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<b>Subject</b>	<b>: E-Commerce</b>
<b>Unit</b>	<b>: Launching a Successful Online Business</b>
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### **Business Formation**

The process of Business formation can be described as follows:

#### Identify a consumer or a business need in the marketplace

Many businesses simply start with a good idea. Perhaps a magazine article, or a friend's suggestion triggers the idea, and the prospective business owner sees a gap between what people want and what is available.

#### Investigate the opportunity

Just because a person perceives that an opportunity exists does not mean that it is real. Perhaps the number of individuals interested in purchasing the product or service is too small. The cost of manufacturing, marketing, and distributing the product providing the service is too large. For example, online grocery shopping would seem to be wonderful opportunity- relieving busy professionals of time consuming and tiresome task of regular visits to grocery store. Many online grocery ventures have failed because they misjudged the logistical problems associated with grocery warehouse and delivery. One of the purposes of business plan is to determine feasibility of business opportunity in the market place.

#### Determine the business owner's ability to meet the need

If a realistic business opportunity exists, then does the prospective business owner have the ability to convert the opportunity into success is a question. Business skills in staff recruitment, management, negotiation, marketing, and financial management are required, as well as entrepreneurial attitudes such as innovation, risk taking, and being proactive. Many good ideas and realistic initiatives have failed in the execution stage because the owners or principals of business lacked sufficient business skills to make it reality.

Apart from these the owner of online business must consider some requirements that reflect the online nature of business. It is very necessary to understand Internet culture.

A second requirement that the owner of online business needs to consider is the nature of appropriate products and services. Although virtually anything is available for sale on Internet, the degree of sales success is somewhat dependent on type of item or service being offered. For example, products that can be digitized like information, music, and software sell well and are easily delivered. Also services like stock brokering, ticket sales and commodities like books and CDs have been quite successful. In contrast, products such as clothes and perfume do not sell well.

### **Doing Business Online: Building the website**

Every online business needs a website. A website is a primary way any firm doing business on Internet advertises its products or services and attracts customers. Many websites also sell

products and services, and businesses with digital products usually deliver their products via the website as well.

**Classification of websites:**

Informational website: It provides information about business and its product and services.

Interactive website: It provides opportunities for the customers to and the business to communicate and share information. An interactive website contain all information about product or services that an informational site does, but it will also deliver informational features that will encourage interaction between business and customers like e-newsletter, product demonstrations, feedback forms, etc.

Navigation can be made more interactive with features such as ability to search the site, a well-designed site map, etc.

At the highest level of interactivity are attractors- website features that attract and interact with site visitors. Attractors such as games, puzzles, contests, etc encourage customers to find the website, visit again, and recommend the site to their friends.

Transactional website: It sells products and services. These websites include information and interactivity features but also have sell-side features like shopping cart, a product catalog, shipping calculator, and ability to accept credit card number to complete the sale.

**Building the Website****Web Site Hosting**

Every brick-and-mortar business has a storefront from which it sells goods and services. The business either owns or rents the storefront in a mall or independent location. Every online business has a storefront-its website. The decisions about where to host the website and the site's domain name are some of the first important decisions an online business owner has to make. A web hosting service is a type of Internet hosting service that allows individuals and organizations to make their own website accessible via the World Wide Web. Web hosts are companies that provide space on a server they own or lease for use by their clients as well as providing Internet connectivity.

**Web Hosting Options:**

Web Hosting Options include storebuilder service, ISP and web hosting service.

**A storebuilder service** provides disk space and services to help small and micro businesses build a website quickly and cheaply. A storebuilder service such as Yahoo Store (store.yahoo.com) provides series of templates and tools easily build the site, disk space or store webpages, a website address, and management, security, and maintenance of the Internet connection that makes website available to the world. The advantage of storebuilder service is that it is quick, easy and inexpensive way to build website. The disadvantages are lack of online identity, limited functionality like accepting credit cards, lack of differentiation, that is website tends to look like other sites because everyone is using same set of templates.

**An ISP hosting service** provides an independent, standalone website for small and medium sized businesses. The ISP is likely to provide additional hosting services like more storage space, credit card gateway, etc at same or slightly higher cost than the storebuilder service. In ISP hosting the time consuming and expensive task of designing and constructing the website becomes the responsibility of business in ISP hosting service. This is not necessarily a bad thing. Compared to the store builder template, the business gets increased flexibility in terms of what it can do with the site, and the site would be distinctive, able to stand out from the competition.

The site also has a branded domain name. ISP provides limited functionality like database integration. Another consideration is the commitment of the ISP to maintain quality service and keep its hosting services up-to-date. This is a concern because principal business of ISP is providing Internet service, not hosting websites.

### **A Web Hosting service**

A Web Hosting service is a dedicated Web site hosting company that offers hosting services and functionality to businesses of all sizes. They offer more and better services than ISP because web site hosting is their core business. They provide functionality such as database integration, shipping and tax calculators, sufficient bandwidth to support multimedia files, shopping carts, site search engines, etc. A web hosting service is the best option for an online business that needs one or more mirror sites. A mirror site is an exact duplicate of the original web site, but it is physically located on web server on another continent. A business may decide a mirror site is needed when large numbers of customers are geographically a long distance from the original site. A mirror site reduces telecommunication costs and improves speed of customer access because the distance between the web server and the customer's browser is sharply reduced. Customers do not know that they are accessing mirror site.

