Web design

From Wikipedia, the free encyclopedia
(Redirected from Web graphic design)

Web design is a broad term used to encompass the way that content (usually hypertext or hypermedia) is delivered to an end-user through the World Wide Web, using a web browser or other web-enabled software is displayed. The intent of web design is to create a website—a collection of online content including documents and applications that reside on a web server/servers. A website may include text, images, sounds and other content, and may be interactive.

An example of a web page that uses CSS Layouts

Contents

Overview

Web design involves the structure of the website including the information architecture (navigation schemes and naming conventions), the layout or the pages (wireframes or page schematics are created to show consistent placement of items including functional features), and the conceptual design with branding.

All websites should begin with a clear strategy so that it is apparent what they are trying to achieve. The strategy then enables the design to fulfill defined goals.

Content

Such elements as text, forms, images (GIFs, JPEGs, Portable Network Graphics) and video can be placed on the page using HTML/XHTML/XML tags. Older browsers may require Plug-ins such as Adobe Flash, QuickTime, Java run-time environment, etc. to display some media, which are embedded into web page by using HTML/XHTML tags.

Improvements in browsers' compliance with W3C standards prompted a widespread acceptance and usage of XHTML/XML in conjunction with Cascading Style Sheets (CSS) to position and manipulate web page elements and objects.

Typically web pages are classified as static or dynamic:

- Static pages don’t change content and layout with every request unless a human (web master/programmer) manually updates the page. A simple HTML page is an example of static content.
- Dynamic pages adapt their content and/or appearance depending on end-user’s input/interaction or changes in the computing environment (user, time, database modifications, etc.) Content can be changed on the client side (end-user's computer) by using client-side scripting languages (JavaScript, JScript, Actionscript, etc.) to alter DOM elements (DHTML). Dynamic content is often compiled on the server utilizing server-side scripting languages (Perl, PHP, ASP, JSP, ColdFusion, etc.). Both approaches are usually used in complex applications.

With growing specialization in the information technology field there is a strong tendency to distinguish between web design and web development. Web design is a kind of graphic design intended for the development and styling of objects of the Internet's information environment to provide them with high-end consumer features and aesthetic qualities.

This definition separates web design from web programming, emphasizing the functional features of a web site, as well as positioning web design as a kind of graphic design.[1] The process of designing web pages, web sites, web applications or multimedia for the Web may utilize multiple disciplines, such as animation, authoring, communication design, corporate identity, graphic design, human-computer interaction, information architecture, interaction design, marketing, photography, search engine optimization and typography.

- Markup languages (such as HTML, XHTML and XML)
- Style sheet languages (such as CSS and XSL)
- Client-side scripting (such as JavaScript)
- Server-side scripting (such as PHP and ASP)
- Database technologies (such as MySQL and PostgreSQL)
- Multimedia technologies (such as Flash and Silverlight)

Web pages and websites can be static pages, or can be programmed to be dynamic pages that automatically adapt content or visual appearance depending on a variety of factors, such as input from the end-user, input from the webmaster or changes in the computing environment (such as the site's associated database having been modified).

Accessible web design

Main article: Web accessibility

To be accessible, web pages and sites must conform to certain accessibility principles. These accessibility principles are known as the WCAG when talking about content. These can be grouped into the following main areas.[2]

- Use semantic markup that provides a meaningful structure to the document (i.e. web page)
- Semantic markup also refers to semantically organizing the web page structure and publishing web services description accordingly so that they can be recognized by other web services on different web pages. Standards for semantic web are set by IEEE
- Use a valid markup language that conforms to a published DTD or Schema
- Provide text equivalents for any non-text components (e.g. images, multimedia)
- Use hyperlinks that make sense when read out of context. (e.g. avoid "Click Here")

Website accessibility is also changing as it is impacted by Content Management Systems that allow changes to be made to webpages without the need of obtaining web-based programming language knowledge.

It is very important that several different components of web development and interaction can work together in order for the Web to be accessible to people with disabilities. These components include:

- content - the information in a web page or web application, including:
  - natural information such as text, images, and sounds
  - code or markup that defines structure, presentation, etc.
- Web browsers, media players, and other "user agents"
- assistive technology, in some cases - screen readers, alternative keyboards, switches, scanning software, etc.
- users' knowledge, experiences, and in some cases, adaptive strategies using the Web
- developers - designers, coders, authors, etc., including developers with disabilities and users who contribute content
- authoring tools - software that creates web sites
- evaluation tools - web accessibility evaluation tools, HTML validators, CSS validators, etc.

