

Hjælpemiddelinstuttet Website:

A Case Study for a Non-Profit Organization to Communicate Internationally via the Internet

An Interactive Qualifying Project Report

submitted to the Faculty

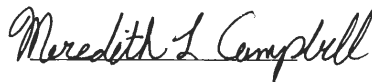
of the

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in partial fulfillment of the requirements for the

Degree of Bachelor of Science

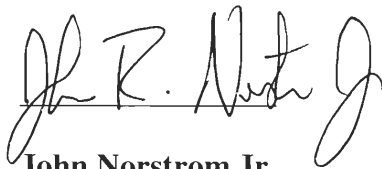
By



Meredith Campbell



Pierre de Galbert



John Norstrom Jr.

Date: May 8, 2001

Approved: _____



Professor Kent Ljungquist, Major Advisor

Abstract

This project, prepared for The Danish Centre for Technical Aids for Rehabilitation and Education in Denmark, discusses a variety of options for designing an international website and the viability of online sponsorship for this non-profit organization. Working from existing websites, written material and interviews, we address issues to consider when designing such a website and sponsorship system. This report provides guidelines for content, how it should be made available to the end user, and whether the Centre should use sponsorship.

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1. Introduction

All organizations have to communicate their mission and purpose, which involves the act of giving or exchanging information, signals or messages by talking, gesturing or writing. The most recent method for communication is the World Wide Web, which allows for fast and efficient transference of information throughout the world. Groups that use the World Wide Web include businesses, as well as individuals, exchanging corporate data, personal data, and research information. Non-profit organizations have also taken advantage of the information exchange on the Internet.

The Danish Centre for Technical Aids for Rehabilitation and Education (known in Denmark as Hjælpmiddelinstittet, or HMI) is a non-profit organization whose main goal is to improve the quality of technical aids that will enhance the quality of life for disabled people, primarily in Scandinavian countries, but also in the rest of the world. The Centre's method for insuring that goal assumes several forms. The Centre has a testing center, which has been accredited by the European Union to conduct standardized tests on various technical aids, and is also actively involved in the development of standards in the building of technical aids. Since the European Union decided to develop these standards in 1995, several other groups have assumed a responsibility in this process. The debates surrounding the development of these standards can themselves take several years before the standards can satisfy all parties, due to the diverse applications for technical aids in various countries. Finally, the Centre provides an online database on their Danish website that contains information on available technical aids, which can only be accessed by a Danish literate audience.

Although the Centre's Information Technology (IT) group thoroughly developed the national part of their website, the international, or English language, version of the site has seldom been updated since its first, very basic version. Upon realizing the importance of an international website in today's use of the Internet, the Centre proposed a detailed analysis of the current version of the International website and asked for possible alternatives. The project is intended to emphasize and enhance the organization's role on the international level. By characterizing the essence of the organization's mission and role on an international scale, and developing a sense of what types of information are offered by similar non-profit organizations with such a presence on both a national and international level, it was possible to ascertain what information would be relevant to the Centre's international audience. Once the pertinent information had been identified, it was necessary to develop a creative approach to presenting the organization in the most effective way possible, while focusing on the following criteria: accessibility, organization, navigational methods, and the relation of the web site to a more traditional hardcopy brochure. An investigation of existing non-profit disability organizations was necessary to provide precedents with which to evaluate the strengths and weaknesses of the Centre's current site. It was also essential to develop and discuss a set of guidelines for style, content, and good design practices, in order to ensure that the Centre's website communicates effectively in an international setting, while acutely maximizing the technological power of the communications medium that of the Internet.

Another primary focus of the project and development of the web site was the research of a system of sponsorship via the Internet, for both the national and

international website. It was necessary to examine methods of sponsorship for the Internet, to identify key strategies to maximize the effectiveness of advertisement placement, to develop a list of potential sponsors who relate to the mission and status of the organization, to develop methods for addressing these potential sponsors, and to finally select the best way to present these sponsors on the web sites with relation to the principles and mission of the Centre.

The presentation of the organization and its mission resides as the first and foremost objective of the project, which includes the enhancement of the Centre's image on the international level through the Internet. Secondary to that goal is the sponsorship and advertisement for the Centre's website, both national and international. The selection of a system of sponsorship and advertising, as well as the selection of a set of viable sponsors, such that both are consistent with the Centre's mission statement and status, were important elements in the final development and presentation of the organization on the Internet.

Background information was necessary to highlight the purposes of communications via the Internet, as well as the most efficient ways of approaching the medium, in the form of the layout and design of the web page. A general discussion of technical, graphical, and stylistic design considerations follow, in order to further support the methods of design showcased in the proposal. A presentation of some existing non-profit disability organization web sites was necessary, in order to continue setting precedents for the development of the design and content of the Centre's new site. Following the discussion of the design and content considerations of the Centre's website, an analysis of advertising and sponsorship on the web was presented,

emphasizing the need for sponsorship through facts and data on the success of advertisement through a web-based medium, such as the Internet.

An important aspect of a website, especially when its foremost objective is to present the character of the organization, is to give a precise image of the organization and its employees. In order to succeed in doing so, it was necessary to study the Centre's internal organizational structure (see Appendix A). After conducting the necessary research into the Centre, several guidelines were provided for further development and design of the site, including a visual model of our recommendations for operation and stylistic considerations for the site.

The results and recommendations will be presented at the Centre's location in Høje Taastrup on May 8th 2001, in the presence of many the Centre employees, including our liaisons Helen Klingemann and Niels-Erik Mathiassen, as well as the project's advising faculty member, WPI Professor Kent P. Ljungquist. In providing the results and conclusions of this project, the Centre indicated that the international site was in need of drastic, sweeping change, as well as the fact that the results of this project were to include a series of arguments and final suggestions on certain procedures for developing the new site. With this in mind, the results and conclusions presented in this report are intended to serve as a lucid set of guidelines for the creation of a successful international website for the Centre, with the expectation that all suggestions in this report must fit the dynamically shifting character of the organization itself, and the vacillating nature of the Internet as well. For this fact alone, a series of potential recommendations for further development and design for the Centre's website

are provided, in hopes of ensuring future successes in the communication of the Centre's mission and goals to its international audience.

2. Background Information

Since the process of developing content for the Internet is inherently complicated in both a technical and stylistic sense, it will be necessary to establish a set of guiding principles and a body of relevant information to assist in the development and the ascertainment of the nature of the project itself. Another benefit of the following discussion is the formation of a working knowledge of some of the considerations and issues of web design that merit consideration, in order to fulfill the goals of the project.

2.1 Web Based Communication Styles

Designing a website is still a rather new process. Because it is a new craft, many designers are still conducting research and experiments, and many come to different conclusions. One concept most agree on is that the way one should design his or her website depends on the purpose the site will have once implemented. There seem to be two kinds of purposes for companies or organizations to develop a site, which are to deliver information and marketing purposes such as to develop brand names, or to get feedback from customers. More importantly there are different reasons people use the Internet. Users might be conducting research, whether to write a paper or buy a computer, downloading software, or just surfing the web for eye-catching sites. In a perfect World Wide Web users searching would only find websites whose goals are to deliver information and those surfing would view the more attractive pages, but there is

no such clear line of separation. Thus, a complete website must be well presented and usable.

In order for a site to be successful in both these aspects, there are many technical considerations that must be addressed. The first impression of a website is given by its homepage, which signifies that the page will become the cornerstone of the entire site. The main technical categories to examine are graphics, the use of third party software and plug-ins, various accessibility concerns, and navigation options.

In addition to these technical considerations, there are social aspects to consider. Because the website is geared towards international audiences, cultural differences must be examined to prevent miscommunications. In addition, because The Danish Centre for Technical Aids for Rehabilitation and Education works with and for disabled people, the site must be designed for all kinds of users. For clarity and readability of this background information, a section of definitions of selected terms has been included in Appendix B.

2.1.1 Home Page

The homepage is the first impression given to a new visitor of a website. Many designers use the front door analogy referring to the idea that one does not always want to enter a place when the way to get in is not appealing. Furthermore, a first impression is harder to change than a second or third, so it is important to start the relationship between the user and the site the right way. There are many options for this first impression.

The first possibility is a very sober, more or less simple page with the name of the company or organization, most likely a logo and perhaps a menu and very little extra information. If there is no menu or other information, there must be a link to what the site will call its index page, which for all practical purposes, except the front door concept, is its homepage. In this case, one should analyze the index page as the homepage. If this option is chosen, yet includes a menu, then this menu should be kept for the related pages, those who serve as an index for each of the menu options. The advantage of this simple homepage is that it provides a good-looking front door, giving a first time user a good impression of the site, provided the page is well designed. The user is not overwhelmed with information not knowing where to look first. On the other hand, once a user comes back to the site, whether for the second time or for daily use, he has no use for that front page. Having to go through the process of downloading another page might tire users to a point where they will no longer use the site if they don't have to. A good example of this option can be found at www.zeroonedesign.com.

Another possibility, which is probably the most common approach nowadays, is to have the homepage not only be the presentation page but also the first page to inform the user. This type of homepage typically presents a menu of the site as well as frequent updates concerning new information or upcoming events. The Centre's Danish homepage found at www.hmi.dk is a good illustration of this method. The main advantage of this type of homepage is that frequent users will immediately recognize updates to the page and get relevant information fast. An important drawback to this approach is a first time user's confusion and possible loss of focus.

Another variant can be to present the menu as well as several important links on the homepage such as homepages to subdivisions of the company or organization, but not present any specific information. This type of homepage would not need to be updated frequently even if a large portion of the site was. A perfect example of this type of approach is the WPI homepage found at www.wpi.edu. This type of homepage is similar to the first type of homepage discussed, except that it applies better to very large websites that contain many departments.

Finally, some sites resort to a third party software to develop animated homepages, the benefits and drawbacks of which will be discussed later. This type of approach would have the same benefits and drawbacks as the “logo approach”.

Regardless of the approach a site chooses, a good homepage will almost always have a menu with the main subcategories found in the rest of the site because the menu makes these pages easily accessible (Wodaski 283). The issue of how to present this menu is important. The use of frames plays a role, as it offers an option for presenting the menu. Frames are the division of the browser window into multiple sections, which are each loaded with a separate content page. This actually allows the designer to control the content presented in each “frame” or division of the browser window, and lets the designer change the content dynamically in one frame, while the other frames may be held static or allowed to change as well. The use of frames can be problematic, however, due to the inability of users of certain text browsers and older web browsers to access the framed pages properly.

The most important consideration, as far as layout is concerned, is the location of the menu. Many designers chose the vertical option on the left of the screen, which

makes the most sense if the vertical option is chosen because most cultures typically read the left side of a page or screen first. However, it is important to keep all the items from the menu visible on one screenshot. This presents a risk for vertical menus not present in horizontal menus. However, a vertical menu presents more options such as a short description of the subsection next to the link or submenus opening when clicking on the item.

2.1.2 Use Of Graphics and Other Rich Media

The use of graphics and other rich media, such as audio and video files, to convey the message on a website is invaluable, whether the directive of the site is to present information, showcase a product or service, or simply function as a flashy representation of an organization's mission and purpose. However, there is an extensive set of concerns and general "good design" practices one must consider when selecting, creating, and utilizing images for the web. Between a multitude of available file formats, color palettes, concerns over download times, and other general design and accessibility guidelines, the decisions involved in realizing the most appropriate and effective presentation using graphics and rich media can become very complicated in a short amount of time. To help minimize the confusion, and present a portfolio of the available information to help expedite the process of selecting the characteristics of this media, it will be advantageous to begin by discussing the most popular file formats available for use on the web, and then leading on to more complicated matters of graphic design for the internet.

