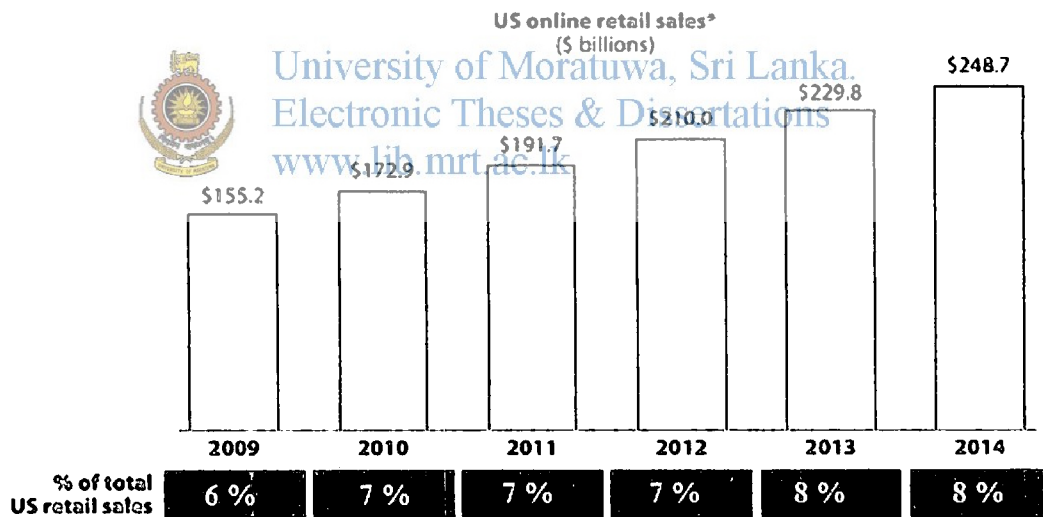
US online retail sales*
($ billions)

$248.7

$229.8

$210.0

$191.7

$172.9

$155.2

	2009	2010	2011	2012	2013	2014
% of total US retail sales	6 %	7 %	7 %	7 %	8 %	8 %

Figure 1.1 - US Online Retail Sales [1]

Estimated Quarterly U.S. Retail E-commerce Sales as a Percent of Total Quarterly Retail Sales:
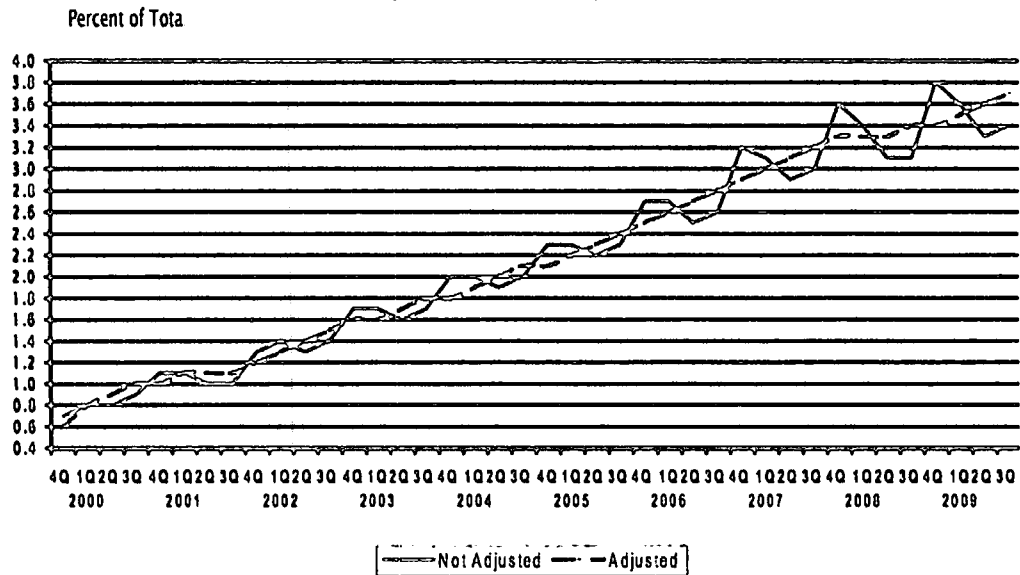**4th Quarter 1999 - 3rd Quarter 2009**

Percent of Total

Figure 1.2 - e-Commerce Retail Sales as a Percent of Total Retail Sales [2]

1.1.2 Why Online Shopping is Gaining Popularity.

Following are some of the main reasons for online shopping to become popular [3].

○ Total shopping convenience:

These shops are available 24 hours a day and 7 days a week which means customers can shop day or night while relaxing at his/ her home.

○ Browse the web instead of driving:

Travelling to various shops at various places is a costly thing and time consuming. With online shopping, customers can sit at their homes and visit any number of shops, even some located in other countries with ease.

○ Price comparisons:

Online shops do not require buildings with lots of facilities and other customer attractions which amount for huge sums. Since, with online shopping those expenses do not exist, companies can sell their goods at a much lower price than normal shops.

