for lazy ones

Guth S. MD, Gangi A MD PHD, Imbert J.P. MD, Marin H. MD

Department of Radiology University Louis Pasteur Strasbourg

How to realize an electronic poster or presentation for lazy ones

Abstract: The aim of this exhibit is to describe the realization of an electronic poster presentation on html basis. We used windows or Linux operating system. Three different levels of complexity are presented for the realization of an electronic presentation. In all levels the presentation is written in html standard. The first level is simple but effective and needs Microsoft Office PowerPoint. The second level more sophisticated uses Macromedia Dreamweaver and Fireworks to create the presentation. The third level is technically difficult; it uses Zope as a multi-user web factory for creating dynamic database connected web sites. Each level is illustrated with examples and step per step description. It can be very easy to realize a simple electronic presentation in html with standard software like Microsoft office; however advanced design, database connectivity and some web-contents need more advanced methods.

How to read this poster:

- Level I: this part of the poster is made for physicians who never published web content. This part is independent from levels below and the poster may only be read at level I. This is for lazy ones
- Level II: this part of the poster is made for physicians who are not used to publish web content, but have already an experience of it. This part is more complicated
- Level III: this part of the poster is made for physicians who are already used to publish web content. This is only for crazy ones

# 1)	introduction

The Internet has changed the way of thinking in many fields. Applied to science, the Internet revolution has not been fulfilled yet. The coming trend is online publication over the Internet. This will require authors to move from paper photos, plain film images and conventional slides to Internet-compatible web pages. The ability to create web content may therefore be needed for scientific publications. The aim of this presentation is to provide this know-how. We have split the subject into three separate levels of difficulty, each independent of the others.

How to read this poster:

- Level I: this part of the poster is designed for physicians who have never published web content. This part is independent of the levels below and the poster may only be read at level I. This is for the lazy ones.
- Level II: this part of the poster is especially for physicians who are not used to publishing web content, but already have some experience in it. This section is more complicated.
- Level III: this part of the poster is aimed at physicians who are already used to publishing web content. This is especially for the crazy ones (you know who you are).

# 2)	Digitizing educational material

1. Text:

The text is usually already in digital form as a Microsoft Word file or PowerPoint presentation or as a text file from other office programs. It is therefore easy to export the text as web content. Simply use the copy and paste command to import these files into any web composer.

2. Images:

Images can be photos or plain film or CT, ultrasonography, MRI, scitigraphy films. All this material must be converted to jpg or gif image files. The conversion may be easy if the files are already in digital Dicom form. Free image manipulation programs like Image J are able to convert Dicom into jpg or gif files. If the images are analog, e.g. films, digital cameras or scanners can be used to reproduce the images in digital form as jpg image files. We use digital cameras (Nikon Coolpix 995 to 5000) for pictures of material and interventional procedures. We use the same cameras for CT, ultrasonography, MRI films. Some plain old film X-ray images need to be converted into digital form with a scanner but this procedure takes more time.

3. Other material:

Video films also have to be converted into digital files. New compression standards have drastically reduced the size of these digital movies. These standards are MEPG4 and DIVX. Only these compression techniques have made it possible to publish good quality video material on the internet. The video editing tools we use for movies are Adobe Premiere and Virtual Dub. DIVX or MEPG4 compression codec are needed by the computer operating system to produce and to play such movies. These tools are able to produce high quality movies. Soundtracks can be published on the web by using the popular MP3 compression standard. 3D models can be published on the web, e.g. in VRML standard.

Figure 1a. Computer, PC station.

Figure 1b. Digital camera.

Figure 1c. Scanner with transparency adapter.

3) the web standarts

HTML

Web pages are so-called hypertext pages. Their appearance, text and image content is defined by a so called "HyperText Markup Language" or HTML. The following text is in HTML and the output of these HTML lines read by a web navigator like MS Internet explorer is what you are actually reading.

```
<html>
<head>
<title>The web standards</title>
<meta http-equiv="Content-Type"
content="text/html; charset=iso-8859-1">
</head>

<body bgcolor="#FFFFFF" text="#000000">
<p>HTML</p>
<p>Web pages are so called hypertext pages,
their appearance text and images content  is
defined by a so called &#147;HyperText Markup
Language&#148; in short HTML.
</p>
</body>
</html>
```

Figure 2b. These few HTML lines, read by a web navigator, will look like the above displayed text.

Images

Images are displayed as JPEG or GIF files. GIF and JPEG are compressed images, compression allowing shorter files; they can be transmitted faster by the net. These image file formats are used for the internet because people don't like to wait for the graphics to load.

Figure 2a. Vertebroplasty JPEG image, quality 80%, smoothing 2, size 6.89k, Load time 2sec at 128kbps (kilobytes per second).
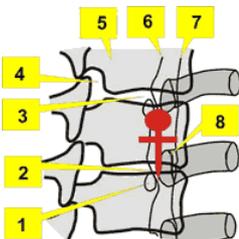

Figure 2c. Vertebroplasty under fluoroscopy, drawing, GIF image, 16 colors, size 6.88k, load time 2sec at 128kbps (kilobytes per second).

4)   level II images

Images

Image formats commonly used for web content are JPG or GIF. GIF and JPEG are compressed images viewed through any web browser. The GIF and the JPEG are used because they are small and are therefore quicker to load on the internet. Below are some differences between GIF and JPEG graphic image format types:

GIF:

- Means Graphics Interchange Format
- GIF is a "lossless" compression algorithm
- Limited by 256 indexed color (so called 8-bit color)
- Uses a variant of the Lempel-Ziv Welch compression algorithm LZW
- Does not work well with images created using HIGH COLOR depth.
- Best to use for few colors; line art graphics
- Other characteristics specific to GIF relate to ANIMATION and TRANSPARENCY

GIF is a lossless compression scheme. This means that nothing is lost when the GIF is saved. What is meant by GIF animation? GIF Animation is a GIF based movie format. 24 GIF images are displayed per second creating an animation like those in a cartoon movie (see Figure 3c). These animations are quicker to load because of their size. Like the GIF pictures, these are good for the internet because people don't like to wait for the graphics to load.

