

IN BRIEF

- Creating a practice website is one way of promoting a dental practice.
- Clear steps in the process of creating a practice website are explained.
- The services offered by different website design companies are compared.

Creating a practice website

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A website is a window to the outside world. For a dental practice, it may be the first point of contact for a prospective new patient and will therefore provide them with their 'first impression'; this may be days or weeks before actually visiting the practice. This section considers the different ways of creating a dental practice website and lists some of the main dental website design companies. It also describes what factors make a successful website and offers advice on how to ensure that it complies with current regulations and recommendations.

THE INTERNET GUIDE FOR DENTISTRY

1. An introduction to the Internet
2. Connecting to the Internet
3. Introduction to email
4. Effective use of email
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WHAT IS A WEBSITE?

A website can be anything from a single web page of text to the \$2.5 million all-singing, all-dancing multimedia experience of IBM's showpiece 'Eternal Egypt'.¹ What they have in common is that they are written in HTML (or one of its variants), are stored on a web server and are viewed over the Internet by a web browser.

WHY CREATE A PRACTICE WEBSITE?

There are many different reasons for creating a practice website, the most common reason being to promote the services of the practice. This may be aimed at the practice's existing patient base or it may be more geared towards attracting new patients. Your website could be a patient's first experience with the practice. Some sites may want to emphasise patient education, certain dental products or treatment philosophies. Online appointment booking has also become a popular service. But remember that the web is a 'pull' medium as opposed to a 'push' medium; people still have to actively seek out your site.

DO-IT-YOURSELF OR OUTSOURCE?

There are four main ways of creating a practice web site:

1. Write the site from scratch yourself. This

HTML

All web pages are written using the same computer language, hypertext markup language (HTML). HTML has evolved from the printing industry. HTML started as a simple form of tagging or formatting text, and has developed to include commands for integrating the multimedia and interactive elements found on many web pages. HTML instructs your web browser how the text and graphics should appear (eg bold, italic, font size, centred etc) as the page is downloaded onto your computer. Figure 1 shows a simple example of what a 'raw' HTML web page looks like, and Figure 2 shows how it would appear when viewed by a web browser.

The importance of HTML is the fact that it is not system-dependent; this means that your web browser will be able to view any page written in HTML no matter what operating system your computer is using (for example, IBM-PC or Apple Macintosh). For a good grounding in using HTML, visit w3schools' HTML Tutorial.²

entails a fair bit of work learning about HTML and multimedia presentation. The good news is that there are thousands of sites on the web that have been designed to guide you through this process, most of them written by educational establishments. There is a wide range of software which can be used to write web pages:

- Notepad (this text editor comes bundled with Windows and is all you need to write simple pages in HTML)

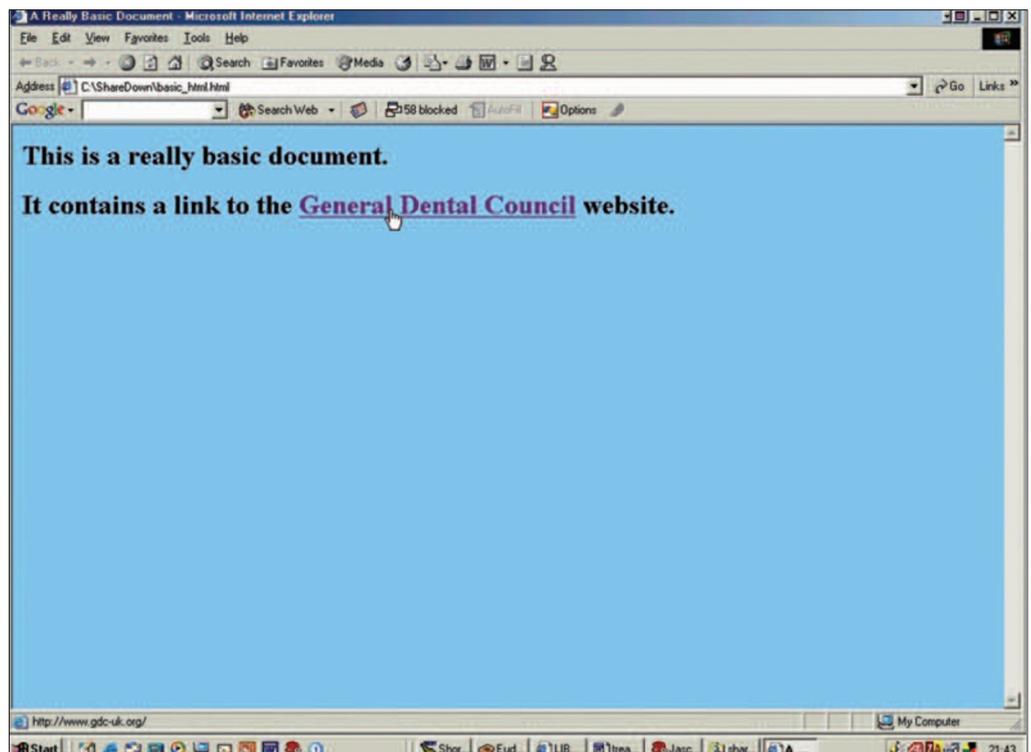
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PRACTICE