In the realm of popularity and usability on the web, there are two choices for still image graphics files that have emerged from the masses of available file formats: the Graphics Interchange Format (more well known as GIF or GIF89a) and the Joint Photographic Experts Group format (known widely as JPEG or JPG). The differences between the two formats are stark, and can be attested to by the fundamental differences in both approaches to image compression as well as the range of the expected end-user applications of each format. CompuServe developed the GIF initially in 1987 as a method of creating graphics files that would allow “high-quality, high-resolution graphics to be displayed on a variety of graphics hardware and is intended as an exchange and display mechanism for graphics images” (Graphics Interchange Format Specification, January 31, 2001). This 'Graphics Interchange Format' allows high-quality, high-resolution graphics to be displayed on a variety of graphics hardware and is intended as an exchange and display mechanism for graphics images” (Graphics Interchange Format Specification, January 31, 2001). GIF images are always compressed, and capable of containing up to 256 colors, yet there are only 216 colors available for designing for the web, since these are the only colors that are shared between the Macintosh and PC platforms, and have been dubbed as the “web palette” shown below in Figure 2.1 (Graphic File Formats At A Glance, January 31, 2001).

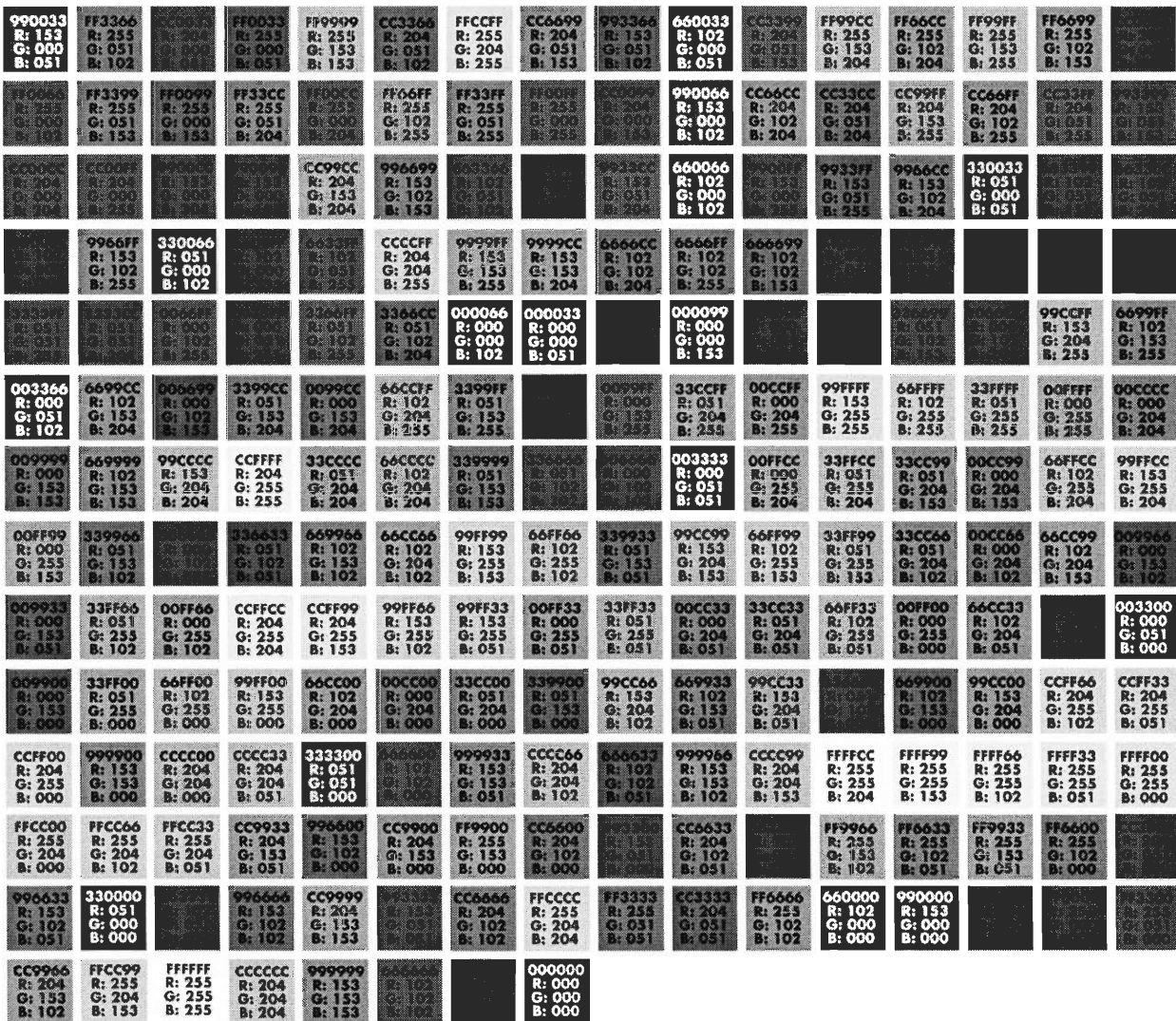


Figure 2.1 GIF “Web Palette”

In addition, GIF89a (but not GIF87a) images are capable of handling transparency, that is, it is possible to select a color in the GIF image to be transparent (Graphic File Formats At A Glance, January 31, 2001). Due to this advantage, nearly every image created in graphics programs or used in today’s web browsers are encoded using the GIF89a format. The GIF format is a “lossy” file format, which dictates that a certain portion of the data contained in the original image will be “lost” when creating a GIF file. By discarding bits of color information in the data conversion process, the file’s size is

greatly reduced. Because of these constraints, it is advised that the GIF file format should be chosen when an image either uses only a few distinct colors, portions of text, large blocks of color (such as buttons, icons, or horizontal rules), or when the image has sharp edges (Graphic File Formats At A Glance, January 31, 2001).

The second still image file format used, the JPEG format, is capable of supporting up to 24-bits of color information, which is over 16.7 million colors. Common applications for the JPEG format range from photographs to many other images with continuous variations in color. "The JPEG file format stores all of the color information in an RGB image, then reduces the file size by compressing it, or saving only the color information that is essential to the image" (Graphic File Formats At A Glance, January 31, 2001). However, the increased depth of color comes at the cost of the inability of the JPEG format to support any transparency. The most notable feature of the format is its variable compression, which can be determined at the time of converting and saving the image file. Most modern image editing software and imaging plug-ins will allow for this variability in compression levels, (Graphic File Formats At A Glance, January 31, 2001). JPEG compression is also "lossy" like the GIF format; so another important aspect of JPEG compression that must be considered is the level of image quality loss that is produced. According to Kodak, "Image data loss (and resulting artifacting) may not be noticeable at first display, but may be magnified upon further image processing. That's why it is a good rule of thumb to reserve JPEG only for use in compressing a finalized file for transmission or storage, and not as an interim format for successive versions of a manipulated image" (Image Pac compression and JPEG compression: What's the Difference?, January 31, 2001). Image quality and image size must be equally balanced

when considering how to save the image in the JPEG format. The general uses for JPEG's are scanned photographs, full-color images, realistic grayscale images, and naturalistic artwork with highlights, shaded areas and shadows (Graphic File Formats At A Glance, January 31, 2001).

In addition to the basic concerns of when and where to use one of the two popular web file formats, it is necessary to consider "optimizing" the image to ensure highest image quality while maintaining small and manageable file sizes. Optimization is therefore defined as the process of obtaining the highest image quality for a desired file size. As an example in the drawbacks of large file size can be cited that, "Each 640-by-480-pixel, 24-bit color image requires 900K of disk space" (Heid, January 31, 2001). Given that the time to download a page off of the Internet is directly proportional to the file sizes of the graphics and other media contained on the page, having several graphics files of such size as 900K, would greatly hinder the speed at which a page is downloaded. This fact alone leads the most common source of user dissatisfaction and discouragement, resulting in far fewer hits for a graphics and media intensive web site. However, by reducing the size of the media files to be included in the page, it is possible to "optimize" the image and thereby greatly alleviate download times and user frustration. Ways of optimizing files such as GIF's includes reducing the depth, or number, of colors in the image and its palette, while still maintaining desired image quality. To optimize a JPEG file, it is necessary to attempt different combinations of image quality and file size, as with most applications, the nature of the JPEG file format dictates that a JPEG file's size is already as close to optimization as possible when the quality has been reduced to its lowest acceptable level.

In addition to the considerations of image quality and file size, there is an almost invisible element of web design with graphics that is somewhat innocently ignored by a majority of web designers, both personal and professional, all over the world. Although this element can seem innocent enough, it can easily cause incredible amounts of stress for users of text based web browsers, as well as for the blind, who depend on special software that allows web pages to be read to them. The use of what are described as “ALT tags” or special sections of web page code (also known as Hypertext Markup Language, or more commonly, HTML) that are associated with an image, can make or break a web site for this large group of users. ALT tags allow the web designer to present the attributes of the content of the site’s images when the user’s browser is unable to display the graphic, or to be read to the user if the user’s software supports page reading. In essence, the ALT tag in this context becomes a vital element in the overall design of the page, to ensure maximum accessibility for all users, regardless of browser, computing platform, or any other obstacles.

2.1.3 Third-party Development Platforms and Browser Plug-ins

In the process of development for a website, there are also several considerations of the mechanics of actually starting the process itself. The first such concern is the use of a third party web development platform for graphics and web design. There are several popular packages for HTML coding on the web. Many of these packages are referred to as “what you see is what you get” (or WYSIWYG) editors, as they allow the user to actually see the physical layout, formatting, and

content of the site as the end web user would see the site off the Internet. One of the most popular packages available today is Microsoft's FrontPage 2000 software, which is available, either for purchase as a standalone product, or bundled with Microsoft Office 2000 Premium. Not only does the software help create the site itself, but according to Microsoft, it also offers many tools to encourage collaboration between teams of web developers and other tools that help manage and maintain the site (Microsoft Product Catalog, Overview). In addition to FrontPage, there are several other development tools offered by Macromedia, namely a product called Dreamweaver 4, which can be purchased in a complete web development suite along with the company's graphics editing software called Fireworks 4. The Macromedia products are quickly becoming standardized among web developers, with a near 70% market share among professional web developers (Macromedia Press Room, "Macromedia And Allaire To Merge"). Other notable corporations that develop software for web development include Adobe, whose Photoshop and Illustrator software packages sell millions of copies not just for web based use, but for the print design world as well, and Allaire, who develops professional website management tools, and recently announced an upcoming merger with Macromedia (Macromedia Press Room, "Macromedia And Allaire To Merge").

In addition to the ongoing choices of which web development suite and packages to use, there is an ongoing debate about the use of certain third-party software plug-ins, to enhance the presentation and content of websites. Plug-ins are software modules that are added onto a web browser to allow extended functionality, such as the ability to open and view new media files and content on the web. Since third-party plug-ins can be used to more effectively display audio, video, and other rich media, as well as

offering new options for presenting the website's content, they have become a hot business in the world of the Internet. One of the more popular and widely used companies producing solutions for the creation audio and video content for the Internet is RealNetworks, and their free RealPlayer software, which is capable of downloading and playing audio and video files, called RealMedia files. RealMedia files are created by the website developer using RealNetworks products, such as RealProducer Plus (a tool for encoding and broadcasting digital media files), and RealPresenter Plus (software that allows the developer to actively stream data from Microsoft PowerPoint Presentations), both of which allow for advanced websites that aim to attract users with flashy features and a growing acceptance of the technology they offer (RealNetworks.com, sec. "Creating Streaming Media"). In addition to the solutions offered by RealNetworks, Apple also offers QuickTime, a free media viewing plug-in that has a sizeable market share at nearly 100 million users on both Windows and Macintosh computing platforms (Apple, sec. "QuickTime, Products"). QuickTime Pro is the software sold by Apple to create the QuickTime streaming media files for use with their free player, and allows users to not only create streaming audio and video files, but also allows for the creation of presentations, slide shows, and the addition of special video effects (Apple, sec. "QuickTime, Products"). Another solution for web-based animation is the current "industry standard" Macromedia Flash 5, which holds claim to 96% of the online audience (Macromedia Products, Flash 5). According to Macromedia, "web designers use Macromedia Flash to create beautiful, resizable, and extremely compact navigation interfaces, technical illustrations, long-form animations, and other dazzling effects for their site" (Macromedia Flash 5 FAQ). One of the biggest drawbacks

to the use of third-party plug-ins and media files is their inability to be accessed across the whole range of browser platforms, as well as the inability of disabled people to access certain aspects the content of the files as well. In order to work around these constraints, companies offer a plethora of ways to obtain their plug-in players via download, and web developers are beginning to offer transcripts of the file's content in a way such that disabled individuals may access the entire site, including the features that make newer websites stand out and be noticed.