JPEG:

- Means Joint Photographic Experts Group
- JPEG is a "lossy" compression algorithm
- Supports 24-bit called TRUE COLOR Variable and high compression levels
- Best used on high quality images without distinct edges and gradual color changes
- Difficult to edit
- Every time a JPEG is saved, it loses quality

JEPG is used mostly for high quality images without distinct edges and gradual color changes. JPEG is "lossy", meaning that the decompressed image isn't quite the same as the one you started with. (There are lossless image compression algorithms, but JPEG achieves much greater compression rate than possible with a lossless methods). JPEG is designed to exploit known limitations of the human eye, notably the fact that small color changes are perceived less accurately than small changes in brightness. Thus, JPEG is intended for compressing images that will be looked at by humans. JPEG works by converting the spatial image representation into a frequency map. A mathematic function (Discrete Cosine Transform) separates the high- and low-frequency information present in the image. The high frequency information is then selectively discarded depending on the quality setting. The greater the compression level, the greater the degree of information loss. Data is lost each time a file is JPEG encoded, depending on the smoothing and compression level, but also at the highest quality levels. The data loss can be set to a minimum and is usually invisible to the human eye. The data loss may therefore only be a problem if the files are encoded many times (see Figure 3d-e) or if you plan to machine-analyze your images.

Figure 3a. Logo, GIF, image matrix 100*100 pixels, border index transparency, 64colors, size 5.76k, load time1sec at 28 kbps (kilobytes per second).
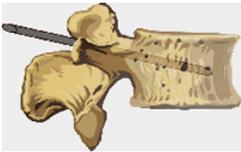

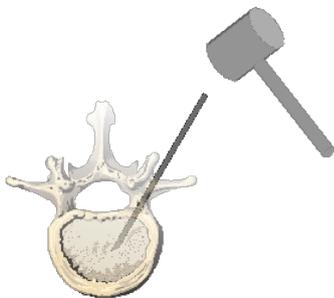Figure 3b. Drawing, GIF, 32colors, size6.5k, load time 2sec at 28 kbps (kilobytes per second).

Figure 3c. Animated GIF, vertebroplasty puncture.

Figure 3d. Picture, JPEG, quality 80 %, smoothing 0%, 24bitscolor, size9.18k, load time 2sec at 28 kbps (kilobytes per second).

Figure 3e. Image degradation example: same picture as above after 50 JPEG encoding processes (quality 60% smoothing 20%).

5) level II langages

The hypertext languages

1. The HTML language

Before becoming what HTML is, the Web began at CERN (European Center for Nuclear Research) where Tim Berners-Lee developed and utilized HTML with the client software to enable information sharing on a multi-platform network. HTML was specifically developed to use along with the HyperText Transfer Protocol (HTTP) to encode documents for display on the World Wide Web. HTML stqnds for HyperText Markup Language. HTML is the lingua franca for publishing hypertext, which means web pages, on the World Wide Web. It is a non-proprietary format, and can be created and processed by a wide range of tools, from simple plain text editors to sophisticated WYSIWYG authoring tools (What You See Is What You Get). HTML is defined in the HTML Standard, currently Version 4.0x. HTML standards are recommended by the World Wide Web Consortium, W3C. HTML is a markup language which means that it is NOT a programming language. HTML cannot be used to write programs. The term "markup language" is a term that orginated in the publishing industry. When an editor uses a blue pencil and makes a paragraph mark he or she is using another form of a markup language. The symbol < p > is an example of the HTML "tag" used to begin a paragraph. These few HTML lines, read by a web navigator, will look like the paragraph displayed below.

--------------------- HTML ---------------------

< P class = h 2 >2. The new languages< /P > < P class = p >

< P class = p >Further improvements of HTML are XML, XHTML, DHTML langages : The Extensible Markup Language (XML) family is the new universal format for structured documents and data on the web. The main improvement of this new language family is its ability to communicate with databases. < / P >

--------------------- END ---------------------

As you can see, the contents of the page, the English language text, in not separated from the content HTML language. That means both languages are needed to write HTML hypertext web pages. Therefore creating web pages may be difficult for physicians who don't usually have any experience of HTML. To resolve this problem we propose to use

Microsoft PowerPoint or WYSIWYG web editors (What You See Is What You Get) or Zope to create web pages. Microsoft PowerPoint and WYSIWYG web editors are able to generate the HTML code automatically. In Zope thing are more subtle: the content is split from the contents making it possible to write simple text.

2. The new languages

Further improvements of HTML are XML, XHTML, DHTML langages: The Extensible Markup Language (XML) family is the new universal format for structured documents and data on the web. The main improvement of this new language family is its ability to communicate with databases.

```
<html>
<head>
<title>percutaneous vertebroplasty</title>
<meta http-equiv="Content-Type"
content="text/html; charset=iso-8859-1">
</head>

<body bgcolor="#000099" text="#FFFFCC"
link="#FFFF00" vlink="#FFFFCC"
alink="#FFFF00">
<table width="100%" border="0" height="100%">
 <tr align="center" valign="middle">
    <td rowspan="3" width="17%"><img
src="../g-buttons/2.jpg" width="180"
height="70"></td>
    <td rowspan="3" width="63%"><img
src="../g-buttons/3a.jpg" width="450"
height="70"></td>
    <td rowspan="3" width="20%"><img
src="../g-buttons/1.jpg" width="70"
height="70"></td>
  </tr>
  <tr> </tr>
  <tr> </tr>
</table>
</body>
</html>
```
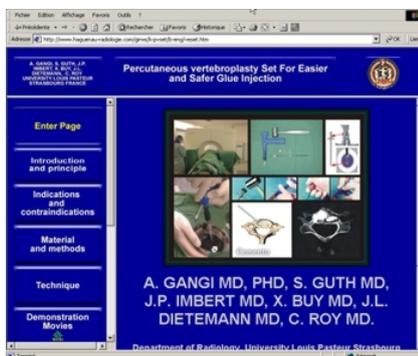
Figure 7a. HTML code hypertext Page

Figure 7b. The same above HTML page displayed by MS Internet explorer

6)   dreamweaver

Creating web pages with Macromedia Dreamweaver

We created all our electronic posters for RSNA 1999, 2000 and 2001 and two Radiographics electronic journal topics (Interventional musculoskeletal procedures and percutaneous vertebroplasty) with Macromedia Dreamweaver
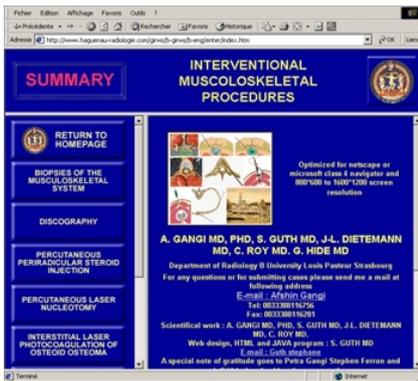
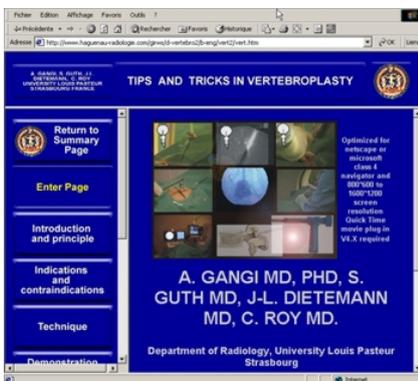Figure 9a. Entry page, poster for RSNA 1999, created With Macromedia Dreamweaver.