History

Tim Berners-Lee published what is considered to be the first website in August 1991.[3] Berners-Lee was the first to combine Internet communication (which had been carrying email and the Usenet for decades) with hypertext (which had also been around for decades, but limited to browsing information stored on a single computer, such as interactive CD-ROM design). Websites are written in a markup language called HTML, and early versions of HTML were very basic, only giving a website's basic structure (headings and paragraphs), and the ability to link using hypertext. This was new and different from existing forms of communication - users could easily navigate to other pages by following hyperlinks from page to page.

As the Web and web design progressed, the markup language changed to become more complex and flexible, giving the ability to add objects like images and tables to a page. Features like tables, which were originally intended to be used to display tabular information, were soon subverted for use as invisible layout devices. With the advent of Cascading Style Sheets (CSS), table-based layout is commonly regarded as outdated. Database integration technologies such as server-side scripting and design standards like W3C further changed and enhanced the way the Web is made. As times change, websites are changing the code on the inside and visual design on the outside with ever-evolving programs and utilities.

With the progression of the Web, tens of thousands of web design companies have been established around the world to serve the growing demand for such work. As with much of the information technology industry, many web design companies have been established in technology parks in the

developing world as well as many Western design companies setting up offices in countries such as India, Romania, and Russia to take advantage of the relatively lower labor rates found in such countries.

Website planning

Purposing web design is a complex, but essential ongoing activity. Before creating and uploading a website, it is important to take the time to plan exactly what is needed in the website. Thoroughly considering the audience or target market, as well as defining the purpose and deciding what content will be developed, are extremely important.

Context

Web design is similar (in a very simplistic way) to traditional print publishing. Every website is an information display container, just as a book; and every web page is like the page in a book. However, web design uses a framework based on digital code and display technology to construct and maintain an environment to distribute information in multiple formats. Taken to its fullest potential, web design is undoubtedly the most sophisticated and increasingly complex method to support communication in today's world.

Purpose

It is essential to define the purpose of the website as one of the first steps in the planning process. A purpose statement should show focus based on what the website will accomplish and what the users will get from it. A clearly defined purpose will help the rest of the planning process as the audience is identified and the content of the site is developed. Setting short and long term goals for the website will help make the purpose clear and plan for the future when expansion, modification, and improvement will take place. Measurable objectives should be identified to track the progress of the site and determine success.

Audience

Defining the audience is a key step in the website planning process. The audience is the group of people who are expected to visit your website – the market being targeted. These people will be viewing the website for a specific reason and it is important to know exactly what they are looking for when they visit the site. A clearly defined purpose or goal of the site as well as an understanding of what visitors want to do or feel when they come to your site will help to identify the target audience. Upon considering who is most likely to need or use the content, a list of characteristics common to the users such as:

- Audience Characteristics
- Information Preferences
- Computer Specifications
- Web Experience

Taking into account the characteristics of the audience will allow an effective website to be created that will deliver the desired content to the target audience.

Compatibility and restrictions

Because of the market share of modern browsers (depending on your target market), the compatibility of your website with the viewers is restricted. For instance, a website that is designed for the majority of websurfers will be limited to the use of valid XHTML 1.0 Strict or older,

Cascading Style Sheets Level 1, and 1024x768 display resolution. This is because Internet Explorer is not fully W3C standards compliant with the modularity of XHTML 1.1 and the majority of CSS beyond 1. A target market of more alternative browser (e.g. Firefox, Google Chrome, Safari and Opera) users allow for more W3C compliance and thus a greater range of options for a web designer.

Another restriction on webpage design is the use of different image file formats. The majority of users can support GIF, JPEG, and PNG (with restrictions). Again Internet Explorer is the major restriction here, not fully supporting PNG's advanced transparency features, resulting in the GIF format still being the most widely used graphic file format for transparent images.

Many website incompatibilities go unnoticed by the designer and unreported by the users. The only way to be certain a website will work on a particular platform is to test it on that platform.

Planning documentation

Documentation is used to visually plan the site while taking into account the purpose, audience and content, to design the site structure, content and interactions that are most suitable for the website. Documentation may be considered a prototype for the website – a model which allows the website layout to be reviewed, resulting in suggested changes, improvements and/or enhancements. This review process increases the likelihood of success of the website.

The first step may involve information architecture in which the content is categorized and the information structure is formulated. The information structure is used to develop a document or visual diagram called a site map. This creates a visual of how the web pages or content will be interconnected, and may help in deciding what content will be placed on what pages.