Fig. 1 HTML code written in Notepad (the colours have been added simply to highlight the different sets of tags). Notice that most of the tags are in pairs, with the second command turning off the tag. It can be saved as a web page by using the file extension .html instead of .txt

```
<HTML>
<HEAD>
<TITLE>A Really Basic Document</TITLE>
</HEAD>
<BODY BGCOLOR="#87ceff">
<H1>
This is a really <B>basic</B> document
<BR>
It contains a link to the
<A HREF="http://www.gdc-uk.org/">General Dental
Council</A> website
</H1>
</BODY>
</HTML>
```

Fig. 2 How the HTML code in Figure 1 would appear as a web page when viewed in Internet Explorer



- Word (which will 'translate' most straightforward Word documents into HTML documents with a moderate degree of success)
 - Free or non-expensive authoring programs, such as AceHTML Freeware,³ Coffee Cup's HTML Code/Visual Editor⁴ (\$49) or NetObjects Fusion⁵ (\$200). Some programs concentrate on the HTML code behind the design while others are more like desktop publishing software and keep the code out of sight
 - Professional authoring packages, such as Macromedia's Dreamweaver⁶ will do everything very well, but has a steep learning curve (and costs almost £400).
2. Use a website content management service to create your own simple site online. One drawback is the lack of templates suitable for a dental practice. Many of the American sites have designs that are very outdated. A UK site that has excellent templates that can easily be adjusted for dental use is MoonFruit⁷ (Fig. 3). You can trial the SiteMaker software for free for 14 days. It is also excellent value for money; the lite version costs £26.99 a year and allows you to create one web site with an unlimited number of pages, up to a maximum of 40MB. I have created a demonstration site⁸ which, using existing text and images, took about 90 minutes to create
 3. Use a dental website design company to build a site for you based upon a selection of different designs. They would also normally find you a suitable domain name and host the site for you. Minor text updates are often included in the package (see Table 1 for details)
 4. Use a web design company to produce a bespoke website from scratch. If you require a unique look to your website with the very latest technological 'bells and whistles' then this may be the best option. Prices will vary enormously depending on your requirements (see Table 1 for details). A computer student wanting to supplement his/her university grant may well charge less than a