Figure 9b. Entry page, poster for RSNA 2000, created With Macromedia Dreamweaver.

What is Macromedia Dreamweaver

Macromedia Dreamweaver is a professional HTML editor for designing and managing Web sites and pages. It is a so-called WYSIWYG = What You See Is What You Get editor. This means that it enables direct visual edition of web pages. That feature permits edition of web pages without extensive knowledge of the html web code language. The code is automatically written by the editor. However it remains complicated to use for anyone who isn't familiar with html.

level II how to

how to use Dreamweaver

The Dreamweaver work area accommodates different styles of working and levels of expertise. Here are some of the most commonly used components:

- The "Document" window (see Figure 10a.) displays the current document as you create and edit it.
- The "Launcher" bar (see Figure 10e.)at the bottom right of the Document window contains buttons for opening and closing your most frequently used inspectors and

panels. The icons on the Launcher bar also appear on the Launcher, a floating panel that you can choose from the Windows menu. You can specify which icons appear in the Launcher bar and Launcher by setting Panels preferences.

- The toolbar contains buttons and pop-up menus that let you view the Document window in different ways, set view options, and access some common operations, for example, previewing in a browser.
- Context menues let you quickly access useful commands pertaining to the current selection or area. To display a context menu, right-click (Windows) or Control-click (Macintosh) an item in a window.
- The "Objects" panel contains buttons for creating and inserting various types of objects, such as images, tables, layers, and frames. You can also switch between "Standard" and "Layout" view and access the Layout view drawing tools.
- The Property inspector (see Figure 10d.) displays properties for the selected object or text, and lets you modify those properties. (Which properties appear in the inspector depend on the object or text selected.)
- Dreamweaver provides many other inspectors, panels, and windows not shown here, such as the "History" panel and the "Code" inspector. Many of these items can be "docked"—that is, you can combine windows, inspectors, and panels into tabbed windows.
- The Launcher bar contains buttons for opening and closing various panels, windows, and inspectors. You can also display the Launcher, a floating panel with identical buttons.
- The site map (see Figure 10c.). Use the site map to view a local site as a visual map of linked icons, to add new files to a site, or to add, modify, or remove links. The site map is ideal for laying out a site structure. You can quickly set up the entire structure of the site and then create a graphic image of the site map.
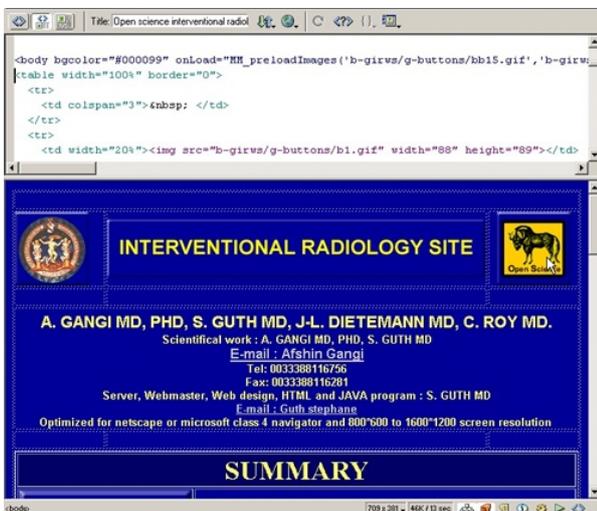

Figure 10a. Dreamweaver screenshot: document window, displays the current document as you create and edit it.
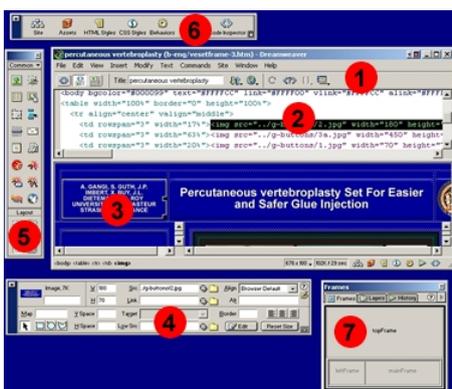
Figure 10b. Dreamweaver screenshot: 1 document window, 2 HTML code view, 3 WYSIWYG editor view, 4 Property inspector, 5 object panel , 6 launcher bar, 7 context menu on frames.
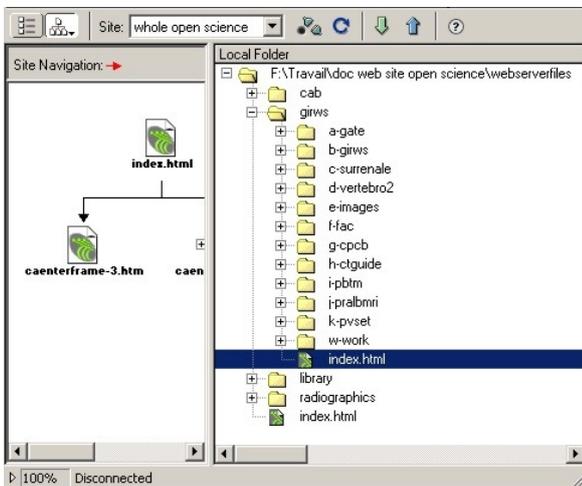

Figure 10c. Dreamweaver screenshot: the site map. Use the site map to view a local site as a visual map of linked icons, to add new files to a site, or to add, modify, or remove links.

Figure 10d. Dreamweaver screenshot: the property inspector displays properties for the selected object or text, and lets you modify those properties.

Figure 10e. Dreamweaver screenshot: the launcher bar at the bottom right of the document window contains buttons for opening and closing your most frequently used inspectors and panels.

7)   level III howto how to design web pages

Setting document properties

Page titles, background images and colors, text and link colors, and margins are basic properties of every HTML document. The page title identifies and names the document. A background image or color sets the overall appearance of the document.