A variation of web hosting service is Co-location. In this arrangement, a web server owned and maintained by the business is placed in a web hosting service that manages server's connection with internet. This allows the business maximum control over site content and functionality.

The Highest level of hosting options is self-hosting. The business acquires the hardware, software, staff and dedicated telecommunications services necessary to set up and manage its own website. Self – hosting is considered necessary when a business has special requirements such as maximum data security, protection of intellectual property, etc. The other web hosting options allow the hosting company to amortize set up and running costs of site hosting across the hundreds of customers. A business that hosts its own website will have to bear these costs alone. But these costs must consider against the benefits of better control over site performance and increased flexibility in the site design, improvement and functionality.

### **Contracting the Web Host**

When the online business owners have selected the type of hosting service, the next step is to find and negotiate a contract with the Web Host. Considering that the business owner is selecting ISP as the best the web hosting option can be explained as follows:

The search for an ISP host begins by contacting local ISPs for information, asking others in the business community for recommendations, and consulting with local telecommunications and computer user groups. Most businesses will want to use the local ISP because face-to-face contact is helpful if there are problems with customer access to the web site or the business's ability to update it. List of ISPs is finalized. When a short list of potential ISPs has been compiled, a RFQ can be used to ensure that complete and consistent bids for provision of service are submitted. Companies looking for web hosting services should look closely at service quality measures such as the type of servers, guaranteed uptime, number of clients, security, technical support services, and costs.

### **Registering a Domain Name**

The domain name will be the business's online address, and it provides an opportunity to create an identity for the business. A domain name is a name-based address that identifies an Internet-connected server. The domain name is an easy-to-remember name that the Domain Name system

(DNS) maps to a corresponding IP (Internet protocol) address. Each domain name starts with a top level domain (TLD). This is either a general top-level domain like .com or .biz for commercial businesses, .org for non-profit businesses, or it is country-code top-level domain (CC TLD) like .au for Australia or .jp for Japan. Most ccTLDs have second level domain name that indicates the type of organization like redcross.org.au. At the left side of domain name is the organization's name like dell.com.

Domain name assignment is under the authority of Internet Corporation for Assigned Names and Numbers (ICANN) (icann.org). ICANN has delegated responsibility for domain name registration procedures and database administration in the general TLDs to top-level domain administrators such as Afilias (for .info), Public Internet registry (for .org) and VeriSign Global registry services (for .com and .net). Similarly, regional Internet Registries administer the ccTLDs (like Japan Registry service for .jp) Actual registration of domain names is carried out by numerous ICANN-accredited registrars. A list of these registrars is available at [icann.org/registrars/accredited-list.html](http://icann.org/registrars/accredited-list.html). A domain name registrar is a business that assists prospective website owners with finding and registering a domain name of their choice.

The first step for a prospective website owner is to visit a domain name registrar such as Alldomains.com. The owner will look up service at the registrar's web site to determine if desired domain name is available. If it is, the visitor is invited to register it through the registrar for a small fee. The registrar submits the domain name and owner's details to the appropriate domain name database and the name then becomes unavailable to anyone else. If domain name is not available, most registrars automatically offer a list of alternatives that are available.

If desired domain name is already taken, sometimes it can be purchased from the current owner. The Better Whois database of registered domain names (betterwhois.com) contains name, postal address, email address and contact number of the domain name owner. A business with an established website will be reluctant to give up a domain name, but if the domain name is reserved, but not in use, the owner may be willing to sell for a reasonable price. The domain name from the registrar or previous owner can be transferred to the web host for the establishment of website.

Suggestions for selecting good domain name:

1. Make it memorable. Use the company's name, a product name, a brand name or a generic word that describes the product or service.
2. Make it easy to spell. Spelling should be simple, easy and straightforward. Trick spellings should be avoided because it may result into customers not finding the website. Consider acquiring near names too. Near names are domain names that are similar enough that customers might mistype or misspell and go elsewhere or nowhere. For example, goggle.com is owned by the Google; web users who miss 'o' in Google are automatically directed to google.com
3. Avoid numbers and special characters such as hyphens and underscores unless there is special reason, such as putting existing brand online like 7-eleven.com
4. Keep the domain name short while maintaining a good, sensible name. A domain name should be eight letters or less, not including the .com or other suffix, because short domain names are easier to remember and type. Avoid acronyms unless it is well branded as part of the company name like cnn.com

5. Be flexible. If perfect domain is taken, then consider creative variations. For example, the website yellowtruck.com for Ryder Rental truck is named after their distinctive yellow trucks.
6. Think about future; do not let the name be too limiting. For example, Jeff Bezos selected amazon.com as a nondescriptive name because he envisioned that amazon.com would also sell CDs, videos, and many more products not just books.
7. Give products their own name. If the business sells more than one product or service, consider buying domain name for each of them. For example, Procter & Gamble has many sites for many products like for tide laundry powder (tide.com).
8. Investigate the competition. Look at the competitor domain names to create both a distinctive name and one that complies with any inherent standard.
9. Avoid trademarked names.
10. Consider registering in more than one top-level domain. (register same name in the .com, .biz).