2.1.4 Accessibility Considerations

A great deal of deliberation must be exercised in the designing and developing of materials for any communications medium, and the task of creating a website is no exception to this rule. In fact, there are literally hundreds of thousands of presentation styles, content designs, and matters of accessibility that are associated with each and every single one of them. Elements of design that come into heavy play include colors, audio and video, the size of the font used to display the web page; the resolution (or size, in pixels) which the web page will occupy; the brand, or even type (graphical or text based), of web browser that the end user is currently running; and whether or not a site should utilize "frames" the common technique of splitting a web page into at least two independent sections, filled with content that can be either static or dynamic. In order to develop an enhanced set of guiding principles for using and designing with these elements, it is beneficial to delve more deeply into the nature of each one of these

respective fundamentals, and to learn how they may either be used to create a dazzling website, or propel a site into instant notoriety.

One of the most important elements of web design is the use of color. As with all communications media, it is important to abide by general rules and schemes of color usage, such as the following guidelines succinctly summarized by Fortress Web Design and Hosting's website based tutorial on web design.

Warm colors are best suited for sites that utilize an energetic or bold theme. The vivid nature of these colors coupled with the appropriate background can offer excellent contrast. Be cautious when using this color group so as not to overwhelm your content with these eye-catching hues. Cool colors are well suited for conveying a lower key message. They give a soothing impression of calm and seldom overpower the main content of a page. With a complimentary font color, they offer an effective combination of contrast and color variation. Analogous colors offer a palette of well blending colors that are generally compatible in any combination. You can use this color grouping when you want just enough variation in color to offer separation of the elements without straying too far from your theme. Complimentary colors offer high contrast and should be used with caution. Residing directly opposite of each other on the color wheel, this stark difference in tone and hue can be eye catching, but if used wrong, can give an eyesore effect to your design. The bottom line here is to use complimentary colors in moderation. Monochromatic colors are what you might call "low risk" colors. Because you are using all of the hues of a single color, there is little chance of overwhelming your content or conflicting with another color selection. Like cool colors, the subtle changes in hue can give a calming effect but you also run the risk of giving your pages a generally "boring" appearance unless there is sufficient diversity in your content. This group offers very little contrast or variation and may not be suitable to some themes. Triadic colors give your page a sense of balance. You have sufficient variation to support most any thematic approach to design without much conflict between color combinations. Triadic colors are separated by 120 degrees on the color wheel and could be considered a "middle of the road" approach to color coordination.

(Fortress [Color Considerations, Part II](#))

Below, in Figure 2.2, is a graphical representation of the six different color schemes, as outlined and exemplified by Fortress Web Design and Hosting's [Color Consideration Tutorial](#).



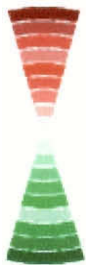
Warm Colors



Cool Colors



A Typical Slice Example of Analogous Colors



A Typical Slice Example of Complimentary Colors



A Typical Slice Example of Monochromatic Colors



A Typical Slice Example of Triadic Colors

Figure 2.2 – Sample Representation of Color Schemes

In addition to the considerations of which colors to use, and what scheme to select from, accessibility issues dealing with color also run the gamut of document colors, font colors, background colors, the use of hexadecimal color codes versus color

names, and of course, the consideration of the web-safe palette presented above in Figure 2.1. When considering document colors, one should specify as much information for the page in advance as possible. For example, the HTML tags BGCOLOR (background color), TEXT (text color), LINK (hyperlink color), VLINK (visited hyperlink), and ALINK (active hyperlink) may either be specified by the designer or by the end user. To ensure a healthy combination of color that is pleasing to everyone, it is suggested by Carl D. Burstein, operator of the AnyBrowser web pages, a site devoted to ensuring equal access and maximum accessibility for users of any web browser, that the website designer specifies all of the tags to ensure what he calls a “pleasant and readable mix” (Burstein “Color Issues”). Burstein also takes care to admonish the use of designer specified font colors, since users are allowed to set their own color preferences within their web browsers, which will override the designer’s preferences, and could result in a messy, unreadable site.

Audio and video, known as rich media, can make a website come alive in an instant; however, along with the advent of such potent technologies, there comes a series of dilemmas on accessibility. One of the most limiting factors in the use of rich media stems from the lengthy download times often required to access the media file embedded in the code of the web page. Another additional concern is that the file type may not be supported by the user’s web browser, or may require an additional software component that runs in tandem with the user’s web browser, called a plug-in, to allow the user’s browser to download and play back the media file. Much of the software necessary to do this comes in the form of third-party software, as discussed in section 2.1.3, and which generally requires the user to participate in a one-time, and often

lengthy, download and installation of the software that will allow the media content to be accessed. In addition to these concerns, the obvious limitations of the media for the disabled, such as the inability for the blind to view movies, the inability of the deaf to listen to audio, require designers of such content to provide provisions for the disabled, such as extensively descriptive transcripts of motion and sound for the disabled website users.

One of the most recent concerns in design has been the ability of a page to be properly displayed on a user's monitor, without part of the page being "cut off" or limited to only a fraction of the actual site being displayed in the user's web browser window, regardless of the user's screen size (in pixels), denoted by a term called "monitor resolution." The typical pixel dimensions for monitor resolutions range from the very large windows of the resolution of 640x480 pixels, to the very small windows of 1024x768 pixels, and some resolutions get even smaller than that at values such as 1280x1024, or more. It is common for users with poorer vision to set the resolution of their monitor to 640x480, or even 800x600, which tends to be very limiting in web design due to the small amount of physical space on the screen allotted by such a resolution. Most websites are designed with these resolutions in mind, and the mark of a good site is to be able to fit the entirety of the navigational information contained on the page into one screen of a resolution of 640x480 or even 800x600.

Heated battles are currently being waged over the next accessibility issue, and that is the ubiquitous web browser. There are currently two graphical web browsers that dominate the market share, and that is Microsoft's Internet Explorer and Netscape's Navigator. These browsers are both capable of reading web pages, yet the

interpretation that each presents of the exact same web page can vary immensely. However, many third-party development tools will allow “cross browser compatibility checks,” a phrase used to describe an automated battery of tests that allow the developer to check to verify that a web page will be correctly displayed in the web browser window of several different versions of the more popular web browsers, such as Netscape and Internet Explorer.

In addition to the concerns of graphical web browsers, there is an additional worry of designing for accessibility by users of text based browsers, and for users who have opted to turn off the image displaying capability of their graphical browser of choice. The most convenient way of ensuring that a web surfer who is currently running the latest text browser can view a site is to make extensive use of the ALT tag in the HTML code, making certain that the text contained in the tag can properly describe the image that is not present, whether it is a navigational link or simply an illustration of some sort. By considering all of these issues very carefully and designing under deliberation of a large number of possible conditions faced by end users, one can guarantee that a website is indeed accessible from a large share of the target audience’s point of view, thus fulfilling the intended purpose of the website.

2.1.5 Navigation Methods

As for the rest of website features, there are several options when it comes to navigating through a site. These different options have pros and cons depending on the type of website, its size as well as on the users. The most frequently used option is a

menu, which can also be presented in several ways. In addition, designers have used features such as a site map or a table of contents.

The most popular type of menu among designers, if frequency of use is a good measure of popularity, is a menu on the left hand side of the screen, either through using frames or tables. This option is popular because of the western habit of reading left to right, which forces the user to be aware of the menu, hence the contents of the site, before reading the information displayed on the main frame. The main drawback of this type of menu is that when the contents of the main section are over a page or screenshot, the reader quickly finds himself with an empty column on the left and is forced to scroll up to find the menu, unless the menu is on a separate frame, which would have the advantages and drawbacks of a frame. A similar option exists with a menu on the right hand side, which does not have many of the advantages that a left hand side menu has, except maybe aesthetics for a particular page.

A different type of menu can be found horizontally at the top of the page. One advantage this type of menu shares with the vertical menu on the left is the principle that users will read it first because it is at the top of the page and the majority of the world reads top down. The main drawback to this approach is that the menu disappears as soon as the user scrolls down. One way to minimize the problem is to add the same menu at the bottom of the page so that once the user reads the bottom of the page, he has the opportunity not to go all the way back to the top. An interesting possibility of the horizontal menu is to add a few words under each menu item to describe the section in more detail than one word.

A recently added feature to menus usually used for menus on the left, but also adaptable to vertical menus, is a sub-menu appearing when the first level item is clicked. For example, if the user clicks on the menu item Sport, instead of loading a new page where a user would find a menu of sports, a sub-menu would appear right under Sport including Basketball, Football, Soccer, etc. This type of menu would have to be done with a script such as CGI or JAVA script.

Instead of a traditional menu, some designers chose to place a simplified version of the site map as a menu. This can be done by dividing the picture of the map into sections, around the words, which are then directed to that section of the site. The map may help some users who find it easy to imagine the site from its map, which is not the way some designers see things. Indeed, according to Web Site Usability, “users don’t form mental models of sites” (Spool 20).

Another possibility that is close to the map looking menu is to include a detailed version of the map on a separate page. This page would be linked from the home page as a navigating tool. A similar possibility is to have a table of contents page that would display the same type of information in a different way, which would help users who do not like using the maps.

In addition to menus or navigation tools consistent throughout the site, some websites display a menu on the home page redirecting users according to their type. For example, a student would follow a link, a parent another and a professor third one. This approach is not very efficient for two reasons. Firstly, because it rules out any user who is just browsing to learn more about the company, school or organization.

Secondly, many pages would be needed by both students and professors, which would force the webmasters to maintain a lot more links.

2.1.6 International Considerations

International websites need to address several concerns that websites intended for citizens of one country do not have to consider. These include language as well as cultural considerations. As far as language is concerned, organizations have two viable options. The first is to publish their international website in only one international language. An international language can be defined as one being the first language in many countries. The most frequent on the Internet is English, but some South American International websites are only in Spanish, and others may be only in French or German. Another possibility is to have a translated version of the international site in two, three or even more languages.

Differences between countries go far beyond language. One way to avoid privileging one culture over another is to look at the world from the viewpoint of a human unaffiliated with a single country or cultural perspective. In his book Visual Language for the World Wide Web, Paul Honeywill supports the idea that humans think in pictures rather than words. The logical conclusion to that idea is to try and communicate through pictures and icons rather than words, whether from a writer's first language or after translations. Honeywill also makes the point that fundamental symbols such as triangles or arrows have been learned and interpreted by humans according to the rules of their community (Honeywill 116). This is illustrated by the different interpretations of

signs and symbols such as a thumb up which can mean “good” in a country but mean “one” or “hello” in another. With this in mind, an international site that chooses to use symbols and signs must research carefully the meaning of those symbols in the different countries from which it hopes to have an audience.

2.2 Existing Websites

Since the World Wide Web became such a popular communication technique, many organizations have taken to using the Internet to post material, which is intended to be readily available to the general public. The content on websites can vary in nature from games and entertainment, to information, and to services. The nature of the organization using the Internet determines what the main focus of the site will be. Stores will have on-line shopping available while corporations will have information about their organization. Other sites will be devoted to entertainment, games and movies.

Non-profit organizations, however, tend to have a very specific audience in mind for their websites. The audience has either been referred to the site or is looking up information in specific areas, often around the area of health or public issues. The audience towards whom a website is aimed establishes the type of information that will be made available. Both services and information are accessible on not-for-profit websites. The information available on non-profit websites ranges from a history of the organization and the mission statement, to precise information on a disability or focus of the group. Services that are offered included everything from workshops and

information sessions, to equipment and supply purchasing to additional sources. Non-profit organizations also tend to put ways to help or get help on their web pages.