Page layout

Even for the visual editing process you will needs to know the method used by the HTML language to place text and image in a page. Page layout is an important part of Web design. The term page layout refers to the way your page will look in the browser, such as where a menu or images will go. Macromedia Dreamweaver gives you several different ways to create and control your Web page layout.

There are tree methods to organize a page

- HTML tables
- Page Layers
- Page Frames

Tables

One common method for creating a page layout is with HTML tables (see Figure 11a to e.).   Tables weren't originally created for Web page layout, but for displaying tabular data. Creating transparent (Border = 0) tables is an easy method to organize a page's structure. Tables are an extremely powerful tool for laying out data and images on an HTML page. Tables provide Web designers ways to add vertical and horizontal structure to a page.

Tables consist of three basic components:

- Rows (horizontal spacing)
- Columns (vertical spacing)
- Cells (the container created when a row and column intersect)

Use tables to lay out tabular data, to design columns on a page, or to lay out text and graphics on a Web page. Once you create a table you can easily modify both the appearance and the structure of the table. You can add content; add, delete, split, and merge rows and columns; modify table, row, or cell properties to add color and alignment; and copy and paste cells.

Layers

The second method is to create Layers. To simplify the process of using tables for page layout, Dreamweaver provides Layout view. In Layout view, you can design your page using tables as the underlying structure, but avoid the traditional pitfalls of using tables. For example, you can easily draw cells (table cells) onto your page, then customize and move the cells where you want them. Your layout can have a fixed width, or it can grow to fill the browser window.

Frames

Frames (see Figure 11f to g.). are used in a Web page to divide it into multiple HTML pages. For example, our entry Web page consists of three frames. One thin frame on the side that contains a scrolling menu, one frame that runs along the top that contains the logo and title of the Web site, and one large frame that takes up the rest of the page and contains the main content. Each of these frames is an independent HTML page. They all work together on the page through the use of one or more framesets, which is an HTML page that defines the structure and properties for the Web page, including information about the number of frames displayed on a page, the size of the frames, the source of the page loaded into a frame, and other definable properties.
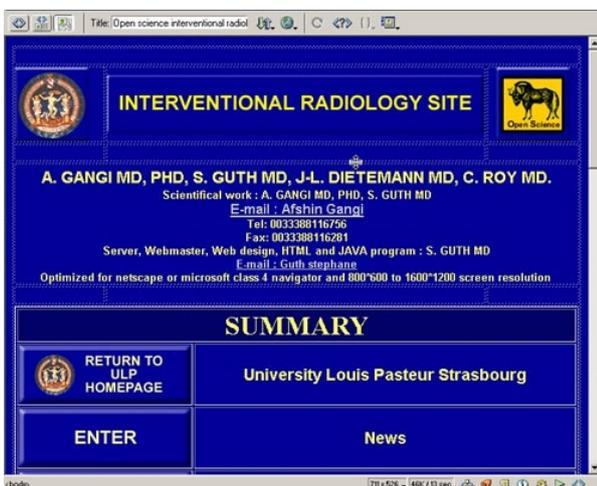
Figure 11a. Dreamweaver Editors WYSIWYG window screenshot: creating transparent (Border = 0) tables is an easy method to organize a page's structure. Transparent tables are visible as small lines on this document.
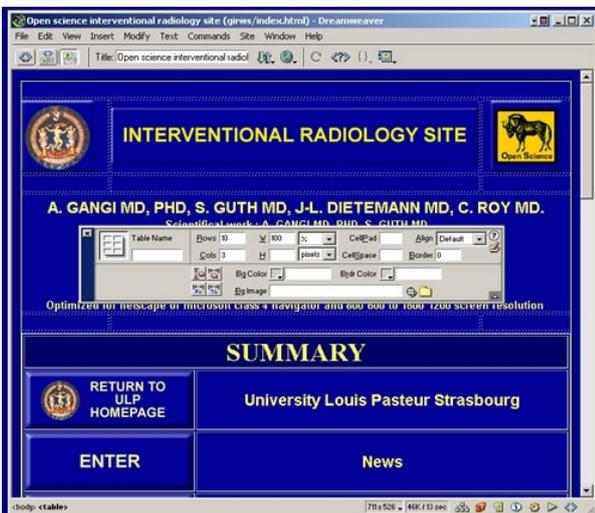

Figure 11b. Same Dreamweaver Editors WYSIWYG window screenshot as above: transparent tables are visible as small lines on this document. The property inspector popup window is focused on table properties.
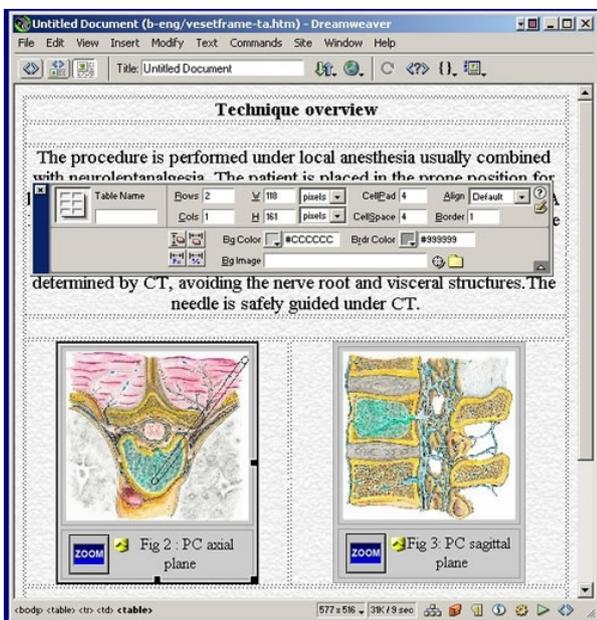

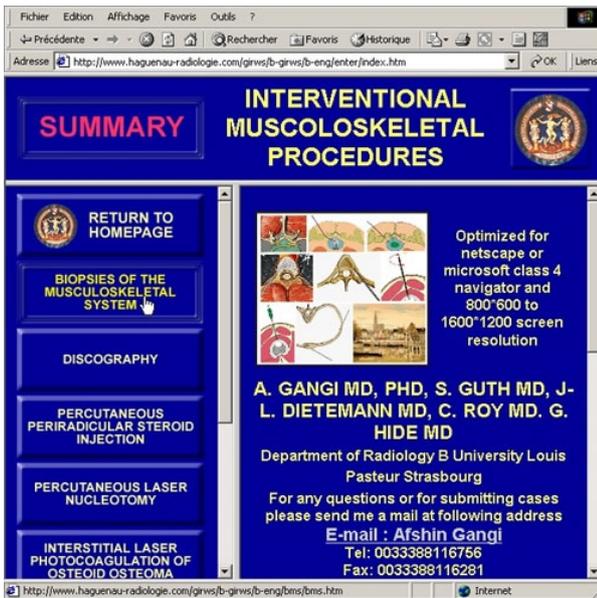Figure 11c. Internet explorer screenshot: a document page.