### **Content Creation and Acquisition**

Content is text, images, sound and video that make up a Web page. Creating and managing content is critical to website success because content is what a visitor comes looking for at a website, and content is what the website owners use to sell the site, the product or service, and the company that stands behind the site.

Although every website has content, websites differ according to the criticality of the content to their business goals. Some sites offer commodity content, which is information that is widely available and generally free to access on the web. Portals like msn.com and content aggregators such as Nua Internet surveys collect information published elsewhere and make it available to visitors.

Web sites such as Amazon.com are content rich because they offer unique content such as book reviews and author interviews. Publishing quality content is strategy to achieve the real purpose of the site, which is to sell the product or service.

Websites such as nytimes.com and cnn.com sit at the top of the content ladder. These sites are content driven because delivering premium content-content not available elsewhere on the web is their mission.

#### **Content Creation and Acquisition:**

Creating effective content begins with examining business goals. The principal purpose of content is to contribute to the website's goals of product sales, company promotion, branding, and customer service. Content is one of the most effective ways for a website to differentiate itself from its competitors, and content can create identity that is consistent with the branding strategy. To fulfill these goals, the content should be complete, accurate, and timely and should project the image that a business intends to portray in its online presence.

Content pages contain primary content that is information about product or service. A website should also include secondary content that offers many opportunities for achieving business goals:

1. **Cross selling:** Cross selling means offering similar or related products and services to increase sales. Accessories, add-on products, extended warranties are the examples of

cross-selling opportunities that can be offered to buyers on product pages or in purchase process.

2. **Up selling:** Up selling means offering an upgraded version of the product in order to boost the sales and profit. It includes offering product with different design, color, fabric or size.
3. **Promotion:** A coupon, discount or special service is secondary content that can increase sales or improve customer service. For example, Amazon.com frequently offers reduced or free shipping charges, and the offer is promoted on each product page.
4. **Comment:** Reviews, testimonials, expert advice or further explanation about product can be offered after introducing the product.

Creative effective content means fulfilling the information needs of the visitor. To meet the customer's needs, the website owner must provide the information the visitor is looking for and in a way that visitors anticipate and appreciate. Content relevance, timeliness, reliability, scope and usefulness are important, but so are writing style, information structure and use of graphics and color.

### Creating Content

Content on most sites is created by the site's owners and developers. It begins by collecting content that is currently available like product information, company information and logos. Then the value of additional content such as e-newsletter, discussion forum, personalization, FAQ and external link is assessed for inclusion in website. The assessment determines what is critical, what is important and what is desirable and by considering how each bit of content will serve site's goals and whether customers will want it or expect it. Web site may be launched with critical and important content. Then later on important content could be added.

Content can also be generated by customers through-product reviews, discussion forums, etc.

### Buying content

Content can be purchased or licensed. Intermediaries like ContentFinder, Newsedge link content creators with businesses interested in acquiring content. An Australian travel guide company sells travel information to websites like Travelocity.

### Personalizing Content

Personalized content is content that visitors value highly. Personalized content is web content that is prepared to match the needs and expectations of individual visitors. Doing so enables visitors to find the information they need faster.

The process begins by tracking the visitor's behavior on the website via cookies. This information is provided to server software that generates dynamic web pages that contain content the visitor can use.

Amazon.com offers content such as recommendations for products based on previous purchases, recently viewed items, personalized messages. But personalization is expensive. Special programming and powerful computers are required to control and manage the customer information and dynamic page creation process.

### Delivering content by E-Newsletter

E-mail newsletter is an effective strategy for delivering content of interest to potential customers. An e-newsletter is a collection of short, informative articles sent at regular intervals by e-mail to individuals who have an interest in the newsletter's topic.

Simply e-mailing a newsletter to a private group in an e-mail program such as Outlook is unsatisfactory because the size of list will soon grow very large and become unmanageable. Also, there is risk that the email addresses of subscribers will be revealed to each other. Instead, e-mail list software such as ListServ, ListProc owned by web site host, can be used to compile and maintain list of subscribers. The software sends each newsletter individually, so no subscriber knows who else is on the mailing list.

Soliciting new subscribers to an e-newsletter is easy. Usually a sign-up box on home page invites visitors to subscribe to the e-newsletter. Similarly 'send me your e-newsletter' tick box can be included at the end of order form.

Subscribers do not subscribe to e-newsletter just because they like getting e-mail, and they do not subscribe to satisfy the business's goals of marketing the product or service. Customers subscribe because they will receive content that will be of value to them. An e-newsletter offers a value-for-value exchange, where each party gets what it expects, as long as valuable information is provided to the subscribers. What is valuable information for e-newsletter subscriber? Valuable information include-news, tips, announcements.

The content for e-newsletter can come from websites, print sources, or other newsletters. Brief summaries of news articles or press releases can include link to the originating website and site owners usually appreciate free promotion. An e-newsletter can also solicit subscribers to send ideas and tips.