2.2.1 US Disability Organization Websites – National

The American National Red Cross is a group led by volunteers that provides relief to victims of natural and man-made disasters, and helps to prevent, prepare for and respond to emergency situations (www.redcross.org). The American Red Cross's website has multiple audiences, targeting both those who need help as well as those who are seeking to offer assistance. Information can be found related to what is happening throughout the organization and where action is desperately needed. Information given about the safety of the blood supply and government acts that affect health and safety concerns of the American public. Having a multi-faceted audience forces the organization of the website into dividing the available information into sections. The home page of the website has a table of contents, listing the major topics covered throughout the pages. The major topics include sections on how to donate money, relevant news, a list of services offered, what to do if you want to help, local branches, a site directory, a virtual museum, a calendar of events and a list of locations where the Red Cross is active. When the link is used, the viewer is brought to the page on that topic with sub headings, which allow the viewer to quickly find the information they are looking for.

The large-scale characteristic that comes from being a national organization has allowed The American National Red Cross's website to be divided into manageable geographical areas. Links to local Red Cross chapters are accessible from the national website. When there is not a corresponding local chapter website, contact information

for the nearest center is given. The local branches can be found by entering a zip code or by choosing a state and browsing through all of the locations in the state.

The American National Red Cross website has navigation buttons at the bottom of all its pages that are the same as the general topics in the table of contents list, as well as navigation buttons at the top or side of the pages for navigation within a specific section. The navigation tools allow visitors of the website to find information effortlessly, and to go between areas of the website easily. The theme that ties all the pages of the website together is the symbol of the American Red Cross, which is a Greek red cross, generally on a white background. The red color is used as the main accent color for titles and links over the simple backgrounds. Photographs are used to enhance the website, impressing the viewers with the seriousness of the conditions of many people throughout the world due to natural disasters or other emergencies. The pictures are duplicated on several of the different pages and are usually stationary. One page has the image flashing between several photographs but at a slow rate so as not to bedazzle the eyes. Other locations have a slide show of photographs allowing a person to see the pictures if they so choose and they can change the image at a rate that they are comfortable with and allows them to see the entire picture.

The Dreamms (Developmental Research for the Effective Advancement of Memory and Motor Skills) for Kids Inc Assistive Technology Solutions is a non-profit professional services agency that is committed to increasing the use of computers, high quality instructional technology, and assistive technologies for students with special needs in schools, homes and the workplace (www.dreamms.org/atfscp.htm). Services that are offered by this organization include a monthly newsletter, information

resources, conferences, and general awareness support. The newsletter of which samples are available on-line includes articles about new devices and techniques for adding different disabilities, including software to help learn how to use computers. Lists of conferences are given as well as contact information for the article's authors to find out more information. The website has a comprehensive listing of companies where software can be purchased, some of which is designed for people with special needs and some of which is designed to make computer access easier for those with special needs. Another important list that is given on the web page is of the projects that have been given grants by The National Institute on Disability and Rehabilitation Research (NIDRR), U.S. Department of Education. One section that is on the website is a form that can be filled in to give donations to Dreamms. The form is intended for individuals who want to support the organization. There is also an option of how to direct the money donated. Another form on the website is for ordering the newsletter and products offered by Dreamms. There is a long list of National Resources that are available with addresses and phone numbers given. There is also an equally long list of links to similar sites. The links are divided up into search tools, government locations, corporate software and special education, and universities.

Stylistically, the website is intended more for information than for a "cool" website. The organization's name and logo appears at the top of every page. An easy to read navigation bar is located at the left hand side of the page in a column format. All of the lists of corporations and links are also in a column form. The website has a background in a neutral color, beige, while the text is black and titles or emphasis is placed by using red text. When subheadings are needed or text that doesn't need

complete emphasis, green text is used. All of the links appear in blue for convenience and ease of identification.

2.2.2 US Disability Organization Websites – International

The American National Red Cross has an extensive presence on an international level as well. The organization carries out programs to help with disasters and emergencies all over the world, including Africa, the Americas, Europe and Central Asia, and Asia and the Pacific. Every country or region that The American National Red Cross aids in any way has a page describing the work done in that area towards the relief of the people living there. The audience of these pages, however, is the American public. The pages let the American public know exactly what the Red Cross is doing on the international scale. Since the audience is American, the details that are included are general with an option to e-mail for more information regarding that country.

The American National Red Cross web site has a link, which leads to international services offered by the Red Cross, including a Holocaust and War Victims Tracing service, activities that are happening with Red Cross societies in different countries and provides links to the International Federation of Red Cross and Red Crescent Societies and the International Committee of the Red Cross.

2.2.3 International Disability Organization Web Sites - National

ORW, Opportunities through Rehabilitation and Work Society, is a non-profit resource base, serving organizations, businesses, and government agencies involved

with employing people with disabilities. OCR has a consultation service, collects and distributes employment related information, and seeks out new and innovative approaches to increasing the employment of people with disabilities (www.direct.ca/orw/). The front page of OCR gives the viewer the choice between a text version, and a version of the website that uses frames and graphics. If the viewer does not choose a version, they will be redirected to the frames and graphics version of the site. The site with graphics and frames has a vertical navigation bar on the left side of each page, and dispersed throughout the pages are navigation tools to bring the viewer back to the top of the page that they are looking at. There are links that go to other pages about disabilities and links about employment opportunities for those with disabilities. There is a guest book page, which allows individuals and organizations to have their name linked on OCR's web page, and for them to post a comment about their relevance to the site. An important link that OCR has is to The Source, a newly published guide to programs and services for people with disabilities in British Columbia. The site has a simple style with graphics only appearing in the navigation bar. The rest of the site has text, in black and purple, the site's colors, giving help on where to find disability information. The site is Bobby Approved, which is a web-based tool that analyzes web pages.

The Neil Squire Foundation is a Canadian non-profit organization that through education, technology and career development creates opportunities for individuals with physical disabilities. Through direct interaction, the Neil Squire Foundation works to research, develop, and deliver appropriate innovative services and technology to meet the specific needs of handicapped individuals (<http://www.neilsquire.ca/>). The website

for this national organization gives a comprehensive background and history of the beginning of the organization since 1984, when it was first created. The web page gives information about what the Foundation is accomplishing in different areas of research, products that have already been built, and consultation and education services that are available through the organization. There is a lot of information available from the web site.

The organization of the Neil Squire Foundation, however, detracts somewhat from all the information that is available. The web site has navigation links that will send the user to the homepage and more information, but the overall organization is confusing. There is a general navigation bar at the top of each page, but the more specific buttons are dispersed throughout the content of the page, and are difficult to see. Stylistically, the site creates a good sense of unity on the various pages. At the top of each page, the organization's name, and catch phrase are located, along with the general navigation bar. There is a sidebar on each of the pages that gives subsections that a viewer may be interested in learning more about. The pictures used on the website add to the viewer's ability to understand the topics better. Pictures of the Foundation's products, and of people with disabilities, are dispersed throughout the website, and are accompanied by an explanation of the picture in alternative text.

AVERT is a leading AIDS education and medical research charity based in the United Kingdom. Its aim is education and medical research with emphasis on preventing people from becoming infected with HIV, improving the quality of life for those already infected, and working to develop a cure for AIDS. The organization has three areas of focus in their education program which include an information service,

“Making a difference” international grant scheme and the AVERT web site. According to information given on the web page the site comprises over 150 pages of information that is accessed by more than 30,000 people a week from all over the world. The site does state that part of its goal is to target young people. The fact that there is information specifically for young people is given in the first sentence of text on the homepage of AVERT (www.avert.org). The site has a comprehensive amount of information on their site ranging from personal stories to facts and research opportunities. The information given on the website is divided by country with the focus being the United Kingdom. News articles with relevant material are also given on the site. The related links page sends the viewer to a list of different areas, including telephone hot lines, statistic, testing and other relevant areas and the website addresses are listed as links. The site is well organized; there is a navigation bar at both the top and the bottom of each page. The navigation bar at the top of the page is divided in two parts. One part has the index, site map and search buttons, each of which has a large button icon with alternative text. The second half of the navigation bar has items that are more specific to the area of the site in which the viewer is currently. The second part of the navigation bar, however, does not have alternative text. The navigation bar at the bottom of the page includes some of the same large buttons as at the top, index and e-mail. A full search is put at the bottom with a place to enter the key word instead of linking to the search page, which comes complete with instructions for those unfamiliar with the technology. Stylistically the AVERT has a simple web page with the color scheme being shades of blue. The top and left side of each page have blue strips to add color and the organization’s name and logo. The text

is all in black with sections being delineated solely by bolded text. The links are in a dark blue and underlined; the color of the links, however, is not bright enough to stand out. There are a few graphics that appear at the top of a page. The graphics are on the pages to make it easier to know the content of the page; on the news article page there is a graphic of a newspaper at the top. The intention of AVERT's web page is to be an information source it does not allow the technology of the internet to overwhelm the purpose of the site, getting information about AIDS to the public.

The Blind and Vision Impaired Persons Network (V.I.P. NET) is a non-profit incorporated association (<http://www.home.aone.net.au/bvip>) based in Queensland, Australia. The organization comprises vision-impaired people and their relatives and friends who want to improve the quality of life for blind and vision impaired people and their families by assisting in employment, mobility, life skills and adaptive technology. The organization was started to provide disability information and support to people in less centralized areas than cities, intending to be a rural organization. The V.I.P. NET website is intended to simply tell the viewer about who the organization is and what events they have happening. Additional sites of related information are given, sorted by regions in Australia. The group appears to offer more support than basic information about vision impairment.

Association of Children with a Disability is a non-profit organization (www.acd.org.au) that provides information, support and advocacy for children with a disability and their families. All types of disability are covered by this organization, and they constitute of a network of support groups through out Australia. There are many services that are provided by the Association of Children with a Disability, including

workshops, support groups, Internet training and information and free telephone information and advice. There is a navigation bar at both the top and the bottom of each of the pages; both bars are the same leading the viewer to the home page, links, and other major areas of the organization. The menu bar at the top of the page is fancier than that at the bottom of the page, with each entry lighting up as the mouse passes over it, but neither of the navigation bars has alternative text for a screen reader. The text is all in black with the titles being in a brown color and the links in blue. The graphics on the page are simple with only the organization's name and theme and a few pictures of children with disabilities and their parents at the beginning of the pages. The page with links is very extensive, separating the links by major topics of interest. Contact people are given for different valid issues, one being a person to contact with comments about the web page and others in relation to the specific activities and programs. On one page the view was warned that if going to that page it would take a while for the pictures to load on the computer. The site is intended to be a resource for parents with disabilities giving them support groups and guidance of where to go for additional information dealing with the specific disability in question. One service that the page is trying to implement is information in other languages. The site has a page under construction to allow for information in languages other than English, specifically Vietnamese, Chinese, and Arabic. A telephone interpretive service, however, is referred to and the phone number given out on the page.

2.2.4 International Disability Organization Web Sites – International

The International Red Cross and Red Crescent Movement is the international header for all of the Red Cross organizations throughout the world (www.redcross.int/eng). Since this is just the blanket organization, the website is not very extensive. Links are given to The International Federation of Red Cross and Red Crescent Societies and The International Committee of the Red Cross, both of which carry out the more practical aspects of the Red Cross. The International Red Cross and Red Crescent Movement's web page covers information on what is expected in the future, what has happened in the past (history) and the magazine that is published. The web site has a simple navigation guide in a column at the left of the site, allowing the viewer to quickly find all the pages of the web site. The Red Cross and Red Crescent are the primary images used on the pages supplemented by some pictures. Sponsorship is not displayed on this, the general, web site, but a banner ad is used to advertise the history page of the web site, encouraging people to look at the illustrious history of the organization. To accommodate the international status of this organization, the site is available in both English and French.

The International Federation of Red Cross and Red Crescent Societies is the world's largest humanitarian organization whose mission is to improve the lives of vulnerable people by mobilizing the power of humanity (www.ifrc.org). Vulnerable people are those who are at greatest risk from situations that threaten their survival, or their capacity to live with an acceptable level of social and economic security and human dignity. Often, these are victims of natural disasters, poverty brought about by socio-economic crises, refugees, and victims of health emergencies (www.ifrc.org).

