

Workbook

E-Commerce (SE-307)



Name

Roll No

Batch

Discipline

Semester / Term

Department of Computer Science & Information Technology
NED University of Engineering & Technology

Workbook

E-Commerce (SE-307)

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SE-307: E-Commerce

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Note: The following software is used: MS Visual Studio, SQL Server.

Lab Session 01

OBJECT

Analyzing your online customer and competition

THEORY

The necessity of your E -business may stem from the customers who want you to have a Web presence or from the competitors who do their businesses online. In any case, you need to conduct a market/customer/competitor analysis to determine your target online customers and competitors.

1. Analyzing Your Online Customers

Segmenting Internet customers help you to decide where unmet online customer needs reside and who should be your target customers. Also, understanding online customer decision processes may help you generate new ideas about how to meet your customers' needs.

www.forrester.com – Technographics: segmenting consumers according to motivation, desire, and ability to invest in technology, i.e., fast forward, new age nurturer, mouse potatoes, techno-strivers, hand shakers

Other resources: www.future.sri.com , www.ad-up.com , www.geocities.yahoo.com , www.thirdage.com , www.snowball.com , www.demographic.com , www.marketingtools.com , www.emarketer.com

Customers are online because of:

- Convenience
- Costs
- Choice
- Customization
- Interactive Communication
- Control

2. Analyzing Your Online Competitors

- Review competitor's Web sites
- Analyze related news groups
- Examine publicly available financial documents
- Use an information delivery service such as Info Wizard, My Yahoo or Point Cast
- Solicit opinions in chat rooms

EXERCISE

1. Who will be your online target customers? (Explain how you would segment your potential online customers and provide your target customers' profile.)

2. Describe your online target customers' needs and wants and their online buying behavior.

3. Is your current product or service a good match with your target customers' needs? Describe how it matches.

6. How do you want to differentiate your products and services on the Web from your competitors?
(Examples include: distinctive products/services/information, a memorable name, a distinctive design for the Web site, and a clear focus)

Lab Session 02

(A)

OBJECT

Steps to develop a good domain

THEORY

Steps to develop a good domain name

Step 1: Develop a clear, simple statement describing your business.

Step 2: List all the words that relate to your business idea.

Step 3: Brainstorm business name word combinations.

- Short
- Memorable
- Not easily confused with others
- Hard to misspell
- Relates to your core business
- Sounds solid to your target audience

Step 4: Check domain name availability.

Step 5: Check trademark availability.

Step 6: Purchase relevant domain name(s).

Step 7: Apply for a trademark.

Types of Domain name

- Product Specific
- Company Name Specific
- Region Specific

Web resources for Internet domain names

www.networksolutions.com, www.GreatDomains.com, www.register.com, www.000domains.com

EXERCISE

1. Describe your product(s) or service(s) to be offered online.

2. What is the domain name for your E -business?

Lab Session 02

(B)

OBJECT

Determine type of your website, major revenue sources and goals.

THEORY

1. Determine Type of Web site

“How big of an E-business commitment does your firm want to make?”

The type of your Web site should be determined by goals, budget of your Website, and nature of your business.

- Option 1: You can simply participate in Internet forums (discussion groups located on commercial online services), news group s (Internet version of forums), BBS (Bulletin board systems are specialized online services that center on a specific topic or group) or web communities.
- Option 2: You can create an electronic presence online by buying a space on a commercial online service
- Option 3: You can have your own Web site for informational purposes such as a corporate Web site
- Option 4: You can build an E-commerce site which allows you to sell online

2. Determine major revenue sources for your E -business. (You may generate multiple revenue streams.)

- You may generate revenues by selling advertising to other firms. The product is ad space on a Web site e.g., all the major portals such as AOL, Yahoo, MSN, Lycos, Excite, Go.
- Direct selling: You may manufacture products and sell directly to the consumer or business customer
- Intermediaries: You may be a broker, agent, or an E-tailier

3. Goals of Website Development

Direct sales, advertising income, customer support, public relations (image building)

EXERCISE

1. What is the goal of your Web site? What do you want to accomplish?

2. What will be the major source of your E-business income (e.g., advertising, referral, or sales income)?

3. What type of Web site do you want to create?

Lab Session 03 (A)

OBJECT

How to build website (internally / outsourcing)

THEORY

Once you determine the type of your Web site, next step is to decide on how to build your Web site. You can build your Web site internally using:

- Online Web site development sites: www.geocities.com
- Offline software available in the market: Microsoft Frontpage, Macromedia Dreamweaver

Or you can also outsource your site development by:

- Hiring a Web designer: See the resource guide for the list of local Web designer
- Buying a package service form ISP, which includes access, hosting Web design, and maintenance services.

Advantages and Disadvantages of In-house Development

Advantages

- Money savings
- Knowledge increase stays with the company
- Greater control over the final product
- Ease in updating

Disadvantages

- Can't spare key people to learn HTML to level of excellence needed.
- Don't have in-house graphics expertise or tools.
- Can't spare key people to develop Internet marketing strategy without outside help.

Web Resources

<http://budgetse.com>: provides pointer to a variety of Web development resources such as www.primenet.com, www.infotique.lm.com, www.pagefolio.com, www.consulnet.com, www.webdeveloper.com

EXERCISE

1. Evaluate online development sites/offline development software programs that you are interested in.
2. Examine professional outside Web site designers.
3. Determine Web development tools for your E-Commerce site.