In addition to planning the structure, the layout and interface of individual pages may be planned using a storyboard. In the process of storyboarding, a record is made of the description, purpose and title of each page in the site, and they are linked together according to the most effective and logical diagram type. Depending on the number of pages required for the website, documentation methods may include using pieces of paper and drawing lines to connect them, or creating the storyboard using computer software.

Website design

Web design is different than traditional print publishing. Every website is an information display container, just as a book is a container; and every web page is like the page in a book. However the end size and shape of the web page is not known to the web designer, whereas the print designer will know exactly what size paper he will be printing on. [4]

For the typical web sites, the basic aspects of design are:

- The *content:* the substance, and information on the site should be relevant to the site and should target the area of the public that the website is concerned with.
- The *usability:* the site should be user-friendly, with the interface and navigation simple and reliable.
- The *appearance:* the graphics and text should include a single style that flows throughout, to show consistency. The style should be professional, appealing and relevant.
- The *structure:* of the web site as a whole.

A web site typically consists of text, images, animation and /or video. The first page of a web site is known as the Home page or Index Page. Some web sites use what is commonly called a Splash Page. Splash pages might include a welcome message, language or region selection, or disclaimer, however search engines, in general, favor web sites that don't do this which has caused these types of

pages to fall out of favor. Each web page within a web site is a file which has its own URL. After each web page is created, they are typically linked together using a navigation menu composed of hyperlinks.

Once a web site is completed, it must be published or uploaded in order to be viewable to the public over the internet. This may be done using an FTP client.

Multidisciplinary requirements

Web site design crosses multiple disciplines of multiple information systems, information technology, marketing, and communication design. The web site is an information system whose components are sometimes classified as front-end and back-end. The observable content (e.g. page layout, user interface, graphics, text, audio) is known as the front-end. The back-end comprises the organization and efficiency of the source code, invisible scripted functions, and the server-side components that process the output from the front-end. Depending on the size of a web development project, it may be carried out by a multi-skilled individual (sometimes called a web master), or a project manager may oversee collaborative design between group members with specialized skills.

Environment

Layout is a double edged sword: on the one hand, it is the expression of a framework that actively shapes the web designer. On the other hand, as the designer adapts that framework to projects, layout is the means of content delivery. Publishing a web engages communication **throughout** the production process as well as **within** the product created. Publication implies adaptation of culture and content standards. Web design incorporates multiple intersections between many layers of technical and social understanding, demanding creative direction, design element structure, and some form of social organization. Differing goals and methods resolve effectively in successful deployment of education, software and team management during the design process. However, many competing and evolving platforms and environments challenge acceptance, completion and continuity of every design product.

Collaboration

Early web design was less integrated with companies' advertising campaigns, customer transactions, extranets, intranets and social networking. Web sites were seen largely as static online brochures or database connection points, disconnected from the broader scopes of a business or project. Many web sites are still disconnected from the broader project scope. As a result, many web sites are needlessly difficult to use, indirect in their way of communicating, and suffer from a 'disconnected' or ineffective bureaucratic information architecture.

Form versus function

A web developer may pay more attention to how a page looks while neglecting other copywriting and search engine optimization functions such as the readability of text, the ease of navigating the site, or how easily the visitors are going to find the site. As a result, the designers may end up in disputes where some want more decorative graphics at the expense of keyword-rich text, bullet lists, and text links. Assuming a false dichotomy that form and function are mutually exclusive overlooks the possibility of integrating multiple disciplines for a collaborative and synergistic solution. In many cases form follows function. Because some graphics serve communication purposes in addition to aesthetics, how well a site works may depend on the graphic design ideas as well as the professional writing considerations.

When using a lot of graphics, or sending a lot of instructions to the end client computer, a web page may load slowly, often irritating the user. This has become less of a problem as the internet has evolved with high-speed internet and the use of vector graphics. However there is still an ongoing engineering challenge to increase bandwidth and an artistic challenge to minimize the amount of graphics and their file sizes. This challenge is compounded since increased bandwidth encourages more graphics with larger file sizes.

