Resource Sheet 1

Getting Started - Key Internet Technologies

Introduction

This resource sheet provides an overview of key web technologies. It is intended to offer a basic introduction to the internet for voluntary and community organisations about to embark on a web based project.

How Does a Website Work?

The Internet is a network of computers accessible world wide.

A web page is a file on a *web server*. A *web browser* enables web pages to be viewed as readable documents, rather than as files and folders familiar to PC users. Navigation is provided by *hyperlinks*, clickable images or text, which can take a user to any other resource on the Internet. The hyperlink uses a *Uniform Resource Locator (URL)*. Each resource on the Internet has a unique URL.

A website is a separate "domain" (or server) and is identified by a unique *domain name* (e.g www.cismedia.co.uk).

Web pages use a network protocol: *HTTP* to function. They use *HTML*, a computer language which can be read by web browsers.

Website Basics

There are three essentials needed for a website:

- internet access
- some space on a web server (hosting)
- domain name

Internet Access

Internet access is provided by *Internet Service Providers* (ISPs). They generally provide e-mail services and offer some space on a web server (hosting).

Hosting

ISP provided web space can be limiited in both size and resources. Hosting can also be provided by *3rd party hosts*. A wide range of packages are available, costs vary considerably but a quality package for a small to medium sized project can cost less than £100/year. A hosting package will normally involve an annual or monthly charge.

Hosting with a new domain name will normally be set up within 24 hours. If you intend to outsource development of your project it may be best to agree an appropriate package with your chosen developer.

Domain Names

Most hosts offer a domain name checking service - to see if your chosen name is available. A .org.uk name typically costs around £10. Hosts will often offer free or cheaper domain name purchase as part of setting up a hosting package. Names are normally purchased for a two year period and will need to be renewed.

Types of Website

Websites fall into two main types:

- static (similar to a paper document but online)
- dynamic (also known as database driven)

Static Websites

A static website uses HTML. Like a paper document if a page is updated the HTML needs to be edited directly. Static websites are best for smaller projects. They are quick to set up.

Dynamic Websites

A dynamic website works with a database. This can help manage the information on the site and supports both interaction (e.g. web forums) and online services (e.g. directories or subscriptions). Although they are more costly, for medium sized and large projects they offer significant efficiency benefits.

Business orientated hosting packages will normally support dynamic websites, offering a web database and server side scripting (see below) either as part of the package or as an add-on.

Web Design Software

Probably the best known web design package is Macromedia's (now Adobe) *Dreamweaver*. Adobe also provide *Go Live* - both are professional standard products. There is a wide choice of other products including Microsoft's *Front Page*.

Although helpful these products aren't actually essential. It is possible to write HTML in a simple text editor and upload (*FTP*) this to your web space. Many standard applications will also save files as HTML.

One benefit of dynamic websites is the potential for them to include a web based content management system - a password protected area of your site from which you can post and edit content.

Beyond HTML

Whilst a website can be written using just HTML more advanced sites will use one or more additional languages.

Cascading Style Sheets (CSS)

HTML can be used to apply style to webpages although this approach is going out of date. *CSS* is a language for controlling the layout and style of web pages.

Javascript - Client Side

Client side because it runs on the end user's PC, *Javascript* can be used to interact with users. Whilst HTML simply tells a browser how to display text or images, Javascript is more about programming. It is used for roll over buttons, verifying data or other events that respond to a user's activity. Javascript can be subject to local settings and can be de-activated. It can also behave differently in different browsers.

Server Side Scripting

Dynamic websites are made possible by server side scripting. It uses one of several languages (*PHP*, *ASP*, *Cold Fusion*). They all write HTML pages on the fly, enabling the content of web pages to change in real time. This makes web forums, online purchasing and all forms of user interaction possible.

Web Databases

Server side scripting normally works with a web database. The database stores information that is displayed in the website. For example, a web page may be written to always display the latest news story, when a new story is added to the database the web page automatically updates. *MySQL* is a common web database offered by most hosts, normally in combination with PHP. Windows based hosting may support MS SQL or MS Access.

Flash

Whilst HTML is the basic language of the web it is prone to quirks - browsers don't all behave the same. On the web *Flash* provides a stable environment. The leading web animation programme, it also offers richer design. It requires the Flash Player plug in.

Other Applications

PDF and MS Word documents are also commonly accessed on the Web. They can be uploaded and then accessed via a hyperlink in a web page. Less commonly used formats such a MS PowerPoint and MS Excel can used in a similar way. However, users will need the relevant applications to view these documents.

Images

Images are not actually embedded in web pages. They are stored in a folder on the web server. HTML code is the used in the web page to reference an image by its URL. Images can be uploaded using FTP. There are different image formats: JPEG is normally used for photographs, GIFF for line art, logos and illustrations, the PNG format offers an alternative to GIFF.

Uploading - FTP

The process of placing files on the web server is known as FTP. Web design software provides this facility and FTP tools are also available. However, it is also possible to connect directly to an FTP site, on a Windows PC an FTP connection can be created as a network place. Web pages, documents and images can then be uploaded - just like moving files on a PC.

Download Issues

As broadband expands download times are becoming less important. However, images, Word files, PDFs and Flash files can all be large and take time to download. Sizing images before uploading and using web optimization options for files can help reduce the time it takes users to access your material.

More Resources

About the Internet

www.internet-guide.co.uk

Hosting

www.cheaphostingdirectory.com
www.xcalibre.co.uk

HTML & CSS:

W3C HTML Tutorial
W3C CSS Tutorial
www.htmlcodetutorial.com

Javascript:

W3C Javascript Tutorial
Sample Source Site

Open source:

www.php.net
www.mysql.com