Lab Session 03 (B)

OBJECT

Choosing an Internet Service Provider

THEORY

To connect your Website to the Internet, you have to choose an Internet service provider (Web hosting).

When you are choosing a provider, you should look for:

- Network Utilization
- FTP Access
- Traffic Reports
- Pricing Issues
- Local Ownership vs. Global Ownership
- Customer/Technical Support

ISPs provide services such as Web page design, domain name registration, email account, site management, online and toll free tech support, and free business banner exchange service for a low set-up fee and a monthly fee.

EXERCISE:

1. ISP Evaluation Worksheet

Name of ISP #1:

Web URL:

E-mail address: Years

in Business: Features

and services:

Customer-service:

Responsiveness:

Pricing:

Network utilization:

(Downtime & outages

Connection speed)

Technical support:

Storage/data transfer Capability

(FTP access)

Customer-staff ratio:

Local vs. global ownership:

2. ISP Cost Worksheet

Name of ISP #1:

Contact person:

Telephone number:

E-mail address:

Account setup or

Activation fee:

Monthly service plan / a. Dial-up access

Usage cost estimate: b. High-speed access

Software: a. Bundled Internet startup package

Included/optional/NA b. Browser upgrade

(check one)

Upgrades in access: a. Dedicated/leased line

b. Toll-free line usage

c. Wireless access

Training : a. Classes

Included/optional/NA b. Manuals

(check one)

Web access: a. Basic hosting services

Included/optional/NA b. Premium hosting services

(check one)

Telephone company a. Installation of additional telephone lines

service: b. Upgrade to better line

Not needed/needed

(check one)

Lab Session 04

(A)

OBJECT

Determining graphic elements and layout of website

THEORY

Layout/Color/Theme

- What look are you going for?
- How do you want visitors to feel or to perceive your company or product when they visit your site?

Images/Graphics

- Images: photos, clipart, commissioned work, animated art, few or many?, Digicam?
- Logo: existing into electronic form or design from scratch?

Pages

- Main page, company info page, products page, order page, guest book, etc.
- Make your site information rich
 - Contact Info (be sure to include phone numbers, mailing address, email links, etc)
 - FAQ's (frequently asked questions)
 - Company History
 - Information to support the use of your products

EXERCISE:

1. Describe layout of your Web site.

2. What graphic elements do you want for your Web site?

(Organization's logo, trademarks, and branding themes / Navigation elements / Special interest items)

4. Describe the content to be included in your Web site

Lab Session 04

(B)

OBJECT

Learning Online Advertisement

THEORY

All paid-for space on a Web site or in an e-mail is considered advertising. Today many website owners have switched to selling advertising to cover costs because the typical Internet user refuses to pay for information.

- Banners and buttons
 - Banners and buttons (pop-up window) occupy designated space for rent on Web pages
 - Evolution of banners: click-through, animated GIF, interactive banner
 - Web banners help build brand awareness
 - Tickers are banners that move across the screen
- Sponsorships integrate editorial content and advertising
- Interstitials (roadblocks) are Java-based ads that appear while the publisher's content is loading
- Using online e-mail or sign-on Web casting services such as PointCast and Ifusion, which automatically download customized information to recipients

Banner advertising is one of the simplest ways of advertising on the Web. The Following are a few basic strategies for banner advertising:

- Keep banners small- a banner should never slow down the speed of the content related page
- Invest in design- an ugly banner will not be successful. Use a concise design to display the message
- Avoid complex messages- a short compelling message is best
- Make it readable- display the message in such a way that it is readable
- Avoid complex animations -animations are cute, but they take too much time to download
- Make sure the link works- the best banner ad is useless if the link leads to nowhere
- When you exchange banners with other Web sites, don't have more than two banners on each page. Review banner exchange services like www.linkbuddies.com

There are many specialists who offer online advertising and search engine promotion services to eBusiness owners.

Web resources for online Ads service:

www.flycast.com: allows its customers to monitor the click through rates of their banner ads in real time
www.webtrack.com, www.sisoftware.com: Internet advertising rates directory
www.coder.com: the banner generator
www.clickthrough.com: online full service advertising agencies that help business clients find appropriate sites for their banner advertisement
www.netratings.com: provides statistics on top banner ads on line
www.linkexchange.com reports click-through statistics to its members
www.banner-net.com: Internet banner network
www.cybersitter.com, www.intermute.com - ad filtering

EXERCISE:

1. What do you want to advertise online? (goals of your online advertising)
2. Whom do you want to reach with your online advertising? (target audience)
3. Which of the online advertising activities are you considering? State how you will differentiate your products and services from those of your competitors. (advertising tools)
4. Design your advertisement using features and benefits. If you are using an outside agency, select an agency and a site to sponsor.

Lab Session 05

OBJECT

Getting Familiar with new Visual Studio 2010 IDE for Ecommerce Web application Development.

TASK

In this task, you will create a new Web Application using the project template provided with ASP.NET 4 Web Forms.