On the homepage of the Federation is a section for news stories. To accommodate the fixed size of the space, there is a scrolling by of all the news stories that can be clicked on when they pause. The stories scroll by at a reasonable pace, which does not overly distract the viewer's eye. There is a navigation list on the left hand of the web page, which is present on every page on the site. The topic headings are followed by an arrow and when clicked on will give the subheadings under the headings. Important parts of the navigation list include a site map and a "contact us" button. The site has a lot of very straightforward information to be given to the viewer, and doesn't delve into complex presentation, so it is an information based website that wants to present the information quickly, efficiently and with little effort to be exerted. The site includes the symbol of both the red cross and the red crescent.

The International Committee of the Red Cross (ICRC) is targeted toward an international audience. The first item to come up is the need to pick a language with which to run the page. English, French and Spanish were chosen as the possible languages. This is an organization that is a component of the International Red Cross and Red Crescent Movement. The ICRC has a more clearly defined target to help. The organization is interested in protecting the lives and dignity of victims of war and internal violence (www.icrc.org). The web site has information about the latest happenings. An interesting section that is a part of this website is a section on publications and an extensive list of links. There is always a small navigation toolbar across the top of each page, while there is sometimes a vertical column of headings on the left of the page or two columns in the middle of the page. Only the navigation toolbar at the top of the

page has alternative text for people with text only servers or for screen readers for the blind.

The McKenzie Institute International is a not-for-profit organization that deals with spine and neck injuries and problems. The homepage for the international web page for the McKenzie Institute International is in English and has the company's logo as a background. The viewer is asked to choose a country, which will then direct them to the contact information for the corresponding chapter of the company, with links when the division has a web page. Some of the larger divisions have their own web pages, but when they do the logo is kept the same keeping uniformity between the sites that will allow a user to know they are on the organization's site even without knowing the language. The content for each country includes the same basic information, an introduction to the group, a list of therapists and a list of education and available courses through the institute. The international site has the same style on all the pages, and while it may become boring when looking through the entire site it allows the user to know that they are still on the same site. Navigation of the site is clearly laid out. A navigation bar is at the left of every page with the large table of content type items. There is a bar at the top that allows the institute to be contacted, has the site map link and a home button easily accessible for quick use. A navigation bar is also at the bottom of the pages, giving navigation within the specific topic.

The McKenzie Institute USA

(www.mckenziemdt.org/usa_homepage_frameset.html) is linked to the international site. It is, however, in the same style as the international site with slightly more specific organization with major sections divided into information for patients and information for

practitioners. Patients can find information on how to locate a therapist, ongoing research, and testimonies from other patients. The professional section has some of the same general information about the organization but it becomes much more specific with conferences and clinic, education opportunities, membership and newsletters are also available. The site has a navigation bar on the side linking to all the resources available on the USA web site, as well as a navigation list at the top of the page sending the viewer to contact information, the site map, and the home page. All of the navigation links have alternative texts, to help viewers with disabilities or text only servers. The style of the page is simple with a title bar at the top of each page keeping the viewer aware of which site he is on. There are a few simple graphics that start different pages, a picture of the newsletter on the page with the newsletter, but the graphics are small and not distracting they add to the professionalism of the site. The rest of the page remains stylistically simple with black lettering and red accents.

Sintef is the Danish Centre's Norwegian sister institute. The site exists both in English and Norwegian but the homepage of the site, accessible at www.sintef.no, is the English version of the website. The home page is comprised of three elements that are built using tables in HTML. The top section of the page is the logo of the organization and a brief menu containing four elements that allow very basic operations, which are: contacting the organization, searching through the site, accessing the information bulletin board and finally the Norwegian version of the site.

The second element of the page is a substantial menu on the left part of the page with more than twenty links to different parts of the site relevant to the organization's activities. The largest part of the page is devoted to a few pieces of information. When

accessed on March 23, 2001, the section included a short article on recent research the organization had performed in the field of crisis simulation software, as well as a few sentences on the organization's work and contact information.

The Centre also has a sister institute in Sweden that bears the same name, Hjælpmiddelinstittet. Their website is comparable to the Centre's, in the sense that the Swedish version seems well developed with a menu on the left, and various links to the guts of the site, although it does not feature any advanced elements, such as a database or search engine. From the home page, one can find a link to English material, which includes a lot of information available on the Swedish version. The English homepage includes the organization's mission statement, followed by a list of links to all the pages available to English readers. These various sections include information about research, in which the institute participates, as well as other projects, results of research, and available English language publications. These individual pages are rarely consistent with the site's graphical interface, and they seem to have been developed by many different employees. The site can be found at www.hi.se.

Miljøbevægelsen NOAH is the organization of Friends of the Earth Denmark. NOAH has a website in Danish, with some pages in English. The English pages are found by clicking on the British flag, which has the word "English" underneath it. The main page that is in English gives an overview of the organization, its mission statement, and purpose. There are also three links to other pages throughout the site, all of which are in English. Two of the links go to simple translations about a group within NOAH and the magazine published by NOAH. The other link goes to a page about the gene-technology group, the group's purpose, contact information, and links to

the European site of Friends of the Earth, including a link to an international campaign to stop pollution (www.sunsite.dk/noah/english).

The Danish Society for the Conservation of Nature (DN) has a website that is mainly in Danish. There is an international area of its website, which is a series of text links in English. The English page is in the main frame of the entire page, allowing the user to view whichever aspect of the organization that he or she wishes to see, while the table of contents on the left hand side of the page is held constant, no matter what section of the site is being accessed. However, the table of contents is entirely in Danish, with only one link in English, to the front page of the English section of the website. There is a link to information about the history of DN, as well as a section on financial information, and information about the organization's activities, both nationally and internationally. There are many links to information about what has happened at conferences and news articles on different topics that are relevant to the organization (www.dn.dk/inter.html).

A viewer of the site can also find information on Agenda 21, an environmental policy, which the organization is interested in supporting. However, in order to view some of the English sites, a third party plug-in, Adobe Acrobat Reader is needed. Also, in terms of accessibility, no alt tags were used anywhere throughout the site, even in the Danish section. With all those considerations aside, the site is easy to navigate through with a menu on the left hand side of the page, and links back to the original page from which a viewer started. This scheme for presenting the organization integrates the international aspects of the organization directly into the Danish site, without making any clear distinction besides the obvious language difference, between the two sites.

2.2.5 Review of presentation methods for disabilities and accessibility

Many organizations are interested in the facilitation of easy accessibility of the World Wide Web. This includes access for people with disabilities, as well as people with text browsers. There are several on-line companies and organizations that work towards the promotion of accessible websites. One of the most visible organizations is Bobby, which is a free tool that analyzes web pages (www.direct.ca/orw/findex.html) to help the page's author identify and repair barriers to access by individuals with disabilities. Bobby helps by suggesting where more information is needed on a website to allow it to interact better with special hardware, such as speech synthesizers for the blind. The Center for Applied Special Technology (CAST) created Bobby to further their mission of expanding opportunities for people with disabilities through innovative use of computer technology.

Soaring Eagle Communications is another organization that is promoting accessible web designs on the Internet (www.eaglecom.bc.ca./index.html). The organization reviews a site's accessibility and gives written reports with suggestions for improved accessibility. The group also has awareness training workshops and reports on disabilities available for consumers. A newsletter is also available from this organization. This organization takes an existing web site and improves its quality so that the disabled will have an easier time using the site. The services offered by Soaring Eagle Communications are offered with the intention of promoting and improving accessibility on the Internet.

The World Wide Web Consortium (W3C) develops technologies, specifications, guidelines, software, and tools to allow the Web to reach its full potential as a tool for information, commerce, and communication (www.w3.org). The W3C provides guidelines that are adapted each year to help with many areas of web communication, including accessibility. As part of the W3C, the Web Accessibility Initiative, WAI, pursues accessibility of the Web through technology, guidelines, tools, education and outreach, and research and development. Disabilities such as vision, hearing, dexterity, and short-term memory problems affect access, and need to be considered when making on-line material available to use for the general public. W3C gives links to the available information about web accessibility in many countries (www.w3.org/WAI/References/Policy.html).

The integration of accessibility, functionality and attractiveness all need to be combined in order to create a good website. Following the example of other non-profit groups and of guidelines that are available on the web and through government agencies is the best way to ensure a successful site that is accessible to as many people as possible.

2.3 Sponsorship via the Internet

The Internet holds a seemingly unlimited potential for growth, due to the alacrity with which companies continue to develop devices for accessing the Internet from anywhere, as well as the booming percentage of new users who are getting hooked on the power of the web each and every day. “In 1998, 110 million people worldwide will use the Internet at work and/or at home,” according to a study performed by the

International Data Council (IDC) (“Just how big will this thing get?”, Gale Group). The IDC also states, “The number of users for these technologies will more than double from 1998 to 2001,” a fact that is leading producers of goods and services to begin watering at their collective mouths to develop the most informative and effective ways of advertising their goods and services over the Internet (“Just how big will this thing get?”, Gale Group). As one indicator of this trend, the IDC continues to note, “The amount of Internet commerce will nearly double each year through 2001, when \$237 billion will change hands via the Internet,” providing even more substantial evidence that the Internet is rapidly becoming one of the hottest commerce markets around. To take advantage of these trends, it has become necessary for advertisers and sponsors on the Internet to develop and research the most effective methods for conveying and showcasing their products.

2.3.1 Advertising On The Web – Background

There are numerous ways of presenting an advertisement on the web, ranging from small advertisements that are carefully placed throughout a web page, to full screen pages, called splash pages, that appear briefly in the current web browser window after a link is clicked on and before the user is actually taken to the page represented by the clicked link. Other solutions include pop-up windows, or windows that are created and displayed over the current browser window when a page is opened or a link is clicked on within the current browser window. Also, it is possible to feature a sponsor on a website with a simple text link and a mention of the sponsor or advertiser’s

name, products, and even services that the sponsor offers. Many websites also utilize a separate page of content on their site, dedicated exclusively to their sponsoring and advertising organizations. Of all the possible solutions for showcasing advertisements on the web, the use of the ubiquitous banner ad seems to be the most prevalent among commercial, individual, and even non-profit organizations. Due to the widespread use of such a technology as the banner ad, a set of guidelines and specifications have been issued by the Internet Advertising Bureau (IAB) on the recommended size of banner ads. Below, in Figures 2.3 and 2.4 is a list of the pixel dimensions and graphical representation of these standard banners (ABC's of Advertising, IAB):

Size (Pixels)	Banner Type
468 x 60	Full Banner
392 x 72	Full Banner with Vertical Navigation Bar
234 x 60	Half Banner
125 x 125	Square Button
120 x 90	Button #1
120 x 60	Button #2
120 x 240	Vertical Banner
88 x 31	Micro Button