### **Writing an Effective Content**

Rules use to create Web content:

- Write scannable text. Website visitors do not read pages, they scan pages to find the information they are looking for. Headings, graphics, links, lists and tables will catch the visitor's eyes, while large, uninterrupted blocks of text will be ignored.
- If long sections of text are required, break the text into sections with clearly noted headings, use small paragraphs, and insert relevant graphics to break up the text. If there are more than two or three screens of text, create separate pages and lead the reader through it with a More or Next link.
- Begin each page or section of text with a sentence or short paragraph that grabs the reader's attention and compels them to continue reading. This leading sentence may ask a question, propose provocative thought, or introduce a statistic while telling the reader what they will discover by reading what follows.
- Write in a tone and language that reflects purpose of material. Promotional material may be written lightly with many adjectives that highlight the features of the product or service. Product support information will be written clearly, simply, and factually so that the reader will easily understand it.
- Consistency in site content can be achieved using a style guide that specifies, for example, whether style "e-mail" or "email" will be used throughout the site.
- If proper appearance of the text is absolutely necessary or to reduce the possibility of losing intellectual property make the material available in .pdf format.

- Create compelling links that encourage a reader to click. Avoid “Click here”. Instead provide short descriptions that tell the reader why to click and include adjectives to enhance the benefit like “fill out an order form”.
- External links can offer good content for visitors. Set external links to open in a new window so the path to the originating website is not lost.
- Do not use phrases that date fast, such as “soon”, “currently” or “last month”. For example, a web page that describes a new service that was launched “last month” will be wrong in 30 days or less, but page that describes that service as being launched in June 2003 will always be correct.
- Avoid material that is not highly valued by the customers.

### **Content Management**

Content Management is the process of collecting, publishing, revising, and removing content from a website to keep content fresh, accurate, compelling and credible. Almost all sites begin with high level of relevant content, but over time material becomes dated, irrelevant or incorrect. Content management makes sure a site remains relevant and accurate long after launch of the site.

### Content Testing

Web managers need to make extensive and frequent checks of material for accuracy, clarity, typos, poor punctuation, misspelled words, and inconsistencies. Employees knowledgeable about the content should read site material to test it for accuracy, professional editors should read it to check for clarity, and everyone should read new content to find mistakes. For on going testing, new employees might be asked to read the website content to learn about the company and to look for improvements with “fresh eye”.

### Content Removal

An important task in content management is removing old, out-of-date pages from the web server. Even if all references to the page website have been removed, the page is still visible to search engines, searches on the site itself, and link from other web pages. Expired pages should be deleted or moved to an off-line location that can serve as an archive.

### Content Management Software

Content Management software allows nontechnical staff to create, edit, and delete content on company’s website. CMS empowers content owners to manage their own content. CMS include workflow systems for monitoring content creation, review, approval, distribution, and posting and evaluation process. CMS contains tools that allow nontechnical personnel to publish content without specialized. Other features might include content expiration schedules, backup and archive management.

But CMS have failed to live up to expectations. A Jupiter Research (2003) study reported that over complicated packages increase operational costs over human alternatives. 61 percent of companies who have deployed content management software still rely on manual processes to update their sites.

Companies want to purchase should consider following these steps:

1. Do thorough needs analysis.
2. Document requirements and discuss them with at least two other companies that have purchased CMS.
3. Start small and with CMS that has trial version or low entry cost.
4. Assess the system after 30 days to determine what is right, wrong, needed and unnecessary Cost.
5. Repeat assessment process regularly, increasing functionality as requirements and resources Permit.

### **Website Design**

The goal of website is to deliver quality content to its intended audience with the help of elegant design. Website design includes information architecture, navigation design, colors and graphics. Successful design is about meeting customer expectations.

#### **Information Architecture**

Information architecture determines how the site and its web pages are organized, labeled, and navigated to support browsing and searching throughout the web site. Information Architecture could be hierarchical, circular or linear. The most common site structure is hierarchical.

A website typically includes a home page that welcomes a visitor and introduces the site; help pages that assist the visitor to use or navigate through the site; company pages that inform visitor about online business; transaction pages that lead the customer through the purchase process; and content pages that deliver information about the products and services at all stages of the purchase process, from information search to post purchase service and evaluation.

Getting home page right is critical because it is the website's front door; it is the first page that visitors see if they enter company's URL in to the web browser. The purpose of home page is not sell products or business, but to sell website. It does so by describing what is available or new at the site, helping the visitor move around the site, and establishing look and feel of the website. All pages within the site should link back to the home page. Search engines or external links may bring visitors in to the website's interior pages- an action known as deep linking-but the site owner will want the new visitor to be able to easily find the home page.

### **Suggestions for organizing and labeling the site and its web pages to support browsing and searching:**

#### Obey the three-click rule

Visitors should be able to find what they are looking for within three clicks from the homepage. Every page on the site has a link that takes the user back to the homepage.

#### Place important content at the top of the page

Newspaper editors put the most important information-the premier story on the top of the front page. Similarly visitors should be able to find the information they are looking for in the first screen. Put product pictures, prices, mission statement, etc at the top of respective pages.

#### Keep pages short

Long pages are confusing to the reader and take long time to download. Break long pages into several pages and at the bottom of each page provide links that lead the visitor forward to the next page and back to the previous page. Alternatively, outline material at the top of the page and use internal page links to move the visitor to the material quickly.

#### Keep page layouts simple

Consider dividing the page into columns or grid pattern to deliver different types of information consistently. Use different sizes of graphics and short blocks of text to draw the eye to the main offerings on the page.