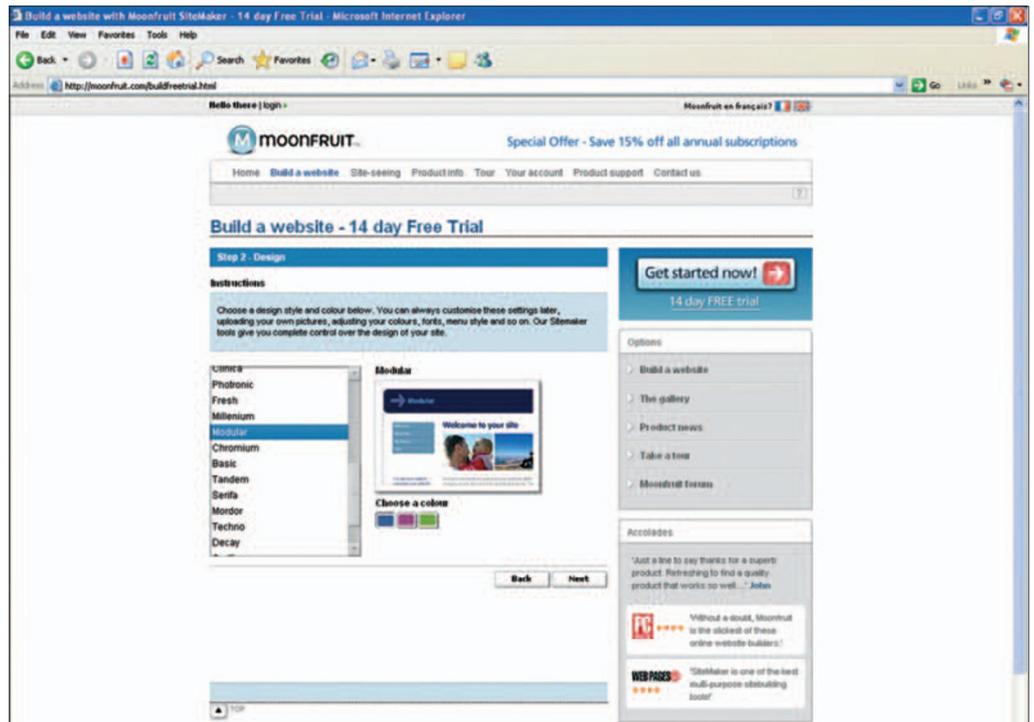
Table 1 This table shows details of the services provided by various website design companies who create sites for dental practices. Information was taken from each company's website and was correct on 16th March 2007

Dental website design company	Number of style templates	Features	Costs
Admor http://www.admor.co.uk/	3	Up to five pages Can add your own logo to the template Will help in writing copy Includes one free change per month Search engine registration.	£611 package includes the first year's hosting and two free email addresses £25 for two years domain name registration £216 per year for hosting.
Dental Community http://www.dentalcommunity.co.uk/	6	Up to seven pages Scanning & image manipulation of photos Unlimited updates to the Dental Team page Unlimited minor text changes.	£250 set up fee £300 per year for hosting, domain name and maintenance Unlimited email addresses Extra pages are £75-£90 each.
Dental Design Limited http://www.dental-design.co.uk/	Bespoke service	Links to many examples of their work can be found on their website Offer a content management system (CMS) for people who want to update their own site Offer many Internet marketing strategies.	Prices on application Website management and search engine optimisation are charged at £50 per month.
Dental-Focus http://www.dental-focus.com/	Bespoke service	Links to many examples of their work can be found on their website Offer many Internet marketing strategies.	Prices on application.
Practice Box (Dentsure Ltd) http://www.practicebox.com/	9	Includes choice of 12 animated introductions Assistance with adding photos Subscriber makes text changes themselves Search engine optimisation Free poster and leaflets to promote website.	£620 per year for comprehensive website (up to 35 pages), hosting and domain name registration for co.uk. and .com £255 per year for budget website (up to seven pages), hosting and co.uk domain Also offer a bespoke design service.
PracticeGenie from Wrigley (Dentsure Ltd) http://www.practicegenie.com/index.php	No details available	Service limited to Wrigley OHA members Hosted on the Wrigley PracticeGenie server, therefore web address would be similar to www.practicegenie.com/sites/12345 .	Free, but Wrigley Orbit advert on every page and Orbit often mentioned in the patient advice pages Can upgrade the site for £99, £299 and £499 per year.
The Internet Marketing Company http://www.theinternetmarketingco.com	CMS service	Various interactive features available aimed at UK small businesses.	£195 activation fee and monthly fee from £25.

professional web design company, but at the end of the day, you get what you pay for. Just remember the quote from John Ruskin, the 19th century critic and author: 'It is unwise to pay too much, but it is worse to pay too little. When you pay too much you lose a little money – that is all. When you pay too little, you sometimes lose everything, because

the thing you bought was incapable of doing the thing it was bought to do. The common law of business balance prohibits paying a little and getting a lot – it cannot be done. If you deal with the lowest bidder, it is well to add something for the risk you run. And if you do that, you will have enough to pay for something better.'