Figure 2.3 – IAB Standard Banner Sizes

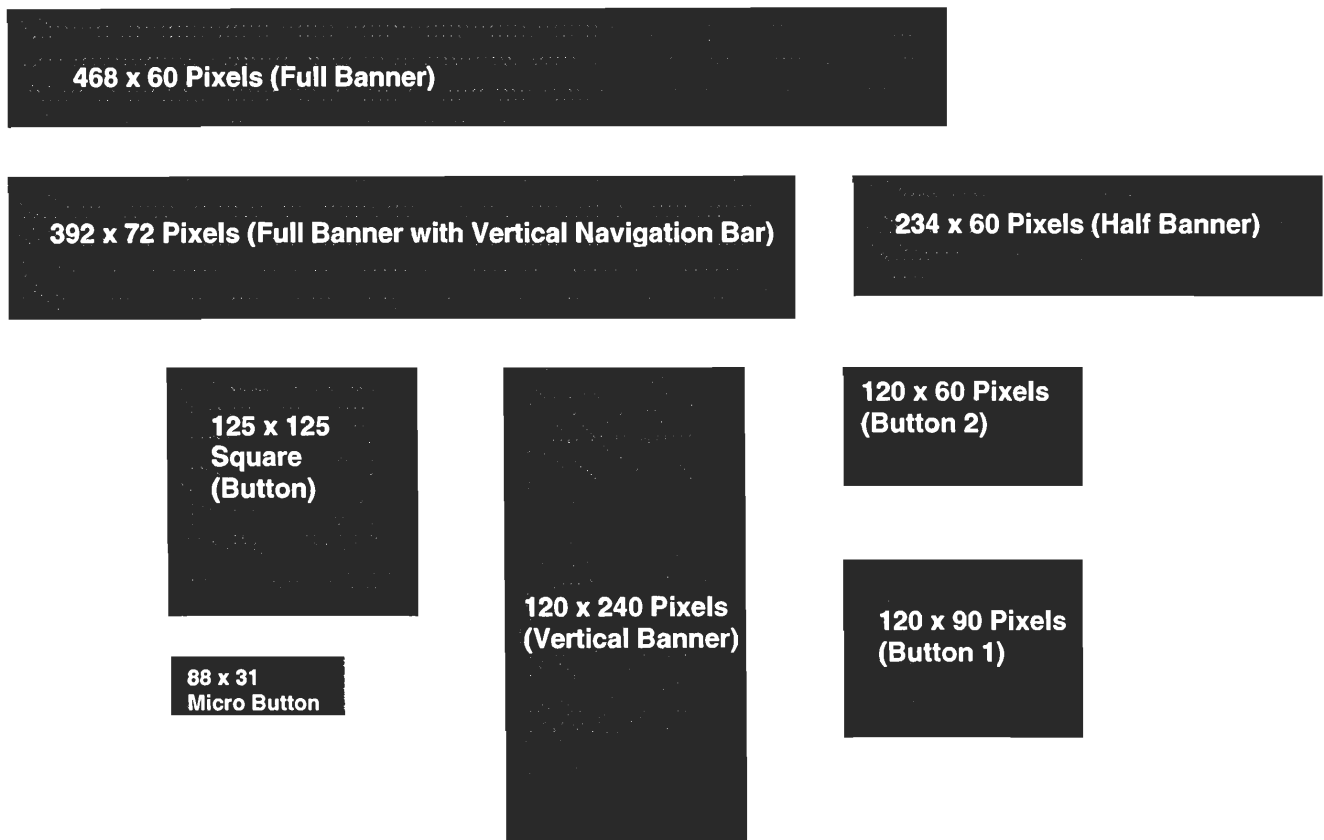


Figure 2.4 – IAB/CASIE Banner Sizes

2.3.2 Effectiveness of Advertisement Presentation

Due to the widespread use of the banner ad, several studies have been attempted on the effectiveness of the nature of the ad. The IAB issued a 1997 study that focused entirely on the effectiveness of online advertising, and the study's findings. The IAB explains:

In fact, after only one exposure, advertising online can:

- Build Brand Awareness
- Enhance Product Perceptions
- Improve Product Purchase Intent

This communications strength is in addition to the great power that online has for relationship marketing and direct sales. This is where the medium excels and

differs from traditional media, because of its power as both an advertising and direct marketing medium.

(IAB 4)

The effectiveness of banner ads and other advertisements on the Internet are generally measured in the number of clickthroughs generated by an ad. A clickthrough is the act of a web site visitor clicking on an advertisement to get more information, or to be redirected to a website that pertains to the advertisement. However, according to the IAB, the primary impact of an advertisement is not created or generated from a clickthrough. The study says, “Nearly all of the impact measured was generated without a ‘clickthrough’ to the advertiser’s site — proving the advertising power of the ubiquitous banner” (IAB 7).

3. Methodology

Given the information presented in the background section, the development of a method for ascertaining the necessary data is vital to the final stages of producing a viable and sustainable website. Moving from collected background on the numerous website design considerations into a more structured definition of the Centre's website required much planning and preparation on the part of our project team, yet resulted in the final culmination of a stylistically and contextually streamlined design of the Centre's website. The first steps towards developing a design model for the new site involve more research and an establishment of a set of principles that can be applied to the nature of the Centre's need for a new site design. A number of interviews and staff meetings were necessary to validate the direction and content of the proposed design, and once the structure of the new site was developed and designed, there exists a need for extensive testing and analysis to ensure that the finalized design does indeed meet, and possibly exceed, the organization's needs.

3.1 Content Analysis

Since the presentation and informational content of the Centre's international website garners the highest priority in this project, it is essential to develop a set of standards and a precedents from which to create the Centre's website. The most reliable, and our chosen, method of approaching the process of developing these

precedents is content analysis. Bruce L. Berg develops the best definition of content analysis in the following quotation:

In content analysis, researchers examine artifacts of social communication. Typically, these are written documents or transcriptions of recorded verbal communications. Broadly defined, however, content analysis is “any technique for making inferences by systematically and *objectively* identifying special characteristics of messages”

(Berg 240)

From this definition, it is evident that conventional content analysis has dealt with the meticulously objective analysis of written and oral communications sources, in order to develop a collective body of work that can be representative of a certain set of standards, or of a contextual message. In applying this to the project, it was useful to practice content analysis when considering existing websites related to the mission and also the organizational nature of the Centre. Given the nature of the Internet as a new, dynamic mode of social communication, it was necessary to retrofit the existing method of traditional content analysis, which deals with customary written and oral communication, to the need for developing a strong, clear set of paradigms for the Centre’s new international site. By utilizing the power and flexibility of content analysis, as well as a few other traditional methods of data collection and analysis, such as interviews, the structure of the new site was built rapidly.

3.2 Background Research

In addition to the content analysis of non-profit organizations, it was important to take into consideration what other types of organizations have done on the Internet. The simplest way of achieving this goal was to spend a substantial amount of time

viewing many different websites as well as navigating through them trying to find information one could have about the organization.

This method was also used when searching for appropriate organizations to ask about sponsoring. Because of our failure to find any non-profit organization using sponsorship online, we once again searched for any other relevant organization. When search engines were used, lists of websites related to sponsorship or advertising were the only relevant pages returned. It was through searching their sites that we were able to realize whether contacting the companies would be advisable. After searching through a few search engines, we narrowed the field of candidates to three companies. Despite our numerous attempts to contacting the companies, only one employee of one of the companies responded with helpful information. The reason for the small amount of responses we obtained was most likely due to the fact that the contact information was either the Webmaster's email or personnel responsible for clients. In order to be successful in this task, we believe a longer period of time should be allotted to allow better communication with the companies. Indeed, we were only able to communicate via email without knowing if the recipient was the right employee to contact.

3.3 Interviews

Conducting Interviews was one of our most frequent tasks. There are several different types of interviews, and we conducted different styles of interviews from individual to group interviews, all of which were in an unstructured style. These interviews provided us with valuable information on a variety of questions and concerns.

3.3.1 Interviews in the US

Before leaving for Copenhagen, we interviewed two people. The interview fulfilled two goals in our project, the first of which was practice for future interviews; a mode of ensuring that the interviews we conducted in Denmark would be effective and efficient. The second goal of conducting these interviews was to further obtain pertinent background on web development that may be unavailable from any other source, yet extremely vital to the completion of the project.

The two interviewees were WPI Webmaster, Amy Marr and WPI web designer, Troy Thompson. This unstructured interview was conducted as a group meeting in the WPI web development team's office, and since the interview was taped, it was easier for the information to be accessed quickly and more reliably, without a heavy reliance on transcript notes from the interview session. A copy of the questions asked during the interview can be found in Appendix O.

3.3.2 Audience Analysis

When analyzing the Background Information, one can easily understand that a website has to be designed for and directed at an explicit target audience. Consequently, we had to determine exactly who the website will be geared towards, our target audience. The different types of users we have considered, as possibilities were other non-profit organizations, individuals from surrounding countries looking to learn about the Centre and how it could help them. These individuals would possibly have disabilities we should account for in the site's design.

The primary method of obtaining demographics and characteristics of the site's target audience was through meetings with employees of the Centre, as well as the executives who developed this project. These meetings were, for the most part, conducted as unstructured group interviews. By conducting these meetings with members of the Centre, we developed an accurate sense of the expected audience, which enabled us to give better recommendations as to the content of the international website.

3.3.3 Group Interviews

Interviews can be conducted in many different ways, which include different types and styles of interviewing. A group interview involves many interviewees and can involve several interviewers. The interview is conducted in more of a roundtable discussion with the interviewers acting as moderators, leading the discussion, and keeping the group on track.

We conducted group interviews with the members of the Danish Centre involved with our project, which had a style similar to that of a focus group. The purpose of the group interviews with the staff was to have them discuss what information they wanted to be presented on an international website, the type of international audience that the Centre wanted to focus on and preferred styles and technical aspects of implementing a website. The debate among the staff members allowed us to obtain a diversity of personal opinions and the arguments both for and against specific actions.

Since the website has to be maintained and built by the Centre's staff, the design preferences of the Centre have to be taken into consideration during the creation of the

guidelines specific to the Centre's international website. Dynamic discussion took place because some of the lines of questioning lead to personal preferences unique to each interviewee. General concerns that face the staff members of the Centre about the international website also came out into the open during the group interviews, and can be viewed in Appendix N.

3.4 Personnel Questionnaire

A website designed to represent an organization needs to take every aspect of the organization into consideration. In order to give the best recommendations concerning the Centre's website, it was important to reach out to the whole body of employees, most of whom we could not feasibly interview. In order to achieve this goal, we designed a general questionnaire for all employees, both in Taastrup and Århus. This questionnaire can be found in Appendix C. This method of research is called action research, or participatory action research. It allows for the "participation and reflection, and empowerment and emancipation of people and groups interested in improving their social situation or condition" (Berg 178). Most applications of action research have been employed by political and consumer groups trying to develop a clear sense of the feelings and opinions of a selected target group of the population. In the applications of this project, the method has been adapted to better suit the purposes of gathering data from the Centre's staff. Action research involves four major steps; identifying the question(s), gathering the information, analyzing and interpreting the answers, and sharing the results with the participants. Through the use of the prepared questionnaire, these four steps were undertaken. We determined that information

pertaining to the international website was needed from an individual perspective, and gathered the information through the questionnaire that was sent to the employees of the Centre. An electronic message was sent informing the employees about the questionnaire, and they completed a hard copy of the document placed in their mailboxes, or pigeonholes. The information gathered from the employees was analyzed and used in the compilation of suggestions and guidelines for the implementation of a new international website. Finally, the results were shared with the participants, first through the written report, and eventually through the implementation of the new website. As Berg states, "Most action research, then, consciously seeks to study something in order to change or improve it," which suggests that this style of research forms the basis for the entire project (Berg 181).

3.5 Testing Guidelines and Procedures

A new website is not complete until it has been subjected to an extensive battery of tests, in order to ensure that the end user is able to navigate the site easily, while simultaneously maintaining a sense of the organization's mission and purpose and delivering the content in a coherent manner. Websites must also be maintained as long as they are in use; otherwise the information will quickly become obsolete and of no use to the Internet users looking at the site. A list of testing guidelines and procedures were developed to provide the Centre (and other non-profit organizations, in general) with a gauge to measure the quality of its international website. The guidelines will outline stylistic and design methods as well as technical issues that occur with the introduction of any website.

The purpose of the guidelines is to allow for an international website to be designed that will be effective and achieve the goals it has been intended to meet. The guidelines will be based on information gathered through the content analysis and through both the structured and unstructured interviews. Information, styles, and techniques that are discussed in the interviews will be the basis for the development of guidelines. The guidelines will cover information on both general website techniques, as well as techniques that will be unique to the Centre. This will allow the international website to be built and updated with ease, while ensuring that it remains an effective method for putting information out on an international level.

Structured interviews will be given in order to help determine the effectiveness of the international website. A structured interview is one that is standardized. The interviewer follows a list of questions without deviating from the list at hand and doesn't make up questions during the course of the interview. A standardized interview is one that also can be given repeatedly to many different interviewees without any changes in the procedure or questions. We will be providing guidelines for structured interviews in order to determine the effectiveness of the international website.

4. Results

Following the procedure outlined in the methodology, the following body of facts and data was collected to form the basis from which the recommendations for the website were culled. The results from the work yielded some very interesting conclusions about what elements of design, style, and content actually make a website successful in its mission of communication and transmission of information. In addition, much knowledge about the Centre was obtained through the interview process, which shone light on the actuality of the Centre's dilemma in creating the international website. It was discovered that the international audience was much more professional, a community of scholars and producers of technical aids alike, all of whom demanded a great deal of information on the Centre's capabilities and knowledge in the area of technical aids and communication.