#### Do not create barriers

A Splash page as the home page usually has a large welcome graphics and requires the visitor to click 'enter' to access the site. A Splash page is a barrier to the information visitors came to get, so do not use it.

#### Follow commonsense publishing rules

Use text effects such as bold, italics, all caps, underline sparingly in order to increase their impact and use white space to increase readability.

#### Make Primary content easy to find

Links to primary content of the website – a product catalog, list of services, directory of information should appear on each page and in appropriately placed page content.

#### Show the products in many ways

Make it easy to search for and display items based on price, size, model, alphabetically and so on.

### **Site Navigation**

The purpose of website navigation is to help visitors quickly and easily find the information they need. Among the questions to be considered in site navigation are: How will visitors enter a site? How will visitors use the site? How will they find what is available at the site? How will they get from one page to another and from one section to another? How will visitors find what they are looking for? Site Navigation has to help visitors find information quickly because visitors do not want to take the time to figure out how to move around the site.

The simplest navigation aid is a Navigation bar. A navigation bar provides the visitor an opportunity to link to major sections of website. Items in the bar should decrease in importance from left to right, beginning with the homepage at the far left. A navigation bar can be built using text, clickable buttons, or menu tabs. A navigation bar almost always appears on the top of the page where it will load first in the browser window. If the page contains banner ads, then navigation bar should be placed below ads. Frequent web users develop banner ad blindness in which they ignore banner ads and everything above them. A second navigation bar should appear at the bottom of every page. An effective navigation scheme is to offer a simple, attractive, graphical navigation bar at the top of the page and a longer, text navigation bar at the bottom of each page. If site's contents need more options then subsections can be placed in each section of the navigation bar. The sub sections can appear on the navigation bar via pull-down menu or mouseover.

A website that has lot to offer needs a navigation column on the left side of the browser window. Large and medium sized sites should include site map page so that the visitor who is unsure of where to go can be presented with all options available. Large and medium sized sites should be searchable. A "search this site" box should appear near the top of the home page and on navigation oriented pages such as site map.

### **Suggestions for designing successful website navigation:**

#### Use small lists and menus

In case of navigation column or site map, group items together in groups of five or less. The human brain handles multiple small lists better than single long list.

Do not rely entirely on graphical images for navigation

Graphics take lot of time to load, will not appear on browsers with graphics turned off, and are high maintenance items. If graphical navigation aid is included, make sure an alternative text only aid is available.

Make the home page easy to find

Include a link to the homepage in the most prominent position in the navigation bar or navigation column. This is helpful visitors who are lost in the site and critical for visitors who land in subpages of the site from search engines or external links.

Integrate Navigation in content

In addition to standard navigation aids, put navigation in the content itself.

Avoid frames

Frames can be useful navigating large sites, but they create numerous usability problems. Search engines cannot identify them, and they are difficult for the browser to handle well.

Follow accessibility guidelines

Design the site to be accessible to all users, regardless of physical ability or the way they use internet. World Wide Web consortium has created a series of guidelines for individuals with visual, audio, neurological and physical disabilities.

## **Consistency**

Consistency means that there is common look and feel to the web site's pages. A site's look and feel consists of the elements that visually distinguish a site from any other, including layout, typeface, colors, graphics and navigation aids. Visitors will become confused if different layouts, colors and navigation bars are used on different pages. Webpage construction aids such as cascading style sheets help insure a consistent look and feel on a website.

Consistency begins with clear and uniform navigation. Every page should have navigation aids and the aids should be of same format , style and in approximately same location on each page. The company's logo should appear on every web page. Contact information should be included on every page. The webpage's URL or home page URL should appear on every page in case the page is printed and distributed. Readers should be able to find the site from the print out.

A short, descriptive title should appear on every page. Titles are important because they tell the visitor the page content when viewed in the browser window, in printed copy, in a search engine result page.

A second aspect of consistency is whether the website appears the same on all visitors' screens. The visitor's view of the website depends on the web browser being used. Even if Internet Explorer dominates the market, millions of users also use Netscape, Opera, Mozilla, Safari, etc. The solution is not to try to design a website for all of these browsers, but use designated World wide web consortium standards. Browsers differ in how they handle forms, text size and file name. An experienced web designer will know these problems and be able to design the site to meet different browser requirements or put browser specific features where they will cause least trouble to the visitors.

## Performance

Visitors who have to wait more than a few seconds for a web page to load are likely to go elsewhere. A number of factors affect the speed at which the page is transferred from web server to client's browser. Factors out of control of the web designer and site owner are the visitor's modem speed, bandwidth, etc. The critical factor that is under the control of web designer is the content and design of the page.

Large graphics or a large number of small graphics on a single page is the cause of long download times. Graphic images should be created at the lowest possible resolution so that the visitor can clearly see the picture, art or icon but so that the graphic file is only a few kilobytes in size.

Page personalization features also affect a page's downloading time. Page personalization requires information for dynamic page creation, sound files, animated banner ads, etc. To decrease page download time, these features should be avoided or used sparingly.