Figure 11d. Screenshot of the same page as above but as seen in Dreamweaver Editors WYSIWYG window: transparent tables organize the page and are visible as small lines on this document.
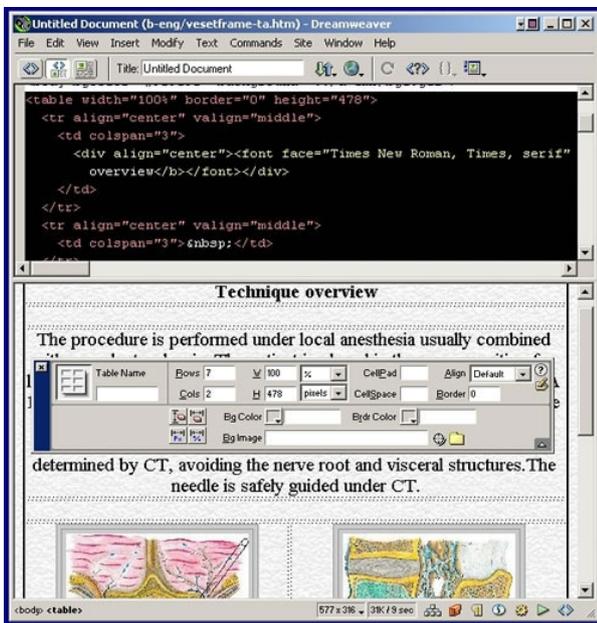

Figure 11e. Dreamweaver Editors and HTML window screenshot: same page as above. Transparent tables are visible as small lines on this document. The property inspector popup window is focused on table properties. The HTML code appears over the Editors WYSIWYG window
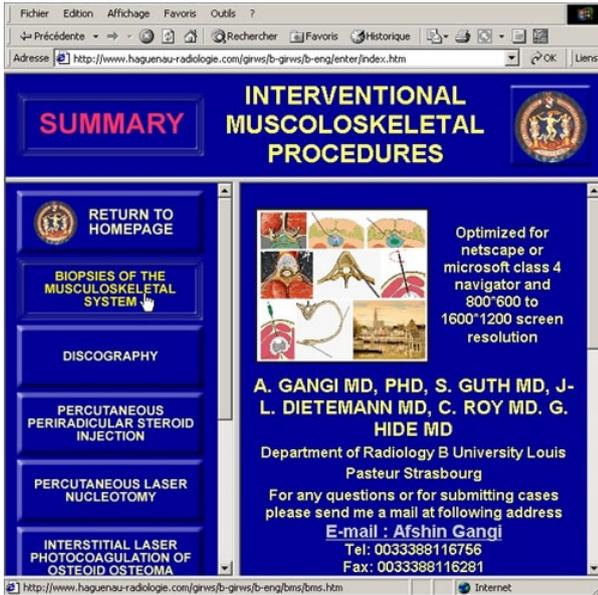
Figure 11f. Internet explorer screenshot: an entry page with 3 frames (top, left, right) page.
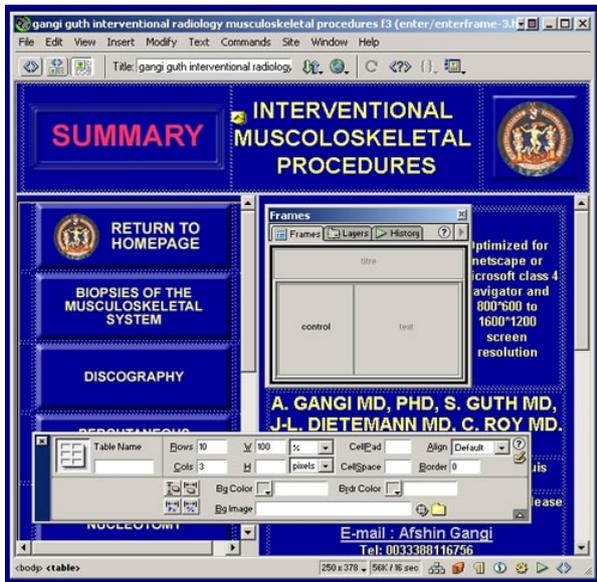

Figure 11g. Screenshot of the same page as above but as seen in Dreamweaver Editors WYSIWYG window: 3 (top, left, right) frames organize the page. The property inspector popup window is focused on frame properties.

8)   PowerPoint

Creating web pages with PowerPoint

Publishing a PowerPoint document as web file makes it accessible to those you want to view the presentation with a Web browser. Microsoft PowerPoint 2002 like other Office suites has now a Web format saving option.

How it works

When you publish a presentation, a copy of it is created in a file location you choose. When a PowerPoint presentation is exported to web content, all components of the presentation text, fronts, images are converted into their web equivalent. Text is converted into HTML, images into GIF or JPG, XML files are used to store data. The important point is all this is done fully automatically and does not therefore require any kind of web edition knowledge.

 how to do it

Creating presentations

Creating a presentation in Microsoft PowerPoint involves starting with a basic design; adding new slides and content; choosing layouts; modifying slide design, if you want, by changing the color scheme or applying different design templates; and creating effects such as animated slide transitions.

Preview a presentation as a Web page

On the File menu, click "Web Page Preview". This opens your presentation in your default Web browser.

Publish a presentation on the Web

If you want others to have access to your Web presentation, you must specify a Web server or other available computer when you choose a location for the file.

- Open the presentation or Web page you want to publish on the Web.
- On the File menu, click "Save as Web Page".
- In the File name box, type a name for the Web page.
- Set the page title bar text for your Web page.
- Click "Publish" and do one or more of the following:
  - To specify the slides you want to publish, under "Publish what?", select an option.
  - To optimize for a particular browser or browser version, under "Browser support", select an option. To display speaker notes for a presentation, under "Publish what?" select the "Display speaker notes" check box.

- To set additional Web page formatting and display options, click "Web Options," select the options you want, and then click "OK".
- In the "File name" list, select a location and type a name for the Web page.
- Click "Publish".