4.1 Content Analysis

The research method of content analysis, despite being applied in the atypical manner of analyzing websites, produced a series of standards for both content and graphical layout of websites for non-profit organizations.

Since the audience and purpose of websites differ so greatly, much of the content of a web page cannot be standardized. However, some information is fundamental to all websites. This includes the mission, or purpose of the organization, and the history of the organization. Both of these are necessary inclusions, no matter what type of non-profit organization is building a website. Information about the

organization's products, such as publications or courses and conferences, is offered except when the purpose of the website is purely to inform the viewer about the existence and purpose of the organization. A section of a website for non-profit organizations is always devoted to both contact information and links to related sites.

Navigation and layout are important aspects of websites, second only to the site's content. There is not one standardized method for navigation, but there are several options that are used equally. One popular method is to have a navigation menu on the left side of the website, due to the general Western convention of reading from left to right. The other popular navigation method comprises menus at both the top and the bottom of the page. Sometimes a menu appears only at the top, but this is not commonly used, as it is an inconvenient method when the menu scrolls out of view on a long page. Neither having the menu at the left, or the menus at the top and bottom of the page, are used more predominantly than the other among non-profit organizations. Site maps are an additional method used to ease navigation, but are not used widely among non-profit groups. This is most likely due to the fact that the majority of non-profit organizations are relatively small, and site maps are usually reserved for very large websites.

The international aspect of many non-profit organizations includes the need to consider the language of the site. Many organizations do offer their site in various languages, but the maximum number of versions in different languages seen was four, with the majority only being offered in two, English and the organization's language of origin.

Other features of websites include a guest book, search engines, order forms, option of text or frame version of the site, and use of third party plug-ins. These options are used by some non-profit organizations, but are much more widespread in the business and private sectors.

4.2 Interviews

A series of group and individual interviews were held in both the United States and Denmark. A compilation of the questions are contained in Appendices C, G, I, K, M, and O; with synopses of the responses Appendices D, E, F, H, J, L, and N. These interviews helped in grasping the employees' expectations of the site, as well as allowing a starting point to brainstorm suggestions for the site.

4.3 Questionnaire

A questionnaire, as seen in Appendix C, was distributed among the employees at both the Copenhagen and Århus offices. We received a wealth of responses from employees, mainly from the Copenhagen office. They had many different jobs, but the reason an overwhelming majority work for the Centre was for the ability to help improve other people's lives. When asked whether the employees found the Danish website representative of the Centre, 80% of the responses were positive. The other 20% of responses found that the Danish website could either be greatly improved, or that it was not representative of the Centre. The same question was asked about the international website, and the respondents felt that there were deficiencies in the international website, or the employee didn't know or feel competent to make such a judgment. The

most common recommendation for changes to be made on the international website was to add pictures, graphics, and more information about the Centre as a location for international and EU projects.

In general, the most important message for the international website, as given by the employees of the Centre, is to give information about the Centre in general, to inform about the international activities in both projects and standardization work, and that the Centre has an accredited testing laboratory. The answers to questions about the most important message for the international website led into specific suggestions about information that employees would like to see on the site. The two sets of answers overlapped with specific projects and situations, such as the testing center, classes and publications, being mentioned. When asked who would use the international website, the employees all answered with one or more of the following options: other similar institutes and organizations related to the field of technical aids, manufacturers, testing centers, and disabled individuals.

5. Conclusions and Recommendations

From the information assembled in the “Results” section, it was possible to begin brainstorming and analyzing the results, to produce an organized collection of facts and recommendations for the Centre’s new international site. The information obtained in staff interviews and meetings was used to discern the status of the Centre more clearly, while also serving as a basis for the organization’s needs for the international site. A large percentage of the project work in Denmark was devoted to meetings and interviews with the Centre’s web development group (see Appendices D – N), as well as with department heads Elisabeth Kampmann Hansen and Niels-Erik Mathiassen, studying the areas of the organization that were more vital to the international target audience. From such discussions, it was possible to find that the target audience was far different from that of the national website; that the current international website did not meet any of the expectations set forth by the Centre, and was perceived to be rather embarrassing to the organization and its image as an international player in the technical aids research, testing, and development market; and finally that there were several areas of the organization, which needed to assume greater prominence on a newly designed international website. Given these results, the project shifted focus to assume the formulation of the following directives and suggestions that would combat the inadequacy seen by the Centre’s current international website. One of the important issues concerning websites we discussed in the background information was the accessibility concern. Because the audience for the international website is a professional one, concerns about text browsers or speed of download were not regarded to be as crucial as the professionalism of the site.

5.1 Status of The Centre and Its International Audience

When designing a web page, determination of the audience is vital in order to know what materials are relevant and should be included in the website. Determining the intended audience of the Centre's international website was an important aspect to furthering the work done towards determining content and graphical layout. Finding out the target audience was the first step to be taken towards the completion of this project.

The primary way that the target audience was determined was through interviews and meeting with employees of the Centre, including those who developed this project. Also helpful were the responses from the employees, obtained through the questionnaire (See Appendix C). Having a specific audience to target is important for a website because there are so many groups of possible users. Suggested audiences include foreign producers, testing centers, sister organizations around Scandinavia and Europe, scientists and researchers, students, disabled people, and users of technical aids. When asked who specifically was the target audience, many respondents offered different answers, so the target audience was actually determined more by finding out what the main message of the international site should be. Through the interviews, it was found that the most significant features that the international website should include are: methods for attracting European partners for research and development projects, stressing the fact that the Danish Centre is the national authority on technical aids, and promoting the testing center. These messages led to the determination of the target audience as being a professional group of users looking for information on what the Danish Centre had done and is capable of doing in terms of research and development

projects and the testing center. The general users will still be able to learn about the Centre from the international site, but the site's focus toward a professional audience will create a more formal website.

5.2 Suggested Site Content

From the collection of ideas from the Centre's staff, as well as the possibilities viewed on various non-profit organizations' websites, the following sections of content were deemed necessary in the finalized version of the international site. By organizing the key information about the Centre into four naturally suggested content areas, the appearance and appeal of the site is greatly streamlined and professional, leaving the user with a more rewarding and informative visit to the Centre's website. In addition to the necessary inclusions, a section on other possible content considerations has been included to provide further options and arguments for design and content options for the international site. Since the Internet is inherently dynamic, the exclusion of this considered content might require some rethinking as the status of the Centre, or the nature of the Internet as a whole changes.

5.2.1 Research and Development

This section of the site is one of the most integral to the creation of a comprehensive and successful international site for the Centre, as it provides the greatest percentage of information about what the Centre actually does on the international level, yet was not included in the existing international site. In addition, the

European Commission and national sources, in the funding of project work, provide a large percentage of the Centre's annual income. Therefore, one of the goals of placing a high priority on showcasing the Centre's research and development is the prospect of generating more projects and research work for the Centre, to increase annual income. Another one of the inimitable features of the Centre is its work with the European Union in the development of standards for products. Other research and development areas of considerable note for the website include the projects in which the Centre participates, ranging from virtual reality work for disabled people, to developing and testing equipment to assist the disabled in using computers and other electronic devices.

After deciding that the research and development section of the site would be one of the most important sections of the international site came the task of how to present the information. From the discussions with various employees, we agreed on two plausible ways of making the projects available. The first would be a database of all projects supported by a search engine based on keywords regarding the titles, dates, organizations involved or members of the Centre having worked on the project. This tool would be a very powerful one and would allow a long-term solution. Indeed, such a tool would enable the Centre to add many projects before having to develop a new database. On the other hand, developing the database would take a good amount of manpower.

The second option we considered was a catalog, in which the projects were organized by year of completion. This option seemed much more viable because of the small number of projects the Centre is dealing with at this time. In addition to this small number, the research taken part in five or ten years ago will most likely not be of much

interest to the organizations seeking new partners for today's projects. To display the projects in the best way possible, and captivate the interest of users, we suggest that the research and development page be organized, starting with the newest projects first, and displaying a short abstract of the project below the project's title. The title of the project would also be a link to an individual page devoted to each project containing the organizations who sponsored the project, the employees of the Centre involved and other information relevant to users such as a PDF file containing the entire report in English.

The amount of update necessary for the "Research and Development" section of the site is relatively minimal, however, when a new project has been completed, the project information must be added to the projects catalog, and the relevant sponsoring organizations and sponsors must be added and linked to on the "Sponsors" and "Links" pages. This update will require very little maintenance beyond some typing and modifications to the HTML code.

5.2.2 Testing Laboratory

Another crucial inclusion for the development of the international site is a thorough description of the facilities and services available in the Centre's testing laboratory. The Centre has a test center accredited by the European Union, which means they can deliver paperwork that guarantees products have been tested and passed according to European standards (also called the CE mark or standard). The Centre also does extensive research and testing for the ISO standard, in addition to the products undergoing testing to obtain the CE seal. Most of the producers that currently

use the Centre to test their products come from Scandinavia; however, the organization has expressed a desire to obtain clients from other regions of Europe, and North America as well. Currently, the biggest competition for the Centre's testing lab is Germany's TUF testing laboratory, which has the capability to test a diverse range of products, from toys to cars. The Centre's biggest advantage is that it specializes expressly in technical aids, and has a staff of occupational therapists working on site to ensure standards are met clearly.

It is necessary to showcase and market the lab's capabilities and accreditations to entice more clients to bring business to the Centre. The positive aspects of this strategy suggest that there will be an increase in the international awareness of the testing center, including the understanding that the Centre is accredited for providing clients with the testing and recommendations necessary to obtain the CE seal for their products successfully, a necessary step for producers who wish to sell their products on the European market. This increased awareness would logically suggest that many foreign organizations want to use the testing center for product testing, leading to more business for the Centre, and therefore more income. One of the most important features to also discuss is the ability of the Centre to provide not only the actual testing services themselves, but more importantly the Centre also can offer its clientele the necessary knowledge and assistance, through the form of consultancy, to help clients garner accreditation and approval for tested products that may not be entirely compatible with standards such as the CE seal. Possible factors, which would suggest that a website feature section on the testing center should be thoroughly considered, ranged from an inability on the Centre's part to handle an increase in business for the testing center, to

the concern that advertisement on the international site could increase the already fevered pitch of competition in the technical aids testing market. However, the benefits of providing the crucial information on the laboratory's work and available services far exceed these marginal concerns.

One method for presenting the information in the testing laboratory section includes the use of supplementary videos, which should be small files that could be optionally downloaded by the end user, or sent to the user through a process called "streaming," in which the user receives data from the Centre's server continuously, allowing the user to watch the video on screen while it is being downloaded. The inclusion of a short video showing the testing lab's facilities, as well as possibly including a sample test as a separate short clip, would be beneficial to producers of technical aids wishing to find out more about the capabilities and equipment of the laboratory, in addition to being helpful to the portion of the target audience formed by organizations wishing to choose the Centre for future cooperative project work in research and development. In questioning the accessibility of this content, one helpful solution is to provide a short text description of the material included in the brief clips, directly underneath a small "thumbnail" (which is a small graphics file that usually contains a screen shot of one frame of the movie) image of the video clip that could summarize the clip at a glance, while also allowing the user to click on it to download the movie clip. In addition, a separate link to the movie clip should be provided just below this description, and highlighted to indicate to the user where the movie can be downloaded.

Since the information on the testing facility is relatively static, this section of the site will require little or no maintenance, beyond an occasional update to standards and accreditations listed on the page that may change with time.