A good bench mark by which to judge speed and responsiveness of the website is the 12 second rule: Every page on the website should appear within 12 seconds; if visitors have to wait longer than that for a page to appear, they will likely stop the transfer and move on to the competition. A variation of the 12 second rule is the 4-second rule, which says that something should appear in the visitor's browser in 4 seconds or less. Even if downloading the whole page takes slightly longer than 12 seconds, if visitors can see something happening they will be unlikely to halt and move on.

## Colors and Graphics

The key to effective use of color and graphics is to design the site to match the expectations of the target audience. Financial services sites tend to use formal colors such as green or blue with simple charts to illustrate the text but not many pictures. Sites directed at female audience tend to feature lighter colors with many pictures. Game sites have flash effects and highly animated graphics.

Other rules for the use of color and graphics on websites:

Use standard colors specified by hexadecimal notation. (e.g. #FFFF99 for pale yellow)

Follow color standards

Most visitors expect dark text and blue, red, or purple links because those tend to be the browser standards. If the color scheme is changed, do not pick a scheme that will confuse the visitor. For example, if colored text is important, avoid blue, because visitors may interpret it as a hyperlink.

Use complementary colors

Never mix the primary colors of red, green and blue in text and background. Generally dark text on light background is easiest to read.

Specify the background color

If the background color is left to the browser's default color, it will not distinguish the site. The color should be unobtrusive and complementary to the colors in the logo, text and graphics in the site.

Use bandwidth-intensive features selectively

Animation, Video and audio clips are useful for demonstrations but should be used only if they are quick to download and worth to wait because they require a lot of bandwidth to download and processor speed to display.

### Design for visually or hearing-impaired visitors

Make a text version for any visual or audio content available from the website for visitors with visual or hearing difficulties.

### Use ALT tag

To speed up web access, 20 to 30 percent of web users surf with graphics turned off. This means the browser downloads the text, but not the graphic images unless specifically requested, so information embedded in graphics is lost. The ALT tag overcomes this problem by telling visitor what the image is or what it represents. With this information the no-graphics visitor can use the site without frustration.

### Avoid distracting features

Wild colors, overactive animation, blinking text and similar features can irritate the visitor or distract their attention away from the content. Use this only when necessary. Avoid excessive use of different fonts and colors on the page, because these will make page difficult to read and unattractive.

## **Quality Assurance**

Quality Assurance is about making sure the site design is properly tested before it is launched and ensuring that it continues to perform up to expectations after launch. This is a critically important part of the web design because the web is constantly changing-content goes out of date, external links go dead or become meaningless, new browsers and web standards come out. Web design should be easy to maintain. Keeping page layout neat and simple makes ongoing maintenance simpler. Using text instead of graphics also increases flexibility in maintenance because it is much easier to change a bit of text than a graphical icon.

Quality websites have responsible owners who test all features of the site personally do not leave maintenance to the technical staff. Quality websites are never done. It is continuous process to keep adding new pages, updating old pages, constantly reviewing the site's look and feel for improvements, etc.

Quality websites are tested regularly. Conduct comprehensive site test to review all current content, eliminate or consolidate infrequently accessed pages, check content development plan for new content that may be required, update FAQ file, check all links to be sure that they are working.

Website performance is also an ongoing concern. The 12 second rule should continue to be tested under number of different scenarios like a customer using dial up modem in another country at peak traffic period. The look, speed and feel of the site should be tested on number of hardware and software options.

## **Website Construction**

Creating content and designing the website are the creative aspects of building a website. Website construction is about three aspects: Internal development, outsourcing and partnering. It is spread over two time periods: start-up construction and ongoing maintenance.

### Internal website development

This is the option of building and maintaining the website with the company staff. Factors that lead the companies to develop their own website include:

#### 1. Use of existing in-house expertise:

Having experienced web designer is good for internal development.

2. Desire to build in-house expertise:

A company wishes to add website development to the company's skill set. New employees are hired or existing staff members are trained in order to build and maintain the site.

3. Protection of proprietary technologies:

If new software or internally developed web based application is critical to the company's EC, then a business is likely to use its own staff to protect that intellectual property and advance its ongoing development.

4. Tighter control and responsiveness:

In maintenance phase, a company is likely to find that problem resolution, content management, and ongoing development of site will be faster, less expensive, and more responsive if internal staff members are responsible for website.

### External Website development/Outsourcing

It takes place when the business hires another firm to build and/or maintain the website. Factors that tend to favour external development include:

1. Speed to market

If getting online fast is critical to the company's start-up success, then companies that specialize in web construction will have the resources necessary to build the site quickly. We hire such companies because generally internal development takes more time.

2. Not a core competency

Frequently, companies decide that website development and maintenance should not be one of their core competencies. Outsourcing web development allows an online business to focus more on promoting the product, increasing sale, building business relationships, and other business activities.

3. Access to special expertise

In initial site construction a web design firm is more likely to have access to all expertise and development tools for site construction. But for special expertise people can be hired on an individual contract basis, but will be expensive and time-consuming.

### Partnering website development

Depending on the nature of the site and skills required, a mixture of internal and external development to build and maintain the website is possible and may be desirable. The principal downside to partnering is the additional overhead of contract and relationship management.

### **Website construction and Maintenance**

Website construction consists of initial content creation, design, programming and installation phases of website's development. This required variety of expert skills that are only rarely available inside the company like web page designers, database integration expertise and programmers. Unless the website is small and offers limited functionality favouring internal development, most business decides on external or partnering as best option for website construction.