Fig. 3 A screenshot from the Moonfruit website. It shows one of the stages involved in creating a website using their online tool, SiteMaker



Bring the content together

Before you can start creating a website you need to gather all the information that you want to include on the site. This normally takes the form of text and images. Aim the content at the sort of end-user you have in mind and think of the sort of information that they would want to find from your site. Keep in mind that the estimated reading age of the UK population in general is about 9 years.

Many companies will be happy to base your website on the information contained within your practice information leaflet; provide them with the original digital text and graphic files if you have them.

Most people have access to a digital camera or will be able to scan some existing photographs. Use an image-editing program, such as Picasa,⁹ Irfanview,¹⁰ Paint Shop Pro¹¹ or Photoshop Elements¹² to make the necessary adjustments to the images. Do an Internet search on the terms 'image optimization' to find out how to create images that will load faster from your website. There are many websites that provide free images for personal non-commercial use. For images to be used in the practice, try one of the free-to-use stock photography agencies (who normally just require that credit be given to the photographer) or purchase either royalty free images (once purchased, they can be re-used in different projects without paying an additional fee) or rights protected images (where you pay for each project in which the image is used). Details of such websites appear in the next chapter.

Select and register your domain name

For a personal website it is fine to use the domain name given to you by your ISP, for example <http://mysite.wanadoo-members.co.uk>

However, for a professional image, a dental practice should really register their own domain name, for example www.cosmetictooth.co.uk. The registration process is very quick and easy: go to a site such as simply.com¹³ or 1&t1,¹⁴ type in your proposed domain name to check that it has not already been taken, register the name and pay. Prices for a .uk domain are about £3 per year and about £9 for a .com address. Prices normally include website and email forwarding; this means that when a patient types www.cosmetictooth.co.uk into a web browser, the address will automatically be redirected to wherever your pages are stored, for example to your ISP at <http://mysite.wanadoo-members.co.uk/cosmetictooth>.

Create the design

Once you have a rough idea of the content, you can think about the overall design for the website. If you are using a template, then this will simply be a decision about how many pages you require and which template, colour scheme and font best suits your practice image. If you want to create a site from scratch then it is best to start with pencil and paper and draw out some ideas based on other websites (not necessarily dental) that you like the look of and you feel would work with your content. It is really no different from starting to design a kitchen with rough sketches and cutouts from magazine articles and adverts.

You can then communicate your design ideas to an outsourced web designer or start developing the first page yourself with some suitable software already mentioned.

Design the site navigation

How will people navigate around the website?

This is one of the most important features of a successful website and should be paramount when designing the overall look of the pages. Most web servers require the welcome page to be named something like index.html and from this page you would create hyperlinks to other pages on the website. Some pages may be 'daughters' of a particular page, for example you may require the user to click to a page entitled 'treatment options' which would contain links to pages 'fillings', 'crowns', 'bridges', 'dentures', 'implants' etc. All pages should contain a way of navigating back to the 'welcome' page, since someone finding a page from your site by using a search engine may be directed to a page deeply buried within the site. The design and navigation of a website are the key factors in good usability (Fig. 4). In a UK online survey of 2,500 adults, in-depth interviews and in-house qualitative research, YouGov found that 83% of respondents reported ease of navigation as being the most important factor in their 'ideal' website, with 62% rating high speed and 49% rating functionality as the other key factors. Eighty percent of people surveyed rated a clean and simple overall design as their most desirable design factor with only 6% wanting innovative use of flash and multimedia options.

Decide on the degree of multimedia and interactivity

All dental practice websites should contain images, but you need to decide on whether or not to include other elements such as a photo gallery, 360-degree panoramas, video, dental animation (eg Dental Zone¹⁵ web package for £25 per module), animated text and graphics, electronic welcome pack, automatic free feed of dental news items,¹⁶ blogger diary,¹⁷ web cam and speech/music. Some of these elements can make a website more attractive and interesting, but many may not be suitable for your particular practice and if done badly they can easily turn away potential users. Take into account that some people will still be using a modem connection, that users may have to download additional software in order to access the extra content and you may have to ensure that your hosting service supports these additional multimedia features.