9) the results

The results of publishing a PowerPoint presentation on the Web

You can publish from a presentation that is in .ppt format as a Web page that can be viewed by a web browser.   When you publish your presentation on the Web or save it as a Web page, your presentation automatically includes the following:
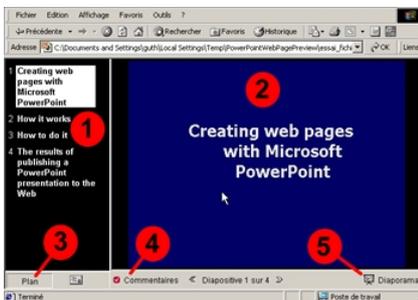

Figure 8a. The results of publishing a PowerPoint presentation on web pages.

1 A navigation frame, which is the outline of the presentation.

2 A slide frame.

3 A control for showing or hiding the outline of the presentation.

4 A control for showing or hiding the notes pane.

5 A full-screen viewing option, which hides the browser controls and is similar to slide show view in Microsoft PowerPoint. If you have custom shows in your presentation, they can be viewed only in full-screen mode.

Publishing option

Publishing option

Show slide animations during a Web presentation

Use this procedure to allow viewers of Web presentations to see slide animations when they use Microsoft Internet Explorer 4.0 or later.

- Open the presentation you want. On the File menu, click "Save as Web Page".
- Click "Publish", and then click "Web Options".
- On the General tab, select the "Show slide animations" while browsing check box.
- Publish the presentation on the Web.

Web presentations for different browsers

By default, when you save or publish a Web presentation, the file is saved in HTML format that is optimized for Microsoft Internet Explorer 4.0 or later. This format provides the best fidelity, fastest performance, and smallest file size. However, if your Web presentation will be viewed by people who use Internet Explorer 3.0 or any version of Netscape Navigator, you can select options when you publish the presentation that will allow viewers using these browsers to view your presentation. I f you optimize for Internet Explorer 3.0 or any version of Netscape Navigator, consider the following:

Animations, including slide transitions, are not supported
- GIF pictures might not be animated
- The slide isn't scaled to fit the browser window ; it stays at a fixed screen resolution based on the screen size setting selected when you published the presentation.
- The presentation cannot be viewed full screen.
- You cannot open or close frames.
- The active slide title is not highlighted in the outline pane. T
- The mouse does not highlight elements in the outline pane.
- Sounds and movies do not play.
- Some graphics will not look as good as they do in Microsoft Internet Explorer 4.0 or later.

10) zope

Creating a web site with Zope

We created the electronic posters for RSNA 1999, 2000 and 2001 with Dreamweaver. We created With Zope the electronic posters for RSNA 2002. This was a fully new way of doing things for us. Not only was the interface new but the way of doing it. With conventional HTML editors, as illustrated in the drawings below, pages are composed on a local workstation by one author, images, text or comments can eventually be provided by mail or FTP. With the Zope server pages are composed fully and only on line through a simple web navigator. All co-authors work remotely connected to a single server through the internet. Many co-authors can edit the same or different pages at the same time. All posters are only stored on the Zope server. Our Zope server is running on a single PC connected to the Internet. The server's operating system is SUSE Linux. Zope server version 2.5.1 (Python2.1.3 based) is used accelerated by an apache HTTP proxy and web server. All these tools are Open source software. The authors used MS windows PC or Macintosh with MS Internet Explorer to access the server through the internet. All co-authors have high-speed (Cable or DSL) internet connection at work and at home.
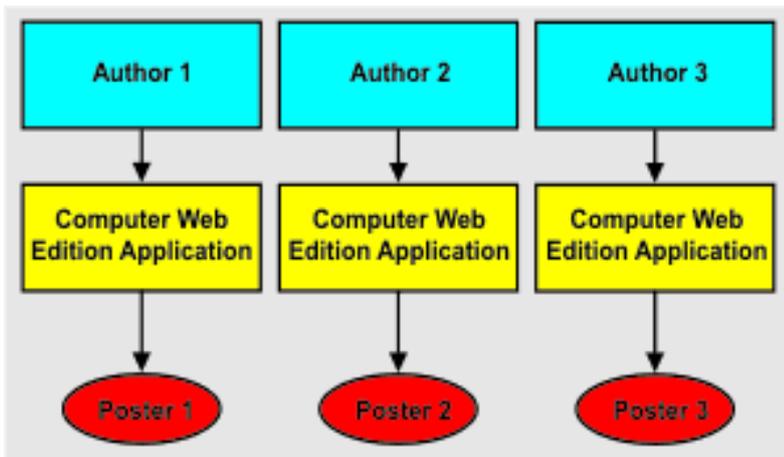
Figure 15a. With Dreamweaver pages are composed on a local workstation by one author.
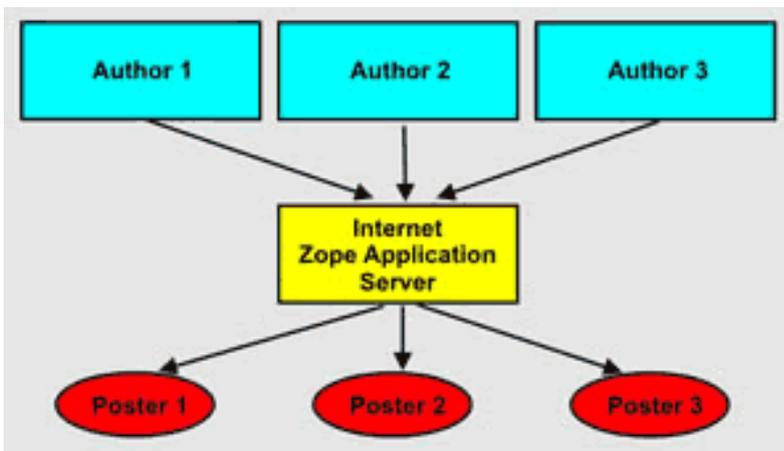

Figure 15b. With our Zope server pages are composed fully and only on line through a simple web navigator on a single server.

what is Zope ?

Zope is a so called Application server. This means that Zope is a framework for building web applications. A web application is a computer program that users access with a web browser over the Internet. You can also think of a web application as a dynamic web site that provides not only static information to users but lets them use dynamic tools to work with an application. Zope consists of several different components that work together to help you build web applications. Zope is open source. This means that not only is Zope

free of charge to download, but you are also free to use Zope in your own applications without paying royalties or usage fees.

Figure 16a. The Zope logo.

level III what exactly is Zope ?

The question of what exactly is Zope caused me to have severe headaches that disappeared only when I became enlightened and I understood what could be achieved with it.