1. Open **Microsoft Visual Studio 2010**. Click **Start | All Programs | Microsoft Visual Studio 2010 | Microsoft Visual Studio 2010**.
2. From the **File** menu, select **New | Project**.
3. In the *New Project* dialog, select the **ASP.NET Web Application** template, located under the **Web** templates.
4. Type **NewWebApplicationTemplate** as **Name** and set its location to **Ex01-NewTemplates\Begin** (Choosing the folder that matches the language of your preference) inside the **Source** folder of this lab. Make sure that **Create directory for the solution** is checked, and click **OK** to create the project.

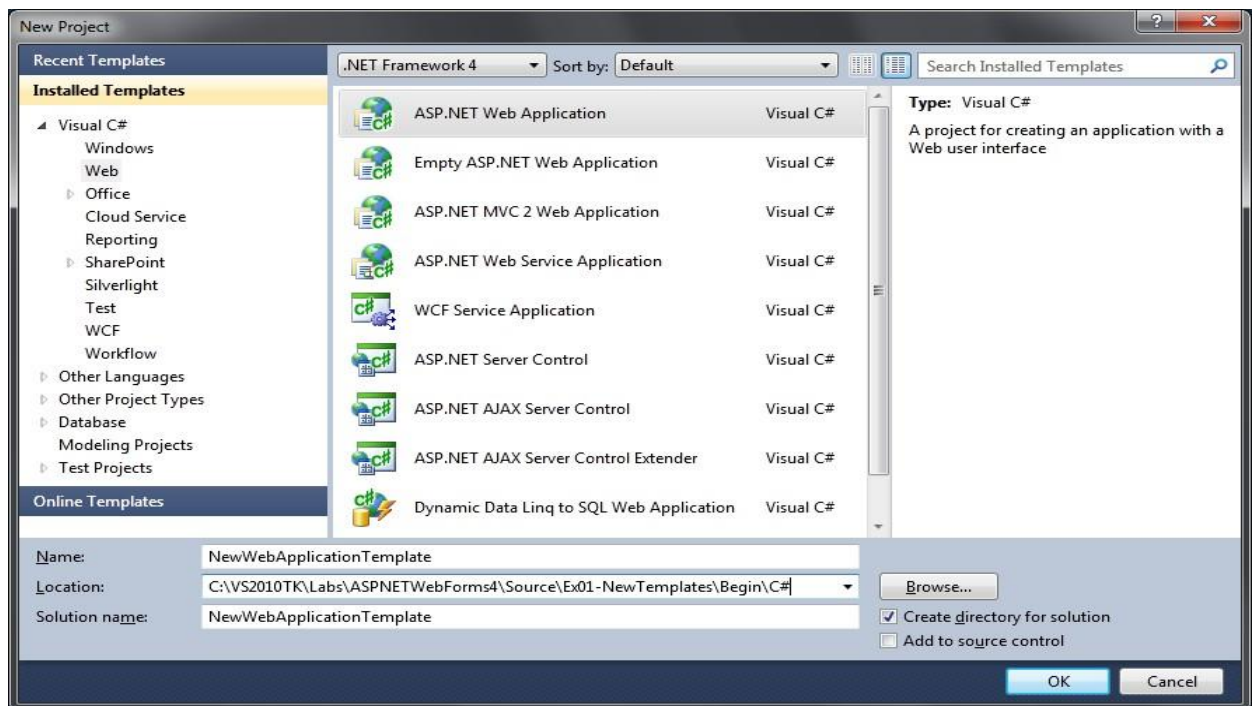


Figure 1
Creating a Web Application using the new templates(C#)