Interactivity should include something as simple as an email hyperlink but could also include a form for prospective new patients to submit a request for an appointment, live online appointment booking, a feedback form, guest book, 'tell a friend' referral, discussion forum, a poll to a simple question, live patient support during working hours via a chat session, an online store for dental consumables, or the ability to request a regular copy of the practice newsletter to be sent by email. The same caveats apply to interactivity as they do to multimedia.

Compliance with current regulations and recommendations

Check that your proposed design and content complies with the following:

- **General Dental Council (GDC) guidance¹⁸**
The GDC no longer issue their detailed *Maintaining standards* guidelines, as these have been replaced by their broader *Standards for dental professionals*. However, some things to consider when creating a website include:
 - Only use the title 'specialist' if you are on the specialist register. Do not let a web design company imply possession of specialist status in terms that could mislead patients
 - Make sure that any external links only go to websites where you can be sure that the information is correct
 - Indicate whether or not the practice sees NHS patients
 - Maintain patient confidentiality
 - If the website is to contain advertisements, ensure that the products or services promoted are not in conflict with dentistry or the principles of health care.
- **Electronic Commerce (EC Directive) Regulations 2002¹⁹**
The main points related to dental practices include that a practice website should have details of:
 - The name and address of the practice(s)
 - The email address, telephone and fax numbers of the practice(s)
 - The name of each dentist at the practice, their professional qualifications and their country of qualification
 - Information about professional registration, including the dentist's GDC number, the address and contact details of the GDC and a link to the GDC website¹⁸
 - A reference that the dentist(s) adhere to the rules governing the profession (ie the *GDC Standards for dental professionals*).
 - There must be no comparison in the description of care given at the practice and at others or of skills or qualifications of dentists at the practice and at other practices
 - All changes in practice circumstances must be reflected in the website within one month of the change taking place (eg changes in dentists working in the practice)
 - Sites must make it clear when the page was last updated.
- **Disability Rights Commission (DRC)²⁰**
The DRC published a report in April 2004 entitled *The web: access and inclusion for disabled people*.²¹ Some of the suggestions include:
 - Provide a text equivalent for every non-text element
 - Ensure that foreground and background colour combinations provide sufficient contrast when viewed by someone having colour deficits (a large proportion of the country is red-green colour blind)

Fig. 4 Time spent in planning the overall design and navigation for a website is time well spent



- Ensure that pages are usable when scripts (eg Javascript), applets and other objects are turned off or not supported. If this is not possible, provide equivalent information on an alternative accessible page
- Ensure page titles are meaningful
- Use consistent navigation.
- **HON code of conduct**²²
The HON Code of Conduct for medical and health websites aims to raise the quality of healthcare information available on the web. It is a self-regulatory, voluntary certification system based on an 'active seal' concept. It addresses, among other things, the authority of the information provided, data confidentiality and privacy, proper attribution of sources, transparency of financial sponsorship and the importance of clearly separating advertising from editorial content.
- **Freedom of Information (FOI)**²³
The FOI Act was passed on 30 November 2000 and is intended to promote a culture of openness and accountability amongst public sector bodies by providing people with rights of access to the information held by them. Dental practices should have written their publication scheme by October 2003 (you can download a copy of the dental model publication scheme²⁴). The information can either be in the form of a printed hard copy available from the practice or, more conveniently, be kept on the practice website.

Decide on a host for your site and upload the files

Many of the web design companies include hosting of the site as part of the

package (although this is often just farmed out to another specialised hosting company). Another option would be to use the free web space that ISPs include as part of their membership. Both solutions have limitations on the total file size, but this is normally more than adequate for the average dental practice website. Complicated websites often require support for certain software to run and you need to check with the host as to whether or not this is available. Basic hosting suitable for small businesses costs about £4-£5 per month.^{13,14} Specialised hosting, which would normally include your own dedicated web server, would be overkill for most dental practice websites.