Zope is mostly written in Python. Python is an interpreted, interactive, object-oriented programming language. It is often compared to Tcl, Perl, Scheme or Java.

Zope consists of several different components that work together to help you build web applications. Zope comes with:

- A Web server: Zope comes with a built in web server that serves content to you and your users. Of course, you may already have an existing web server, such as Apache. Not to worry, Zope works with these web servers also, and any other web server that supports the Common Gateway Interface (CGI).
- A Web based interface. When you build web applications with Zope, you use your web browser to interact with the Zope management interface. This interface is a development environment that lets you do things like create web pages, add images and documents, connect to external relational databases and write scripts in different languages. Zope's management interface provides a simple, familiar way to manage objects that resembles the way many common file managers work.
- An object database. When you work with Zope, you are mostly working with objects that are stored in Zope's object database
- Relational integration with other databases. You don't have to store your information in Zope's object database if you don't want to, because Zope works with other relational databases such as Oracle, PostgreSQL, Sybase, MySQL and many others.
- Scripting language supports. Zope allows you to write web applications in a number of different languages, like Python, Perl, and Zope's own Document Template Markup Language (DTML).

Perhaps Zope's best feature of all is its friendly, open source license. This means that not only is Zope free of cost to download, but you are also free to use Zope in your own applications without paying royalties or usage fees. Zope's open source license also means that all of the "source code" for Zope is available for you to look at.

Zope History

In 1996 Jim Fulton, the CTO of Zope Corporation and Python guru wrote the core of Zope. Zope is still mostly written in Python with a few performance-critical sections in C. In

November of 1998, investor Hadar Pedhazur convinced Zope Corporation to open source Principia. This became Zope.

creating web pages with zope

With our Zope it is easy to handle the content of the pages of the web site. Authors don't need any knowledge of web coding and work with the content in an interface similar to an ordinary word processing program. Zope shows the whole page with all the graphic elements included and in that way they get an idea of what the complete page will look like, while they are working on it.

Using Zope's visual Editor for a document

The document can be edited directly in the web browser, using the edit form. One thing to note is the highlighted edit tab at the top of the page. Messages appear at the top of this page, as shown below.
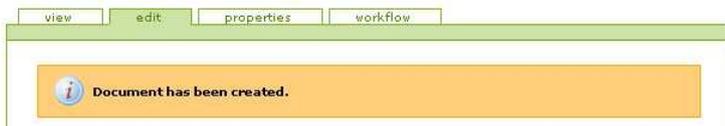

There are four fields for a document:
- Name: This identifier will become part of the document's web address. It should be short, descriptive and contain no underscores or mixed case. For example, "audit-report-2003". If you do not provide a name, Plone will create one for you.
- Title: This item will be shown at the top of the page, in the breadcrumbs, in the search interface, in the title of the browser and so on. This field is required.
- Description: This is a short lead in to the document - usually no more than 20 words - to introduce the document and provide a teaser for the remainder of the document.

Screenshot of our Open Science Zope Edition view window.

Edition visual interface: This field contains the document.
- Add text: To add text you click with the pointer at the place where you want to insert the text.
- Do you want to paste text from another document such as a Word document? It works
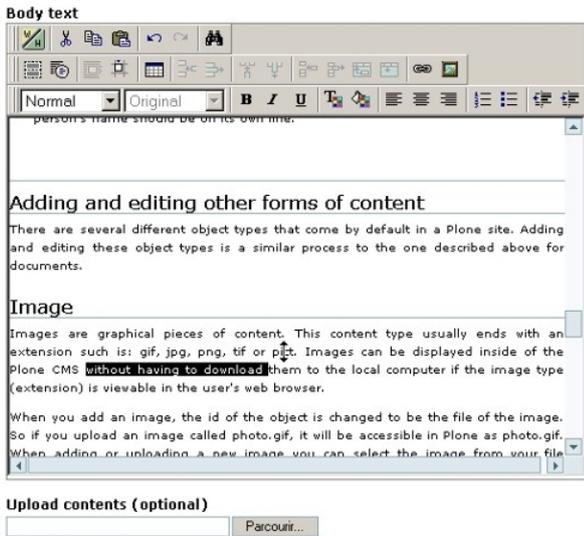
Screenshot of our Open Science Zope Visual Edition view window.

- Add image: To insert an image on the page. Place the pointer where you want the image to be. Choose the Image icon in the upper menu to open the Image dialog box.
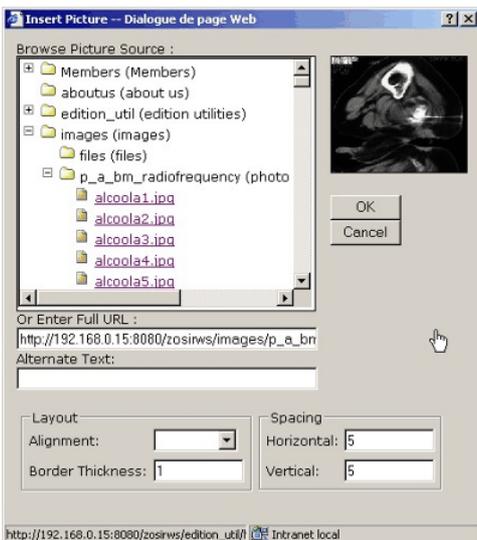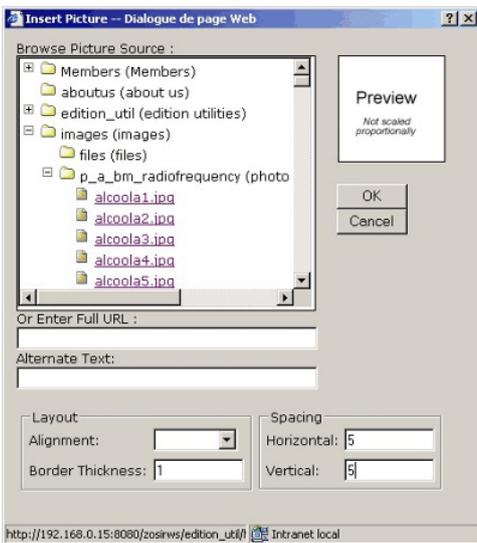
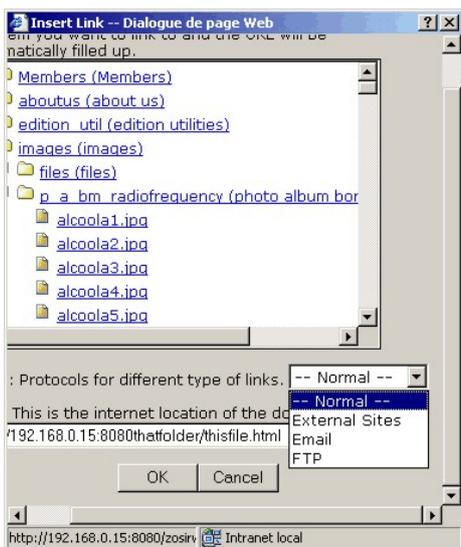Screenshot of our the Image dialog pop-up box.