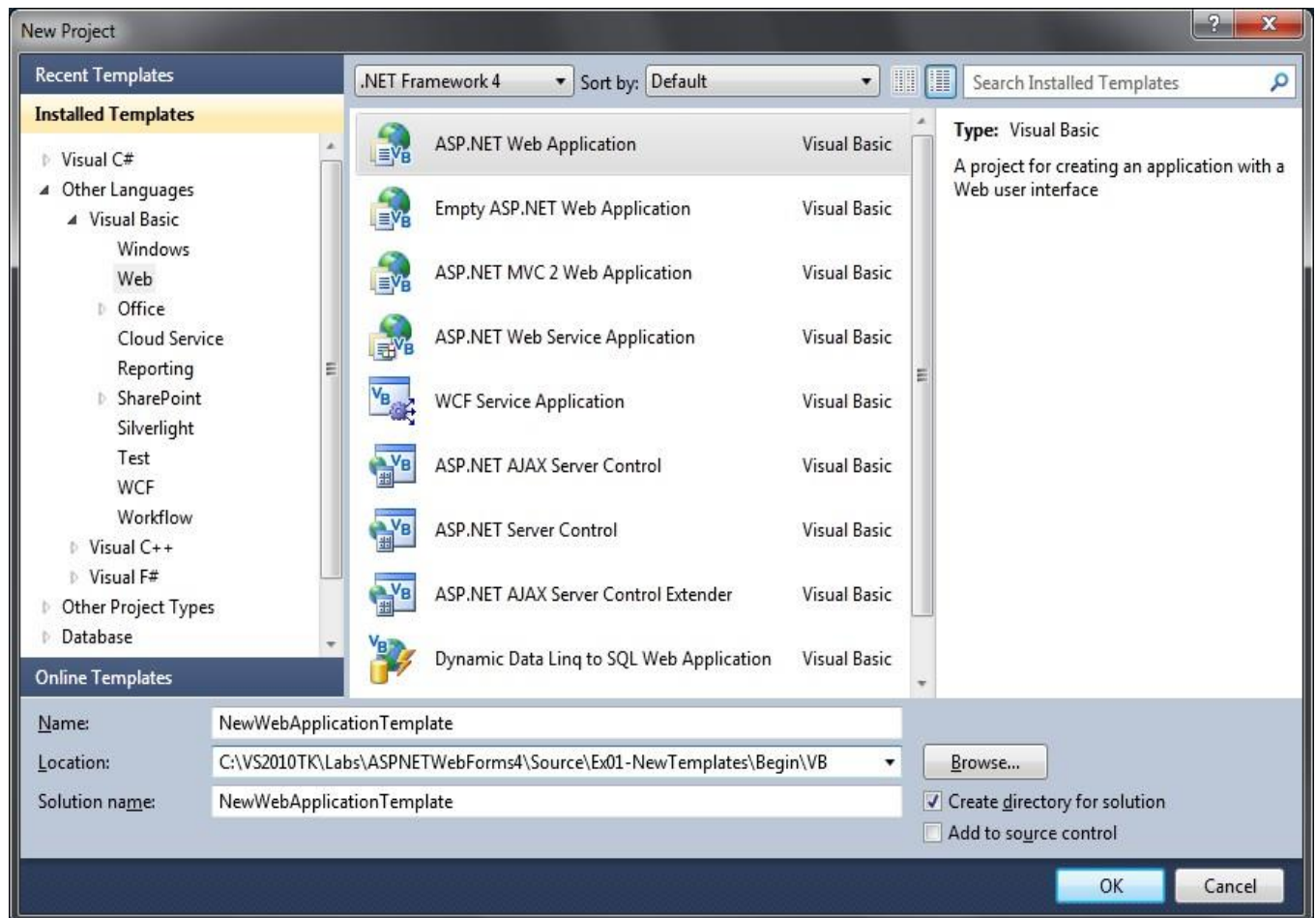


Figure 2

Creating a Web Application using the new templates(VB)

Your solution should look like the following:

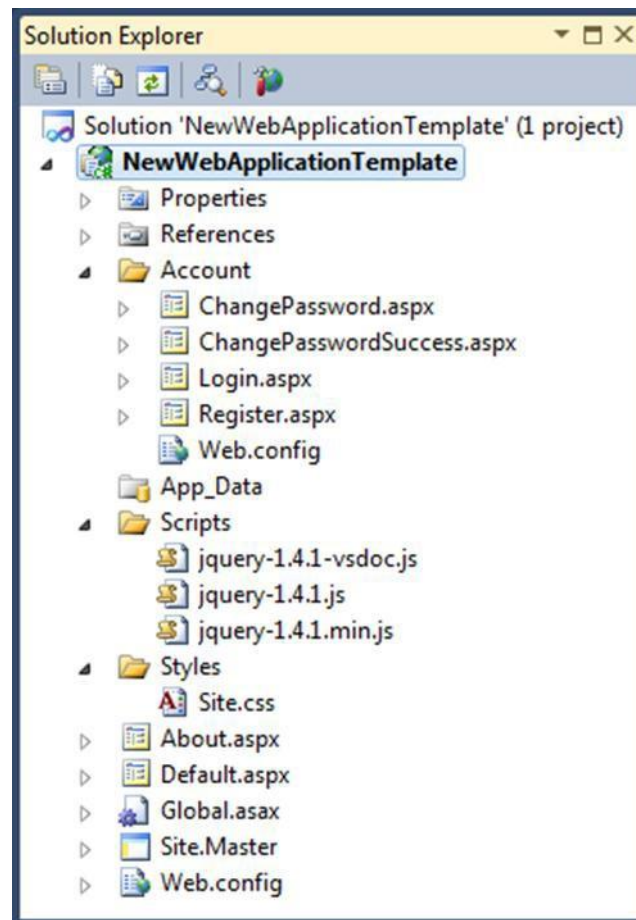


Figure 3
Web Application created using the new Project Template (C#)

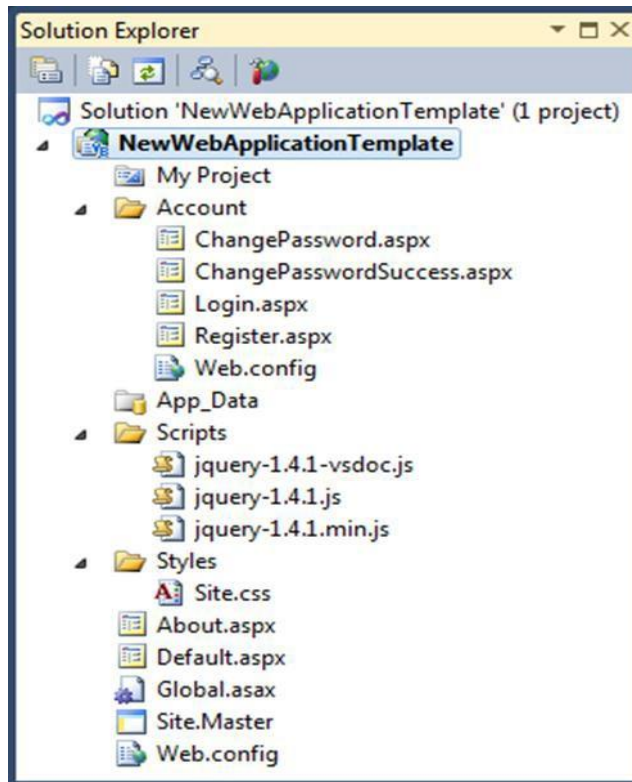


Figure 3

Web Application created using the new Project Template (VB)