The finished website files are uploaded to the host web server using a process called file transfer protocol (FTP). Most ISPs will direct you to a web page that enables you to upload the files to your web space via the web browser. A quicker and more reliable (but not so user-friendly) way of uploading the files is to use a dedicated FTP program, such as WS_FTP.²⁵

ANNOUNCING YOUR WEB PRESENCE

There are four main aspects to getting your website known to existing and new patients:

- The first is promoting the existence and address of the site by printed media such as leaflets, posters, newsletters, the Yellow Pages, press releases, letter headed paper, appointment cards, receipts etc
- The second is directed towards people who are actively searching for your practice website in an online business directory, such as yell.com²⁶ or a dental directory such as the Dental Guide.²⁷ Many web directories will list your website for free,

but it is up to you or your web design company to register your details with the most popular directories

- The third method is to ensure that your website is ranked high on the first page of results from the major search engines. This is achieved by properly submitting details of the website and by better use of page design, HTML and meta tags. This service is offered by some web design companies and is called search engine optimisation.
- The fourth technique is to pay for your website to appear on the first page of results in a search engine. Most search engines accept paid listings, which means that your website will appear above or alongside the list of results for the keywords that you are interested in, for example 'London', 'dentist', 'implants'. Google, one of the most popular search engines, runs a scheme called Google Adwords,²⁸

where you only pay when a person clicks on your advert. It is possible to limit your 'advert' appearing to a certain geographical target audience. You will find a wealth of information about these issues on the Seoconsultants.com website.²⁹

Monitoring the website

Hosting services and ISPs normally provide statistics about the websites that they host as part of the package. These statistics normally give a report on how many pages have been visited over a period of time, the number of unique or returning visitors etc. Another way of monitoring the website is to ask new patients how they heard about your practice (eg Yellow Pages, 'word of mouth', website) and keep a monthly record.

Updating the website

Most web design companies allow you to make

WEBSITE CREATION AND MANAGEMENT JARGON EXPLAINED

Applet: a program, written in the Java programming language, that can be run from inside a web page, but is not limited by the functionality of HTML. Applets can display animation, perform database queries, or make other web page enhancements.

Ajax: asynchronous Javascript and XML is a web development technique for creating interactive web applications. Small amounts of data are exchanged with the server so that the entire web page does not have to be reloaded each time the user requests a change. It makes the web page feel more responsive.

Blogs: web logs that are updated regularly, usually on a daily basis. They contain information related to a specific topic and are commonly used as daily diaries about people's personal lives, political views etc.

CGI: common gateway interface. This interface sits on a web server, allowing it to execute other programs and incorporate their output into text, graphics and audio, which is then sent to a web browser. It allows developers to use programming tools such as Perl, C++ and Visual Basic so that users can look up database records, search sites, build counters, rotate advertising banners, handle forms and much more.

CMS: content management systems are software programs that allow non-programmers to update their web pages themselves. All they have to do is login, edit the text or graphics in a simple online editing page and click the save button once they have finished. Adobe Contribute⁹ is one example of a CMS and it costs about £125.

CSS: cascading style sheets. This is a mark-up language designed to control the presentation of text content across a series of web pages. It is possible to base all your text formatting on a single external CSS file so that there is absolute consistency across the website. Each web page looks to that file to see how its text should be formatted. Making changes to this one file can therefore change the appearance of the whole website.

Domain name registration: purchasing a unique domain name (web address) from an authorised registrar service. Once registered, the domain is exclusively yours to use provided you keep paying the annual fee of around £3-£10.

Flash: a program made by Macromedia/Adobe which is used to create compact interactive web pages by animating graphics, text and sound; it costs about £330 for the basic version. Many websites now use a Flash animation as their welcome page, however this can reduce search engine ranking. Another option is to buy the cheaper (and some say, easier to use) SwiSH Max Flash authoring tool for about \$99.

Hosting service: renting space for your website files on a special computer, called a web server. The web server is connected by a high-speed connection to the Internet, 24 hours a day. A low level hosting service comes free with most ISP packages.