- Add link: Mark the word or phrase you want to link. Click on the link icon and a link dialog box will appear. Use the link dialog to create internal and external links, e-mail links.

Screenshot of our the Link dialog pop-up box.

11) results

We created With Zope all the electronic posters for RSNA 2002 including this one.

- Education Exhibit: Space 0094CE-e Percutaneous Vertebroplasty: Indications, Advantages and Drawbacks of Different Cements
- Education Exhibit: Space 0093CE-e Radiofrequency Ablation of Bone Metastases
- Education Exhibit: Space 0017CE-e Imaging of the Diaphragm

I made this one, but the other three were made by physicians who are not used to publishing Web content. An internal help system was provided. All images we used were already stored on the Zope database. The authors sent me their images on the server, I formatted and optimized them for Web publishing and put them on the Zope server image database. My own mailbox served for advice and bug report. They build up their presentation through the Internet, writing directly on the server, using a simple navigator. We used Zope's collaborative working capacities over the internet to correct mistakes and to improve design. Our Zope system proved to be an efficient and reliable edition tool, most of all because the system is simple to use. As we saw it works, we decided to move

our whole web site to Zope. Another main advantage of this system is all our image databases will soon be stored on one server and will then be accessible through our Zope server for edition.

12) discussion

It is clear that the future of knowledge and science will be online publishing. For this we have to find suitable tools. These tools must own many properties: simplicity of use, efficiency, collaborative on line possibilities, advanced design possibilities, reliability, and database connectivity.

Microsoft PowerPoint like other Tools with Web Format Saving Option is able to produce web content. It is easy to use, known by everyone. It has collaborative on line possibilities, although difficult to use. It is reliable. The main drawback of such a tool is the lack of any basic or advanced web design possibility. As the presentation is exported its appearance will be automatically adapted for the web without any design choices. Another drawback is the lack of any database connectivity.

Office suites and Tools with Web Format Saving Option:

- Microsoft PowerPoint Microsoft Word
- Corel word perfect
- Sun Star
- Office Adobe Acrobat
- source: The World Wide Web Consortium (W3C) http://www.w3.org/

WYSIWYG (What You See Is What You Get) HTML Editors are able to produce web pages with high value graphical design. With help of an ftp server, collaborative on line work can be very easy on a web site with such editors. These Editors are reliable. T he drawback of such a tool it's extreme complexity of use. Only a few medical doctors use Macromedia Dreamweaver. To edit pages, some knowledge of web technology is required. Advanced design needs an extensive knowledge in HTML and JAVA language. Advanced graphics needs moreover a good knowledge of image editors like Fireworks, Gimp or Adobe photoshop. Database connectivity is possible but would need additional complex PHP scripts.

WYSIWYG (What You See Is What You Get) HTML Editors and Site Authoring Tools:

- Microsoft FrontPage
- Allaire's HomeSite
- NetObjects Fusion

- Macromedia DreamWeaver
- SoftQuad HoTMetaL
- IBM WebSphere
- Studio Homepage Builder
- Adobe GoLive
- Open source Amaya
- source: The World Wide Web Consortium (W3C) http://www.w3.org/

The setup of our Zope publishing interface was long and difficult. First we had to build up the Zope server with all the required libraries. Then we had to add to the Zope base system many add on products. We had to create all utilities (templates, menus) that would suit our needs. All this requires extensive knowledge of Zope, PYTHON, HTML and DHTML language. However once set up, the publishing system proved to be very easy to use for the authors. The interface uses MS Internet explorer web browser to log in. It is simple to use: beginners understand usually quickly how it works. It is very simple to publish web content with it, no extensive knowledge is needed. It works like an office text utility. All four computer presentations that we present at RSNA 2002 are made with our Zope server. I made this one, but the other three were made by physicians who are not used to publish web content. T hey build up their presentation at work or at home through the internet, connecting to our Zope server, writing directly on the server. We used Zope's collaborative working capacities over the internet to correct mistakes and to improve design. I t is possible to create web pages with high value graphical design with Zope, by writing DHTML pages (the hard way), or by using WYSIWYG HTML Editors inside Zope (the easy way). Once created these pages can very easily be used by any user without any experience of WYSIWYG HTML Editors. Zope can be used with databases. It has its own database. The drawback can be reliability. Our Zope server showed some minor bugs, it is not a problem for 4 users but it could become one with more users. Another drawback of Zope server is speed, our server is long to display the pages especially in edition mode. Zope is a so called Application server, but other application servers could be used.

Application server and language that could be used for web editing systems:

- ASP-JSP commercial servers like: Macromedia Cold Fusion, IBM Websphere, Netscape Application Server, Oracle Application Server, Borland's JBuilder, using usually a java language.
- Apache Open source HTTP server or others server with mod_PHP, using PHP Open source language. This architecture is actually used for the EPOS European congress of radiology digital poster system.
- Zope open source server, using Python language (eventually pearl with an Apache server).

13) conclusion

WYSIWYG HTML Editors are able to produce web pages with high value graphical design but are very difficult to use. The other actual real solution for publishing web pages is a simple tool: MS PowerPoint. It's simple, quick, and efficient; everyone knows how to use it. It's the perfect tool for the lazy ones. Used on an adapted web sever it could become a fantastic publishing standard.

An application server, Zope or Php based can be a good solution for publishing on the internet, as physicians who are not used to publishing web content are able to produce high quality web pages with it quickly, efficiently and without long learning process. Moreover these application servers have user management capacities that would permit massive multi user teamwork as in on line papers (perhaps in an Open source way). Zope may be a perfect tool for an online paper. Database connectivity would permit to work with huge image databases on line through the Internet efficiently. However it is long and difficult to set up Zope and further improvements in reliability and speed are needed. Our hope is that there will be further improvements in Zope and Php based application servers. In any case, publishing for the web will need for physicians to have a basic knowledge about HTML, on web image formatting and optimization.