Layout

Layout types

Layout refers to the dimensioning of content in a device display, and the delivery of media in a content related stream. Web design layouts result in visual content frameworks: these frameworks can be fixed, they can use units of measure that are relative, or they can provide fluid layout with proportional dimensions. The deployment flowchart (a useful tool on any design project) should address content layout. Many units of measure exist, but here are some popular dimension formats:

- Pixel measure results in fixed or static content
- Em measure results in proportional content that is relative to font-size
- Percent measure results in fluid content that shrinks and grows to "fit" display windows

Proportional, liquid and hybrid layout are also referred to as dynamic design. Hybrid layout incorporates any combination of fixed, proportional or fluid elements within (or pointing to) a single page. The hybrid web design framework is made possible by digital internet conventions generally prescribed by the W3C. If any layout does not appear as it should, it is very likely that it does not conform to standard design principles, or that those standards conflict with standard layout elements. Current knowledge of standards is essential to effective hybrid design.

The earliest web pages used fixed layouts without exception. In many business pages fixed layouts are preferred today as they easily contain static tabled information. Fixed layout enforces device display convention, as viewers must set their display to at least a certain width to easily view content. This width can include display of corporate logos, cautions, advertisements and any other target content. Design frameworks for fixed layout may need to include coding for multiple display devices.

Hybrid design maintains most static content control, but is adapted to textual publishing, and for readers, to conventional (printed) display. Hybrid layouts are generally easy on the eye and are found on most sites that distribute traditional images and text to readers. For some sites, hybrid design makes an otherwise cold text column appear warm and balanced. A good example of hybrid layout is Wordpress, where liquid design is now optional, and movie and auditory media is stretching the envelope.

Fluid design is useful where content is delivered to an 'unknown device' population. Appropriate liquid code displays images, text and spaces proportional to display size. Someone with a handheld can see view and interact with the same content as someone using a large desktop monitor. However, scaling of content for a variety of devices has more recently evolved with modern web browsers, allowing users to see the same layout across all devices.

Layout concerns

With the coming of numerous monitor sizes, "fluid" web sites are becoming less common. The result is that fluid layouts look "old" because they were typically used more in the early days of the internet. In dealing with font layout, even expressed as ems, a static core cannot be escaped and often anchors most page content. However, as new standards are adopted by device manufacturers,

viewers notice a wider spectrum of content and a greater interaction between and through content. For the World Wide Web Consortium drawing up tomorrows layout conventions, new media types and methods are increasingly in the mix. It is a true double axiom that 'content is all about layout', and 'layout is all about content'. We could say that layout is what designers squeeze into available technology — content is the culture manifested in the layout. "Space' is the envelope holding layout and content together. Space communicates style (layout appearance) to the target population. Understanding how to adapt space to this layout-content relationship is essential to web design. Every design's survivability depends on its sensitivity to emerging technology (within the cultures that its framework is servicing), and immediate acceptance depends on the layout or presentation of that content. On every page, no content is more susceptible to changes and variations in standards, than space. While the professional designer casually admits that 90% of design code is used to adapt space, most of his current work deploys spatial manipulations being used to actively reshape Internet communication.

Conceptual barriers to adequate layout abound! Presently layout is challenged by conflicting convention that makes it impossible to fit liquid and hybrid layout to the bottom corners of a display. Simply put, display device manufactures use the top right and/or left corners to display content. For non-standard equipment, setting custom fixed layout to their device is still seen by some businesses as a means of increasing revenue, as they can sell a 'unique' display. This business approach, domainating the digital market at the end of the last century, is not so useful today. However, some would claim a decade behind schedule, CSS3 and HTML5 are finally taking the four penultimate display reference points seriously.

A common misconception among designers is to assume their layout is liquid because initial space and text container widths are in percents. However, their 'liquid' framework, while adhering to focused conventions, failed to manage graphic content. A subsequent edit placing a large image on the page, destroys the page appearance. When managing a design framework, it is critical that layout address content, convention and user interaction.

Device

On the Web the designer has no control over several factors, including the size of the browser window, the web browser used, the input devices used (operating system, mouse, touch screen, voice command, text, teletype, cell phone, or other hand-held), and the size, design, and other characteristics of the fonts that users have available (installed) and enabled (preference) on their device. Unique manufacture and conflicting device contentions are further complicated by varying browser interpretations of the same content, and some content automatically can trigger browser changes. Web designers do well to study and become proficient at removing competitive device and software markup so that web pages display as they are coded to display. Eric Meyers, a well known educator and developer, is one of many resources who have spear-headed HTML reset coding. While they cannot yet leave one local environment to control another, web designers can adjust target environments to remove much common markup that alters or corrupts their web content. Because device manufacturers are highly protective of their patent markup, Meyers and others caution that reset remains *experimental*.