Image optimisation: getting the right balance between file size and image quality. Simple logos, line drawings and shapes should be created as .gif files. Photographs should be cropped to keep the essential information, resized to the correct dimensions for use and compressed by 10-20%.

Javascript: a programming language. The code is placed inside the HTML of a web page and is executed by a javascript-enabled web browser. It can enhance the dynamics and interactive features of a page by enabling users to perform calculations, fill in forms, play interactive games, see special effects, use security passwords and much more.

Meta tags: part of the HTML code of a web page that describes the content of the page. The main components are the meta description and the meta keywords. The meta description is now more widely indexed by search engines than the meta keywords and gives you some control over the description of your page as it appears in the search engine results.

PHP: PHP: hypertext preprocessor. PHP is a scripting language that can be embedded into the HTML of web pages. Instead of the code being executed at the user's end (like Javascript), PHP is executed at the web server end and the results then sent to the user. It is widely used to support database-enabled web pages. Pages written with PHP need to be hosted on a server that has PHP installed.

Search engine optimisation: a process of making a website's content more search engine friendly. The aim is to get the site more highly ranked in as many major search engines as possible for relevant keywords.

SSL: secure sockets layer is a protocol that resides on a web server. A web server with a SSL digital server certificate of authenticity will encrypt data so that no one who intercepts it will be able to read it. It can prevent anyone from meddling with data going to or coming from the server and it can also stop unauthorised users from connecting to the server. It is commonly used on sites where sensitive data is stored or monetary transactions are carried out. A secure page can be recognised by a URL that begins with 'https:' instead of just 'http:' or by a message from the browser.

small text changes to the website as part of their package. Some companies offer a content management system (CMS), whereby you can make the changes yourself. If you have created your own practice website, you could buy your own CMS software to enable staff members with no knowledge of HTML to keep the site up to date.

I will finish this chapter with a quote from Michael Dell (Dell Computers): *'Show me a business that's not on the Internet, and I'll show you a business that's out of touch with the future.'*

1. Eternal Egypt website. <http://www.eternalegypt.org/>
2. HTML tutorial. <http://www.w3schools.com/html/>
3. AceHTML website design software. <http://freeware.acehtml.com/>
4. Coffee Cup website design software. <http://www.coffeecup.com/>
5. NetObjects Fusion website design software. <http://www.netobjects.com/>
6. Adobe/Macromedia software products. <http://www.adobe.com/uk/products/>
7. Moonfruit online SiteMaker. <http://www.moonfruit.com/>
8. Moonfruit demonstration dental website. <http://pdownes.moonfruit.com/>
9. Picasa image editing software. <http://picasa.google.com/>
10. Irfanview graphic viewer. <http://www.irfanview.com/>
11. Paint Shop Pro photo editing program. <http://www.corel.com/>
12. Photoshop Elements image editing program. <http://www.adobe.com/uk/products/photoshopelwin/>
13. Simply.com domain registration and web hosting. <http://www.simply.com/>
14. 1&1 web domain registration and web hosting. <http://www.oneandone.co.uk/>
15. Dental Zone patient education software. <http://www.dental-software.com/>
16. News4sites dental newsfeed. http://www.news4sites.com/newsfeeds/setup_js.php?etid=1138
17. Blogger.com. <http://www.blogger.com>
18. General Dental Council website. <http://www.gdc-uk.org/>
19. Department of Trade and Industry. Electronic commerce (EC Directive) regulations 2002. Statutory instrument 2002 no. 2013. <http://www.opsi.gov.uk/si/si2002/20022013.htm>
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22. The HON code of conduct for medical and health websites. <http://www.hon.ch/HONcode/Conduct.html>
23. NHS freedom of information website. <http://www.foi.nhs.uk/>
24. The freedom of information dental model publication form. http://www.foi.nhs.uk/downloads/064a_model_dental.doc
25. WS_FTP program. <http://www.ipswitch.com/>
26. The Yellow Pages online. <http://www.yell.com/>
27. The Dental Guide website. <http://www.dentalguide.co.uk/>