Website Maintenance begins when construction ends. This phase consists of ongoing or process of keeping the website open for business, managing content, fixing problems, and making incremental additions to the site. Once the initial website has been constructed, the ongoing development and maintenance usually can be managed internally or externally.

### Managing Website Construction

The website construction team and online business owner are in partnership to develop a well-designed and functional website.

Suggestions for business owner to successfully manage the partnership:

#### Start with the plan

Web owners should know the goals of the site and prepare list of prioritized content, visit some websites to acquire some preferences for overall design, and have a budget figure in mind. Having a plan will make it easier for the designer to quickly learn what is expected and give an accurate bid.

#### Set goals early and stick to them

What the site intends to accomplish is the driving force behind the design. Find a designer who starts with a discussion of goals and content. Stick to the goals and justify every feature and every page by contribution they make to achieve those goals.

#### Use a fixed-price contract

A web designer may want to be paid by the hour because then the designer is assured payment for each hour worked. The result is likely to be higher costs and delayed implementation. Using fixed pricing, either for the entire site or per page, requires more preproduction planning. But websites should be designed and constructed with plenty of advanced planning.

#### Justify graphics and features

Pictures, arts, sound and video all represent high costs in terms of production, page design, disk space and bandwidth. Each of these may be required or desirable hence their use should be justified in the context of the site's goals.

### Accepting Credit Cards

Any E-payment involves five parties:

1. Customer/payer/buyer: The party making the e-payment in exchange for goods or services.
2. Merchant/payee/seller: The party receiving the e-payment in exchange for goods or services.
3. Issuer: The banks or non-banking institutions that issue the e-payment instrument used to Make the purchase.
4. Regulator: Usually a government agency whose regulations control the e-payment process.
5. Automated Clearing House (ACH): An electronic network that transfers money between bank accounts.

Issuers play a key role in any online purchase for two reasons:

1. Customers must obtain their e-payment accounts from an issuer.
2. Issuers authenticate a transaction and approving the amount involved.

#### **Example:**

Suppose a person wants to buy music CDs from a website with credit card. The buyer adds CDs to their shopping cart and goes to check out page. On the check out page, they select a method of shipping and enter their credit card information. The check out page is usually secured; the credit card and other information are protected.

When the buyer hits "Submit", the page is transmitted to the merchant. From there, the information, along with the merchant's identification number, is passed on to the merchant's acquirer. The acquirer sends the information on to the customer's issuing bank for approval. The issuer sends its response back to the acquirer, from where it is passed on the merchant. Finally, the customer is notified. The entire process is automated and takes place in seconds.

Several vendors offer credit card gateways. A credit card gateway ties the merchant's systems to backend processing systems of credit card issuer.

Online credit card payments differ slightly from traditional credit card payments. In online process, the credit card reader in store is replaced with credit card processing software (credit card gateway) that is capable of accepting input from a webpage and submitting it into credit card system(the merchant's bank, customer's bank, the credit card interchange like Visa or Mastercard)

With online transactions, a signature and verification of the signature by the merchant is not required, resulting in what is known as card-not-present transaction. This situation removes a considerable amount of uncertainty and security.

An online business that wants to accept credit cards for payment generally has to do the following:

#### Open a merchant account

Opening a merchant account means acquiring bank approval, making an application and signing a contract with one or more credit companies, and paying the bank and card companies a set-up fee. Ongoing costs for a merchant account include a percentage-based transaction fee and additional charges for other services.

#### Purchase credit card processing software

Credit card gateway companies provide credit card processing software and services that accept credit card numbers and manage their transfer into and back from credit card system. Factors to consider in deciding which gateway company to use include companies that the site developer has worked with before and what software the organization hosting the website will accept.

#### Integrate the credit card processing software into transaction system

The software must be able to manage the flow of data between transaction and customer databases and credit card systems.

### **Website Promotion**

Every successful online business needs a highly visible website. External website promotion includes advertising like banner ads, pop-up ads or marketing strategies like chat room sponsorship.

#### Internal Website Promotion

Internal website promotion begins by including content that establishes the site as useful site for customers to remember so that they return and make purchase. Website should become an indispensable resource with compelling content, useful links to other websites, and features that will make customers want to return.

Promoting the website internally often includes a page of testimonials from satisfied customers. If the site or business has received any awards, those should be drawn to the attention of visitor. Site promotion continues with a marketing plan that includes the URL on every product page, business card, letterhead, package, and e-mail message that leaves the business. A signature file a simple text message that an email automatically adds to outgoing messages. A promotional signature file also includes something that encourages the reader to visit the website.

### Search Engine Optimization

The most important and cost-effective way to attract new customers is Search Engine Optimization. SEO is the application strategies intended to position a website at the top of web search engines such as Google. The strategies to maximize a website's ranking in search engines should be part of content creation, website design and site construction. Optimizing search engine rankings through keyword placement and link building is much easier, less time-consuming, and less expensive if it is integrated into the website development process.

#### *How does SEO works?*

Search engine works on the basis of a database of web pages that are indexed on the criteria such as keyword occurrence and link popularity. These web pages are collected by software called spiders that crawls the web, finding new web pages and sending them back to the search engine for placement in the database. When a search engine user searches the web the results actually come from the archived database.