You can easily identify the new features mentioned in the introduction by inspecting the project structure:

- **Basic Membership Functionality:** All the security functionality is implemented inside the Account folder of the project.
- **Default Master Page:** The provided master page called **Site.Master** can be found at the root of the Web Application.
- **Default CSS file:** A Styles folder with a **Site.css** file inside is automatically created by the template. This is where the styles for the whole site are defined.
- **Minified Web.config:** Opening the **Web.config** file at the root of the Web Application will show a really simple and clean configuration file.

jQuery Integration: jQuery JavaScript library files are located inside the new **Scripts** folder.

Lab Session 06

(A)

OBJECT

Learning how to describe online direct marketing strategies

THEORY

Direct marketing is direct communication with your customers through non-personal media such as e-mail. Sending e-mails to potential and current customer (e-mail marketing) is a good way of building 'customer data base'.

You can promote your online business by participating in the discussion group such as LISTSERV or newsgroup. A LISTSERV is an e-mail discussion group with regular subscribers. A bulletin board or newsgroup is an area where users can post e-mail messages on selected topics for other users to read. LISTSERV pushes content to subscribed users, whereas the bulletin board requires users to visit the page and pull content. The benefits of participating in the discussion groups are twofold: you can be known as an expert in your business and receive traffic to your Web site using signature file.

In the signature file, you should include the sender's name, contact information (usually e-mail), a short hook to get the reader to visit your Web site, link to your web site, and a dividing line to separate the signature file from the rest of the message.

Another way of promoting your online business via e-mail is to send your messages to your potential customers via e-mail lists, which can be purchased from list brokers. These firms do not usually hand over the list but will send a company's e-mail message to massive distribution lists. You should search for lists that are guaranteed to be 100% opt-in. Opt-in means that users have voluntarily agreed to receive commercial e-mail about topics that might be of interest to them. Opt-in lists can generate response rates of up to 25% compared to 1% click-through rates on banner ads. E-mail should be sent in an entertaining, educational, or interesting manner.

Fortunately, there is now a whole new breed of Web-based email list management tools available for example eGroups, Topica, Listbot, Sparklist and Oaknet. However, these new tools have vastly varying capabilities, and pricing and choice can be a difficult one. It is very important to choose correctly the most appropriate system for your needs, for although it is usually possible to transfer your mailing list from one service to another, it can often be quite difficult, and you may lose a significant number of subscribers in the process.

Other Web resources for direct marketing:

www.netcreation.com: e-mail list management

www.netcreations.com: offers direct e-mail only to interested recipients

EXERCISE:

Describe your online direct marketing strategies. Do you have 'online customer database' which includes e-mail address? How often do you communicate with your potential/current customers via e-mail?

Lab Session 06 (B)

OBJECT

Learning promotional activities for E-Business

THEORY

Sales promotions are popular banner ad content. One huge benefit of online promotion is its ability to gather names for your e-mail database. Marketers report three to five times higher response rates with online promotions than with direct mail. Coupons, sampling, bargains, special sales, financial incentives, and contests/sweepstakes are widely used promotional tools on the Internet.

www.coolsavings.com, www.valuepage.com: top two Web sites offering online coupons.

In order to attract customers to your Web site, you should:

- Register your site to search engines
- Improve your site's ranking on the search engine's list

Search engines robotically spider or index your site: Alta Vista, Excite, HotBot, Lycos, Infoseek, WebCrawler, Goto.com and Northern Light. On the other hand, directories are created by humans. Sites must be submitted, evaluated, and if selected, assigned to an appropriate category or categories. Examples include yahoo and excite.

Additions of meta-tags including keywords associated with the contents of the Web page enhance the chances of a Web page being identified by a search engine. For best results, you should develop different versions of each doorway page, each optimized for a particular search engine. There are constantly evolving strategies associated with finding a higher order display position with the most popular search engines

Promoting a Web site to the search engines can be automated by services such as www.did-it.com. It studies how the search engines rank Web sites and then optimizes their clients' Web sites to achieve a higher ranking

Search Engine Positioning Services:

www.all4one.com, www.jimtools.com, www.affinisoft.com, www.webposition.com, www.searchpositioning.com, www.greenflash.com, <http://submit.linkexchange.com>

EXERCISE:

1. Describe any promotional activities for your e-Business.
2. List search engines and commercial online services that you want to register your Web site. Describe your keyword strategies for search engines.
3. If you are using an outside service, list names of search engine positioning services you want to evaluate. Select one best fit to your promotional goals and budget.

Lab Session 07

OBJECT

Understanding public relation strategies for e-business

THEORY

What do people offer on the Web site to build public relations?

- Content sponsorship: most free online content that is meant to inform, persuade, or entertain is public relations.
- Brochureware: is used to describe sites that inform customers about products or services without providing interactive features.
- Interactive features such as games and electronic post cards can be used to entertain.
- Community building: online events, chat rooms and discussion groups can be used to build community.
- The public knows there is no filtering process in place, which means that your message may have less credibility than traditional editorial coverage.