Tableless web design

Main article: Tableless web design

When Netscape Navigator 4 dominated the browser market, the popular solution available for designers to lay out a web page was by using tables. Often even simple designs for a page would require dozens of tables nested in each other. Many web templates in Dreamweaver and other WYSIWYG editors still use this technique today. Navigator 4 didn't support CSS to a useful degree, so it simply wasn't used.

After the browser wars subsided, and the dominant browsers such as Internet Explorer became more W3C compliant, designers started turning toward CSS as an alternate means of laying out their pages. CSS proponents say that tables should be used only for tabular data, not for layout. Using CSS instead of tables also returns HTML to a semantic markup, which helps bots and search engines understand what's going on in a web page. All modern web browsers support CSS with different degrees of limitations.

However, one of the main points against CSS is that by relying on it exclusively, control is essentially relinquished as each browser has its own quirks which result in a slightly different page display. This is especially a problem as not every browser supports the same subset of CSS rules. There are the means to apply different styles depending on which browser and version are used but incorporating these exceptions makes maintaining the style sheets more difficult as there are styles in more than one place to update.

For designers who are used to table-based layouts, developing web sites in CSS often becomes a matter of trying to replicate what can be done with tables, leading some to find CSS design rather cumbersome due to lack of familiarity. For example, at one time it was rather difficult to produce certain design elements, such as vertical positioning, and full-length footers in a design using absolute positions. With the abundance of CSS resources available online today, though, designing with reasonable adherence to standards involves little more than applying CSS 2.1 or CSS 3 to properly structured markup.

These days most modern browsers have solved most of these quirks in CSS rendering and this has made many different CSS layouts possible. However, some people continue to use old browsers, and designers need to keep this in mind, and allow for graceful degrading of pages in older browsers. Most notable among these old browsers is Internet Explorer 6, which is viewed in the web design community as becoming the new Netscape Navigator 4 — a block that holds the World Wide Web back from converting to CSS design. However, the W3 Consortium has made CSS in combination with XHTML the standard for web design.

Content Management

Main article: Content management

Many sites require frequent content changes and new content publishing at short notice. Content Management Systems (CMS) allow non-technical contributors to maintain and update site content without programing knowledge or special software tools. Typically content on the website is editable using a "What You See Is What You Get" (WYSIWYG) model. In addition to maintaining existing content, CMS administrators can upload images or videos, create pages, sections or categories, and add or edit menu structures.

See also

- ASP.NET
- Biositemap
- Color tool
- Content Delivery Network
- Content management
- Cross-browser
- Faceted navigation
- Hover ad
- Information architecture
- Link rot
- List of HTTP status codes
- Pagination
- Progressive Enhancement
- Sitemap
- Search engine optimization (SEO)
- Streaming Media
- Web application framework
- Web colors
- Web safe fonts
- Web indexing
- Web integration
- Website templates
- Web usability
- Web usage mining

- Interaction design
- Java
- Ruby on Rails
- PHP
- Server-side scripting
- Style sheet (web development)
- Unobtrusive JavaScript
- User interface design
- User experience (UX)
- Web 2.0
- Rich Internet application (RIA)
- Knowledge visualization
- Website architecture
- Information architecture (IA)
- Website awards
- Website builder
- Yahoo! Site Explorer
- Google Webmaster Tools

References

1. ^ Denis Borodayev. Web site as a Graphic Design Object. Monograph. (Бородаев Д.В. Веб-сайт как объект графического дизайна. Монография. - Х.: Септима ЛТД, 2006. - 288 с. - Библиогр.: с.262-286. ISBN 966-674-026-5
2. ^ *Web Content Accessibility Guidelines (WCAG) 2.0* (http://www.w3.org/TR/WCAG20/) . December 11, 2008. http://www.w3.org/TR/WCAG20/.
3. ^ "Berners-Lee on the read/write web" (http://news.bbc.co.uk/1/hi/technology/4132752.stm) . London: BBC News. 2005-08-09. http://news.bbc.co.uk/1/hi/technology/4132752.stm. Retrieved 2010-03-24.
4. ^ "Design Issues for the World Wide Web" (http://www.w3.org/DesignIssues/) . *public domain*. World Wide Web Consortium. 2009-06-09. http://www.w3.org/DesignIssues/. Retrieved 2009-06-10.

External links

- Web design and development (http://www.dmoz.org/Computers/Internet/Web_Design_and_Development/) at the Open Directory Project
- W3C consortium for web standards (http://www.w3.org/standards/webdesign/)

Retrieved from "http://en.wikipedia.org/wiki/Web_design"
Categories: Web design | Communication design