Search engines differ according to the behavior of spiders, how many pages are in the database, the amount and the type of information the searcher receives, whether pay-for-placement links are included or not, and the algorithm used for ranking the pages.

The key to SEO is understanding the algorithms the search engines use to determine the ranking of the results returned to the searcher. All search engines rely on keyword occurrence in some way. If a keyword entered into a search engine appeared in the page's title, meta tags, headings and numerous times on the page, then that page would rank high in the results returned to the searcher. This led to search engine spamming strategies; like, including long list of keywords in text the same color as the background color so that the site visitor would see only blank space but the spider would find numerous keywords.

In 1998, Google introduced link popularity into its algorithm. In addition to keyword analysis, Google counts the number of sites that link to a target site i.e. incoming links. The most relevant or credible sites will have a larger number of incoming links, and those sites are placed higher in google results.

Because every web search begins with one or more keywords that a user submits to a search engine, choosing the right keywords and putting them in right locations is critical to SEO.

Strategies for keyword creation and placement:

#### Create keywords that the target audience is most likely to use

Prospective customers should be asked what keywords they would use if looking for the site. Also, because the site is seeking a higher ranking against competitors, investigate what keywords competitors include in their titles, and meta tags.

#### Use specific phrases, not general keywords

General keywords such as vacation and computer occur so frequently that they will not contribute much toward a high ranking in search engine. Instead, use phrases such as African safari or Pentium laptop computer.

#### Optimize the title

The page's title is the single most important place to improve keyword SEO. Search engine algorithms place a higher value on keywords in a title. Also, Title is the dominant item in most search results.

### Use Meta tags

Meta tags are HTML codes that are inserted into the header on a web page, after the title tag. Meta elements provide information about a given Web page, most often to help search engines categorize them correctly. They are inserted into the HTML document, but are often not directly visible to a user visiting the site.

In the context of search engine optimization, when people refer to meta tags, they are usually referring to the meta description tag and the meta keywords tag. A description meta tag provides a brief description of the website that some search engines include in their results, so be sure that the site's premier keywords are used in the description. A keyword meta tag tells spiders what keywords the site owner thinks best describes the page's content. Keyword meta tags are useful places to put misspellings or alternative spellings of keyword (like potatoes).

### Use keywords early and often in page content

Keyword-loaded copy helps increase search engine rankings. Use keywords in headings and in hyperlinks. Some search engine algorithms give higher weight to these keywords, assuming that they are important in describing page content than the normal text. Spiders sometimes visit only pages in the first and second level of the site, another reason to build wide and shallow site structure.

### Include keywords in ALT tags

An ALT tag should describe the image, but with keywords possible.

### Avoid spider-hostile features

Search engine spiders and algorithms have a difficult time with frames, Flash, Javascript. Use these features only if compelling design or content consideration requires them.

### Do not use spam search engines

Spamming strategies such as duplicate pages, excessive repetition of a keyword in a meta tag, and same color text can be detected by a search engine, and the site will be black listed from inclusion in the search engine.

After the web pages are optimized for keyword occurrence and placement, the second major step is to increase a web site's link popularity. Getting other sites to link the target web site promotes the site in two ways:

1. Surfers will find the link at other websites, click through to visit, and hopefully become customer.
2. Increasing the number of incoming links increases site's ranking in search engines.

## **Strategies for maximizing link popularity:**

### Create content that promote linking

A site that simply sells product and promotes itself is unlikely to be a site others want to link to. Instead, create linkable content such as product reviews, tips and hints for using the products, free downloads, and informative articles. The content will not only promote the site to its visitors, but also encourage other sites to link to it.

### Seek reciprocal links

In mutual quest for link popularity, it is likely that business partners, suppliers, business associations and major customers will be happy to provide reciprocal links. Websites such as link partners.com list websites interested in reciprocal links. However, it is necessary to cautiously select and place links so as not to devalue the key business and customer links on the site.

Determine what sites already link to the target site

An existing site may already have incoming links that are unknown to the owner. Software such as Link Popularity Analysis Tool can reveal incoming links. Once incoming links are known, seek links from similar sites as appropriate.

Visit competitors

A visit to a competitor's site may reveal outgoing links that will work equally well on your site. Search for incoming links on competitor's site, too. When link partners with competitors are known, seek reciprocal links as appropriate.

Seek highly placed links

When asking for reciprocal links, encourage link partners to place the link in the first and second levels of the site so spiders will find it.

Seek links from well-known sites

Not all links are created equal; a link from yahoo or CNN will be much valuable than a link from a friend's homepage.

Do not use free-for-all (FFA) or link farms

These sites sell or give away links, but search engines ignore them because they represent a form of spamming.

When all keyword and link popularity strategies have been executed, the site should be registered at web search engines and web directories. Registering the site invites spiders to visit the site, rather than waiting for the site to be found. Search engine registration services such as wpromote.com, addme.com will do this for little or no cost.

Several SEO services are available that will supervise entire SEO process for a website. SEO services can assist, but successful SEO requires site owner supervision and involvement.

**NOTE: The basic objective of this material is to supplement teaching and discussion in the classroom in the subject. Students are required to go for extra reading in the subject through Library work.**