2

o   Unlimited selection:

Online shops usually provide much more selection of items than a normal shop. They could even sell some items which they do not have in stock.

o   No hurry:

Unless the website is down there is no close time for online shops, and customers can take any amount of time to do their shopping.

o   Information and reviews:

Some online shops provide facilities to rate or add comments about the goods they bought and this feature will be helpful to new customers to make decision about purchasing goods and services. This an experience which traditional shops never provide to their customers.

o   Collectible and hard to find items:

Online shopping is helpful to find collectibles and hard to find items, due to the vast range of selection for goods online shops provide.

Figure 1.3 illustrates the main reasons why shoppers are attracted to online shopping and their percentages.

24/7 access	83
Can find what you want more quickly / saves time / quick and easy	80
Can shop in comfort / at home	78
Wider choice / can compare prices	74
Prices are lower	72
Don't have to carry / transport items	68
Can avoid crowds / don't have to deal with people	64
More product information to help make decisions	61
Special online offer	53
Can buy products not available in the UK	46
Free delivery of goods	45
Items you want only available online	38
More choice of second-hand items	35

Figure 1.3 - Shoppers' Main Reasons for Buying Online [4]

1.1.3 Marketing Strategies Used to Provide Information for Online Customers

All forms of online systems have to make one important thing. That is making the customer buy their product without physically contacting them. To achieve this, websites must present proper information to customers and most web sites use various methods such as, graphics, animations, and special features like shopping charts, providing statistics and security. [5]

1.1.4 Shortcomings of Providing Proper Information to Customers

One of the most important aspects of online shopping is to provide correct information easily to the customer. To achieve this some websites allocate large areas of space to display information or make them available through a large set of links. This results in the customer going through a large amount of information which is not relevant to him/her to find some specific information. This can easily result in the customer leaving such websites. Additionally, they cause problems such as, maintaining a large web site, band-width problems, etc.

Another area of focus to winning customers is to provide satisfactory customer support as soon as inquiries are made. The majority of web sites provide facilities to send e-mails whilst some have support staff dedicated to the customer inquiries.

The drawback with the e-mail option is that it takes a lotof time to reply even for a small information request. Further, having a large number of customer support staff working 24 hours a day, 7 days a week comes with a high price tag. In addition, those resources could be idle for most of time, which results in huge losses to the companies.

1.1.5 Solution

Therefore, the best way to provide information through a small web site will be to have a chat window (chat bot) attached to it. This chat bot should have facilities similar to ordinary chat systems with an automated system replacing the operator. The automated system should identify the customer queries by matching key words and provide answers through a predefined set of answers with the help of some stored knowledge.

The following additional facilities can increase the efficiency of the chat bot:

Providing a facility in the chat bot with the ability to forward customer queries to a human operator if it fails to recognize the query will increase the success rates of the system.

○ Having a good knowledge about what the customers wants, what sort of information they like to have, their buying patterns, and market trends will be helpful to have a successful selling mechanism. This sort of information is normally collected by various research groups' through surveys and sold to vendors. If the system has a facility to capture customer queries against the time of the queries, will be an added advantage.

5

1.2 Aim

The aim of this project is to design a tool to provide support/ information to online customers for their requests and helping to vendors in decision making and to achieve higher customer satisfaction.

1.3 Objectives

1. This system will help reduce the amount of data displayed on web pages.
2. Provides an easy way for customers to get the required information quickly without going through various links.
3. Provide vendors with details about customer needs, requirements, customer views about the items on the site to sell, and market trends.
4. The system will generate requests to customer support staff when required.
5. Ability to function 24 hours and 7 days a week ideally suited to websites dealing global customers.
6. Reduce the requirement of keeping a large number of customer support staff.

1.4 Solution

The solution proposed is an automated chat system which can handle customer queries up to a certain level, removing customer care officer's work load.

The main feature of the system is the chat window, which is used by the customer to submit queries and to get answers. The system will generate the answers and display it in the chat window. When required support staff can answer customer queries.

In the back-end of the system, there is an engine to analyse customer queries. This should decide whether the engine can answer the query. If it its answerable it will generate an answer using a pre-defined set of answers or using available data. If it fails to generate an answer it will direct the question to an operator.

To support the engine there is a database. It stores a pre-defined set of answers to support the engine. Further, the database should store other relevant information (prices, types of goods, etc...) to support the engine. Moreover, it should store the information (customer queries, etc...) for forecasting purposes.

The main technologies required for this project are Java as the development language, MySQL as the database and eclipse as the development environment. All of the above technologies are open source technologies and therefore, freely available to use.

1.5 Expected Outcome

The expected outcome of the project is to produce a tool which will assist online shopping reducing the workload, time and cost for assigning and maintaining a large force of operators.

1.6 Summary

In this chapter we have discussed how and why online shopping is popular and why we need a new system to provide information to customers.