Web resources for online public relations:

A guide for press relations: www.netpress.org

Media directory: www.webcom.com, www.baconsinfo.com, www.burrelles.com

Press clippings: www.lucepress.com, www.mediamap.com, www.pressaccess.com

News distribution: www.businesswire.com, www.clarinet.com, www.gina.com, www.prnewswire.com

Newsletter writing and distribution: www.imakenews.com, www.infoscavenger.com

EXERCISE:

Describe public relations strategies for your e-Business. How do you want to be perceived by your customers? How these activities will help you building the image you want?

Lab Session 08

OBJECT

Learning types and tools of customer service

THEORY

Customer service is a series of activities designed to enhance the level of customer satisfaction.

Types of customer service functions include: answering customer inquiries, providing search and comparison capabilities, providing technical and other information, letting customers track accounts or order status, allowing customers to customize and order online.

Tools of customer service include: personalized web pages, FAQs, a chat room, e-mail and automated response, help desk and call centers.

EXERCISE:

What kinds of customer service do you have currently? Describe how your Web site will enhance your customer service activities.

Lab Session 09

OBJECT

Understanding performance measurement

THEORY

Performance Measurement With your eBusiness, you may want to measure your performance hourly, incorporate feedback daily and reallocate marketing resources weekly for best results.

Review impact of e-mail campaigns and alter the offer if returns are not being met

Review performance vs. objectives and demand immediate changes when targets are not met

Reallocate marketing dollars if returns are not being met

To evaluate your eMarketing performance quantitatively, you need to measure:

- Traffic of your Web site
 - For example, [www.mediametrix](http://www.mediametrix.com) provides traffic report by generating
 - Growth in monthly unique visitors
 - Growth in days per visitor/month
 - Growth in depth of visit (unique pages/month)
 - You may install a software program that measure Web traffic
 - Or you may hire an outside agency to design a customer package that meets your evaluation needs.
- Site ranking vs. competitors
- Financial results such as revenue and profitability
- Press Coverage

You should also include some qualitative factors such as:

- Customer e-mail and telephone calls
- Customer suggestions
- Number of complaints
- Customer profitability
- Vendor feedback on site design/easy of navigation

EXERCISE:

Rate each option for its relevance to your current needs and determine how you are going to measure your online performance.

Lab Session 10

(A)

OBJECT

Building E-Store

THEORY

How to build your e -store will depend on:

- The nature of your business
- How sophisticate you want your Web site to be
- The availability of relevant skills within your organization.
- Your budget for eBusiness

The heart of any Web store is the software that it runs on. There are a number of free or inexpensive storefront creation software packages available, usually hosted by the vendor or a partner ISP. These products typically provide wizards that walk you through the process of setting up a Web store and then generate the site automatically.

When choosing an E-commerce solution (E-store),you should examine three basic areas:

- a. How easy the store is to set up,
- b. How easy it is to process orders through it
- c. How easy it is to administer on a day-to day basis.

- a. Set up

A storeowner with no HTML or CGI experience should look for software that creates a complete store via wizards and templates. Regardless of technical skill levels, there are several features that you should look for. Those are:

- The ability to import product data from a database file
- The use of cookies to track visitors in a store
- The specification of sales taxes and shipping charges
- The range of advanced features and services that are provided such as domain name registration, automatic search engine submission, auto responders and chat rooms

- b. Order Processing

The first two order processing features to check for are:

- The availability of a virtual shopping cart
- Ability to transfer data securely using SSL or SET

It is also important to select a solution that automates as much of the order management process possible, for example the ability to automatically send an e -mail order acknowledgment to the customer

- c. Administration

Choose a software solution that allows stores to be updated online from any Internet connected PC. Next check out how easy it is to add, delete and amend product data as well as how easy it is run special, time-limited price promotions.

An effective E -store should be:

- Fast-loaded, simple, global,
- Have a shopping cart, and good navigation which allows customers reach the ordering point within three clicks of entering your site.

Followings are free e-store building solutions which have proved very attractive to small businesses:

www.bigstep.com , www.econgo.com , www.freemerchant.com , www.ait2000.com

EXERCISE:

1. Explain how you are going to build your E-store. List the name of store building software program or agent you are going to use.

2. How you are going to process orders taken by credit card?

Lab Session 10 (B)

OBJECT

To learn about Merchant Account

THEORY

Internet Merchant Account is someone to process credit card transactions for your eBusiness. Taking money over the internet is a two-fold process. First, you must have the order taken and the credit card given and processed. Which is done through a central payment processing point (Internet Merchant Account). Once they clear this point they are sent to the point where you have your merchant account set up and money is turned over to your account.

Web resources for establishing a credit card merchant account:

Visa Merchants Online: www.visa.com

MasterCard E-commerce: www.mastercard.com

American Express E-commerce Merchant: www.americanexpress.com

Once your merchant account is in place you need to be able to verify each payment. For this, you need real-time credit card processing scheme.

EXERCISE:

1. Who offers merchant accounts (globally & locally)?

Lab Session 11

OBJECT

Understanding product, pricing and distribution strategies

THEORY

Product Strategies

Let's assume that your product/service/information has a good fit to online transaction and you decided to sell your product online (e-Commerce). Once you decided to sell online you have to have your product available online always. Inventory management becomes very important issue in the e-Commerce. Once you have your product available online, you should have a system to follow up customer feedback on your product quality to improve your product quality or to develop a new product. Some of the features that become more important in the e-Commerce than the traditional product marketing strategies are:

- Personalization of products and services
- Product & service bundled
- Product package selections
- Product availability

Pricing Strategies

On the Web, there is 'perfect price information' due to shopping agents such as www.Simon.com or www.priceline.com, which tell you the lowest price for the product. Increased consumer-to-consumer communication also forces eBusiness to compete on the basis of price. You as a business owner have a choice of publishing your product price online or have your customer call you to find out your product price. Also, you can participate in the list of shopping agents for a fee or do not participate if your pricing is not competitive. It all depends on your pricing strategies of your eBusiness.

Distribution Strategies

Distribution strategies deal with actual delivery of products and services to your customers. You can deliver your products online if you are selling service products or software programs. Speedy delivery and reliable customer service, including tracking inventory, order, and delivery status are key success factors for your distribution strategies.

Below are some examples of ways to move your product/service to your customer.

Inventory: Store product in your own garage or in an in-house fulfillment center. This option gives you full control over the process but requires know-how, labor, facilities and, often, special equipment, all of which may well be outside the area of expertise of the average e-tailer.

Drop-Shipping: Purchase product from a manufacturer or distributor that will "drop ship" products directly to your customers. This method has the advantage of delegating the entire process, from ordering and stocking of product through picking and shipping of orders. There are, however, several serious limitations. You may have no control of when, and in how many packages of your orders are shipped. You may not know if the product is out of stock. Finally this option possibly reduces your profit potential due to extra costs.

Fulfillment House: Contract with a fulfillment house or a 3 party logistics (3PL) rd provider. In this option, your 3PL will provide whatever services you need or wish at an up-front, agreed-upon price. Examples include: www.iFulfill.com and www.shipper.com

EXERCISE:

1. If you are going to sell online, list products/services that you will offer to sell online. Develop ways of bundle your products and services and product packages available.

2. Discuss how you are going to manage your product inventory. Also, discuss how you are going to personalize your products or services for each customer.

3. After developing a pricing strategy, explain how you are going to price your products or services online. Take your competitors' pricing strategies into your consideration.

4. Develop a distribution strategy for your business. How are you going to get your product or service to your customer?

Lab Session 12

OBJECT

Exploring Authentication Mechanism and Security Consideration in E-Commerce based web application.

THEORY

What is the one thing forums, ecommerce sites, online email websites, portal websites, and social network sites all have in common? They all offer *user accounts*. Sites that offer user accounts must provide a number of services. At a minimum, new visitors need to be able to create an account and returning visitors must be able to log in. Such web applications can make decisions based on the logged in user: some pages or actions might be restricted to only logged in users, or to a certain subset of users; other pages might show information specific to the logged in user, or might show more or less information, depending on what user is viewing the page.

This is the first tutorial in a series of tutorials that will explore techniques for authenticating visitors through a web form, authorizing access to particular pages and functionality, and managing user accounts in an ASP.NET application. Over the course of these tutorials we will examine how to:

- Identify and log users in to a website
- Use ASP.NET's Membership framework to manage user accounts
- Create, update, and delete user accounts
- Limit access to a web page, directory, or specific functionality based on the logged in user
- Use ASP.NET's Roles framework to associate user accounts with roles
- Manage user roles
- Limit access to a web page, directory, or specific functionality based on the logged in user's role
- Customize and extend ASP.NET's security Web controls

Authentication, Authorization, User Accounts, and Roles

Authentication, authorization, user accounts, and roles are four terms that will be used very often throughout the lab. These terms will be defined within the context of web security. In a client-server model, such as the Internet, there are many scenarios in which the server needs to identify the client making the request. **Authentication** is the process of ascertaining the client's identity. A client who has been successfully identified is said to be **authenticated**. An unidentified client is said to be **unauthenticated or anonymous**.

Secure authentication systems involve at least one of the following three facets: **something you know, something you have, or something you are**. Most web applications rely on something the client knows, such as a password or a PIN. The information used to identify a user, username and password, for example - are referred to as **credentials**. This lab focuses on *forms authentication*, which is an authentication model where users log in to the site by providing their credentials in a web page form. We have all experienced this type of authentication before. Go to any **ecommerce site**. When you are ready to check out you are asked to log in by entering your username and password into textboxes on a web page.

In addition to identifying clients, a server may need to limit what resources or functionalities are accessible depending on the client making the request.

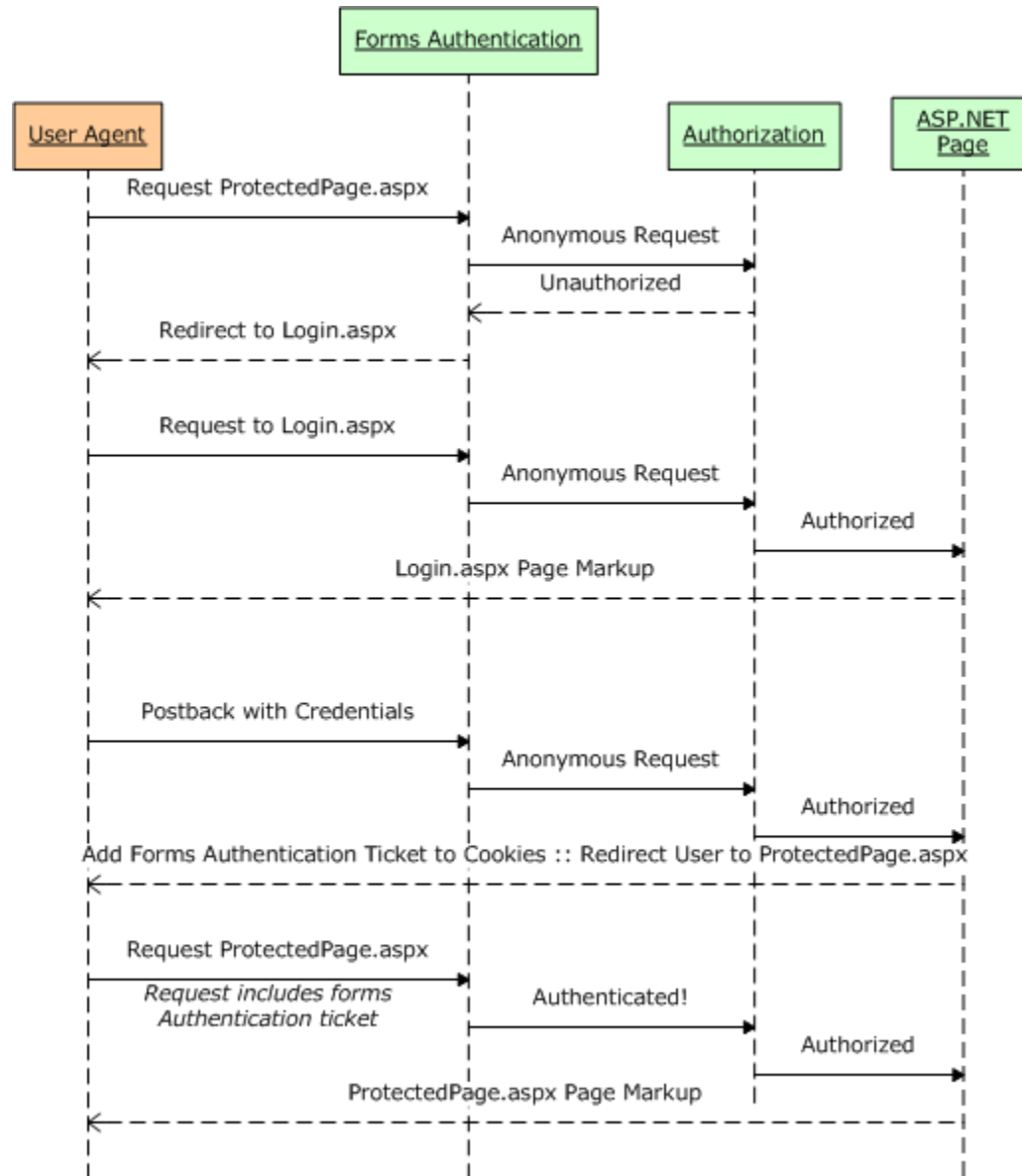
Authorization is the process of determining whether a particular user has the authority to access a specific resource or functionality.

A **user account** is a store for persisting information about a particular user. User accounts must minimally include information that uniquely identifies the user, such as the user's login name and password. Along with this essential information, user accounts may include things like: the user's email address; the date and time the account was created; the date and time they last logged in; first and last name; phone number; and mailing address. When using forms authentication, user account information is typically stored in a relational database like Microsoft SQL Server. Web applications that support user accounts may optionally group users into **roles**. A **role** is simply a label that is applied to a user and provides an abstraction for defining authorization rules and page-level functionality. For example, a website might include an Administrator role with authorization rules that prohibit anyone but an Administrator to access a particular set of web pages. Moreover, a variety of pages that are accessible to all users

(including non-Administrators) might display additional data or offer extra functionality when visited by users in the Administrators role. Using roles, we can define these authorization rules on a role-by-role basis rather than user-by-user.

Authenticating Users in an ASP.NET Application:

Authentication via Forms Authentication:



Lab Session 13

OBJECT

Building Shopping cart application in ASP .NET where users can select items and place an order .Common features include login, and adding new users if user does not exist are required. Validations should be performed wherever needed like email format validation, zip code etc.

DATABASE

For the purpose, A database may be built on SQL Server having following tables;

1. Products table
2. Order Details table

CLASSES

```
public class CartRow
{
    public string id;
    public string name;
    public string price;
    public string items;
};
public class Cart
{
    public System.Collections.ArrayList list = new ArrayList(20);
};
```

WEB FORMS

The two main web-forms are

- 1) ***Main.aspx*** and
- 2) ***CheckOut.aspx***.

Main.aspx contains a grid showing all items present in the products table along with the price per unit and the quantity per unit.

As the item is selected, it is added to his cart and the item is displayed in the right panel. The total price is displayed in the label above. As the user adds more items to his cart, the recalculated price is shown. Upon clicking the *clear cart* button, the cart gets empty.

If the user now wants to finalize the order and presses the *CheckOut* button, he is redirected to the *Login.aspx* page. And finally, the user is asked to enter the Credit Card number, billing PIN code and his email address. It does the client side validations and then confirms the order placed by sending a mail to the user and to finalize the order.