5.2.3 About the Centre

A fundamental inclusion, in order to present the Centre as an organization of well trained, experienced professionals, is a section called “About the Centre,” which highlights the nature of the organization by giving a brief history and summary of the Centre’s activities since its inception. Since the Centre is a unique non-profit group in so many ways, it is very important to explain to the international community the multitude of unique features that are available with the Centre and its staff. In order to do so, the first bit of information available on the page should be a concise history of the organization, as well as a clear statement on the nature of the Centre’s work on a national level (and also on the international level), since it exists as the national authority in Denmark on technical aids for education and rehabilitation. Following these facts, the insertion of a succinct section detailing the accreditation and capabilities of the Centre, would be the next most logical step in building the image of the character of what the Centre is on an international level. This section of the site should also include a listing of organizations and professional societies relevant to the technical aids market, that the Centre is an active member in. At the bottom of the “About the Centre” page of the site, there should be three links available, in form of either text links or graphical buttons. One link should be labeled “Staff,” and should lead to a subsection of the “About the Centre” page, which is further subdivided into the following links that lead to department pages of the

names and photos of the Centre's staff: "Management and Administration," "Research and Development," "Rehabilitation and Technical Aids," and finally "Communication, Technology, and Special Education." This would allow users to isolate the department and/or staff member that they are looking for quickly, without burdening the users by requiring them to scroll through an endless array of names and faces. Another link available on the "About the Centre" page should be labeled "Contact Information," a page that would allow visitors to the site to send feedback instantly to or get information from the Centre's contacts in the various departments or areas. This is a very nice feature, which is already currently employed on the international site, as well as several of the other non-profit organizations' websites examined in the content analysis phase of the project. The third and final link on the "About The Centre" page should be called "How to Find The Danish Centre," and when clicked, should send the user to a page that gives a map for the two locations of the Centre, as well as travel instructions for getting to the Centre by bus, train, or car. This feature allows people to visit the office(s) more easily, since people can refer to the website for directions instead of having to have the information sent to them through other means like e-mail, fax, or regular mail, or even given them over the phone. Maps also allow a user to understand where the organization is located geographically, making the feature a nice option. If implemented, there would also be no updates needed to maintain the information, making it a useful option for both the international website, and the national one as well. In addition, it is extremely helpful that maps for both the location in Århus and Copenhagen are accompanied with a brief description of the different services provided at the respective

locations, such that users are prevented from the possibility to confuse the separate locations.

In maintaining this section of the site, a moderate amount of maintenance may be required when employees arrive or leave the Centre, if the locations in either Århus or Høje Taastrup change, if contact information changes, or if any major aspect of the Centre itself changes with time. However, based on current analysis, this type update will require very little work, since none of those items are frequent occurrences.

5.2.4 Links

This final section of the site was mentioned by several of the Centre's staff, in various modes of suggestion on both the questionnaire and in interviews. The overall consensus of the Centre's staff holds that this section of the site would be an invaluable tool in disseminating information about the not only the international technical aids market, but also the Danish technical aids market as well. Another great benefit of such a section would be the ability to link the Centre to its sister organizations in Norway and Sweden, as well as to other sources of information that are pertinent to the international technical aids community. In addition, this section should feature a short description of NetJob, similar to that provided in the "About the Centre" section, as well as a link to NetJob's website, since the organization exists as an independent entity from the Danish Centre. Professional organizations and societies of which the Centre is a member, such as AAATE (The Association for the Advancement of Assistive Technology in Europe), should also be linked to in this part of the website, as well as sites of organizations such as the EU's homepage, with which the Centre is an active

participant . An important footnote to the “Links” section would be the need for the Centre to ensure that the linked sites reciprocate as many of the links as possible. That is, if the Centre provides a link to an organization, then the linked organization should be asked out of common courtesy to provide a link on their homepage to the Danish Centre’s site, in order to promote and reinforce not only the image of the Centre, but the communal sense of the technical aids market. The “Links” section will require some update, as new organizations become involved with the Centre, or as the Centre participates actively in some other new professional society or cooperative.

5.2.5 Content Considered for International Site

When determining what information to include on a website, some of it is bound not to fit or be appropriate for inclusion. Many issues and topics were considered for use, but were not included in the final recommendations of content for the next evolution of the international website. The following is a discussion on topics not chosen for inclusion in the international website at this time.

Non-profit organizations, like any other business or organization, want to show the work that they are accomplishing to the public and to the people who would be interested in the work. A significant part of the Centre’s work is put into the creation of books and other publications giving information about technical aids and the technical aids market. This appears to be a section of items that should be included on the international website. Displaying the publications allows viewers to see what is happening in the Danish technical aids market and to see Danish products and innovations in that area. Since most of the publications are for sale, displaying them

allows the potential for more sales and simply permits viewers to see what the Danish Centre is producing. The Centre's publications are all shown on the national site, but problems arise when considering showcasing the publications to the international audience. The largest issue comes from the fact that almost all of the books and publications are written exclusively in Danish. This becomes a problem due to the fact that Denmark is a small country and few people outside of her borders can actually understand the language. So even when people may be interested in the topics, which is not always the case, as many of the publications deal with issues relevant only on a national scale, they will be unable to read and understand the publications. English translations of most publications are not readily available and the time needed to create translations is prohibitive due to the probable small demand. If and when books and publications are available in English or other languages besides Danish, they should be displayed on the international website. The best way for such an inclusion on the international website would be the creation of an additional section of the site for the books and publications that are available and ready for an international audience.

Another to which the Centre has devoted much energy is the creation of classes and courses. Information about the classes is currently available on the Centre's national website whenever the classes are offered. Displaying them on the website allows viewers to see what types of activities are happening and are important in Denmark and generates more awareness about the broad spectrum of the Danish Centre's activities. Putting information about the classes on the website also allows for other professional organizations to see what the Centre is doing. If course information were available on the international website, it would allow professional organizations on

an international scale to see what the Centre is doing. A problem is created by showing classes on the international website. Users of the international website are using the English site because they do not understand Danish, or else they would simply use the national site. Currently, all classes offered by the Centre are offered only in Danish. Any foreign party interested in learning more, or even attending a course, would be unable to understand the language, and would not gain anything from the experience. Also, as the audience of the international website is intended to be a more professional group of users than the national site; the current course content may not be relevant to that target audience group. In the future, however, if classes or courses are offered in English, the technical aids international language, and cover topics that are relevant on either an international or professional level, then they should be displayed on the international website. As is the case with the books and publications, an additional section should then be added to the website. In addition it would then be viable to inform international viewers about the content of courses that are offered in Danish, in order to provide a resource to other information centers offering courses about technical aids.

An idea that was considered as an inclusion on the international website was the option of having a guest book available. This would allow visitors to the site to post comments about both the layout and content of the site. Some programs even allow for the comments to be seen by any user of the site, not just the implementer. This would be a good method for learning about both the people who use the website, audience analysis, but also to get outside feedback on the quality of the website. This technique is used by some other non-profit organizations that were examined for general

guidelines for the creation of non-profit websites. When the Danish Centre's individual needs for an international website were examined, several negative issues were raised. Since one of the major goals of creating the international website was to keep the amount of manpower needed to maintain the website to a minimum, a guest book did not seem like a viable option. The initial implementation of a guest book does not require a lot of work, but the need to monitor and edit posted comments seems to be too much of an investment in time. The time used to monitor and edit the postings cannot be eliminated because some people like to post rude and inappropriate messages on guest books that are visible to everyone. Another consideration about including a guest book on the international website was the level of professionalism that it would portray to the users. Despite being used by some non-profit organizations, the type of audience the Centre is looking to attract with their international website is a professional group dealing with international research and development. It was decided that, to this group, a guest book would lend a less professional air to the web page and so the option was not included in the recommendations.

Currently, there is an E-conference option available on the Danish national website. This program offers the opportunity for open, public discussion as well as closed discussions on one specific subject. The implementation of the E-conference software is a relatively new addition to the national site, so as yet is still not very widely used. Since the program is on the national website, its use on the international website was considered. Several positive results could be created from the implementation of an E-conference option, including a group of regular visitors to the website. However, some negative aspects were also considered. There would be an increase in the time

needed to maintain the international site, since someone would have to be set up as the discussions' moderator. Another issue was the lack of having relevant topics for discussion, especially since there is an e-mail conference provided by AAATE, comprising individuals throughout Europe in the technical aids field, already in existence with the topic of discussion simply being the area of technical aids. Due to the already existing e-mail conference, the low amount of discussion it generates and the probable low use that the E-conference software would incur, this idea was deemed unnecessary for the international website.

Another suggestion gained through the questionnaire was the possibility of putting the reports from all of the Centre's departments on the international website. This would have the benefit of creating awareness about all of the Centre's departments as well as giving details about work done at the Danish Centre. The detrimental aspect of this idea is that the information contained in the departmental reports is simply not interesting, in general, to an international audience. However, knowledge about the existence and purpose of the different departments is important and is included in the "About the Centre" section of the international site.

One of the most interesting features of the Danish website is their online database of technical aids. A link to the database was another idea brought up in discussions with members of the web group (see Appendix N). Having the database available to International users would evidently promote Danish technical aids, which is one of the goals of the Centre. Unfortunately, navigation through the database is available only through text links, in Danish. After trying to navigate through the database using our modest knowledge of the Danish language, we realized it would be

virtually impossible to find helpful information, mainly because there are almost no pictures associated with the products. We found the database would be a very good option available for the site once the pictures of products are made available for navigation purposes. We also recommend that the database be translated in English so Danish products gain awareness among viewers on the European market.

One possible option considered for the homepage involved the use of an initial language selection page that is displayed in either a pop-up window, or in the first screen displayed to the user when he/she accesses www.hmi.dk. This option would involve the display of two icons, perhaps a Danish and British flag, that would allow the user to choose whether the Danish or English language site is the more applicable site to the user's tastes. By providing the user this option, the existence of both national and international sites is established immediately, as well as allowing the user an immediate option in choosing which site best fits his/her preferences. However, the negative aspects of this option greatly outweigh the benefits provided. Most importantly, this option gives too much prominence to the international site in the eyes of the Danish audience, and since the Centre is a national authority and organization before all else, the emphasis should remain entirely on the national side of the operations. This includes the possibility that a language selection page would incorrectly portray the Centre as an international organization rather than the national authority that it is, thus losing the spirit and mission of the organization to serve the Danish audience above all. The option may also serve to annoy users of the site, both Danish and internationally, as frequent users will find it bothersome and hassling to click on the selected language over and over again. In addition, such an option would demand that the international

site's content be updated and refreshed much more often. Since one of the main goals for developing the site is to minimize the amount of manpower needed to maintain the international site, this option can immediately be eliminated on those grounds alone.

5.3 Compilation and Design of Homepage

Given the information obtained through the staff interviews and questionnaires distributed, it was possible to develop a working model of the structure of the homepage and its necessary content. Since the first and foremost goal of the site is to increase awareness of the Centre, as well as the mission and capabilities of the Centre, it will be helpful to display the organization's logo and name prominently at the top of the page, as a header for the entire site and not just the homepage. This technique is currently utilized on a somewhat primitive level on the existing international website; however, the header currently features only the name "Danish Centre" rather than showing the Centre's name and logo, which is also a key player in the development and enhancement of the Centre's international reputation and identity. Since the Centre's logo is already identifiable on an international scale in the technical aids market, users of the site will be able to associate with the Centre immediately upon arriving to the site. After examining the nature of the Centre through the interview process, it was evident that the current homepage for the international site lacked an articulate statement on the international identity of the organization. The mission and goals of the organization should stand first and foremost on the international level. One statement vital to understanding the Centre is that the organization stands as the national authority on technical aids for rehabilitation and education. In addition, it is necessary to highlight the

Centre's main objective of improving the quality of life for disabled people through the continual development of advanced technical aids. Other crucial facets of the organization's international presence that should be provided on the homepage include unique features of the organization that make it "distinctly Danish," so to speak of the high quality that is associated with the healthcare system in the Scandinavian countries like Denmark. This would include a brief snippet of the details of the organization's role as a research and testing facility, a feature that is common only in Nordic technical aids authorities such as the Centre and its sister institutes in Scandinavia. In addition, a brief snapshot of the unique nature of the technical aids market in Denmark could be provided, in order to entice the user into clicking further into the site to learn more information about the actual market and especially on how the Centre actually functions in such a market. As with many of the other sections of the site, the homepage will likely change very little with time, as only major changes to the status, logo, name, or mission of the Centre will warrant further update of the site's "front door."

5.4 Layout and Style Considerations

Several possibilities of presenting the Centre in a layout and style, which is consistent with the professional image of the organization on the international level, have been considered in the process of final selection of one clear, concise layout that most effectively communicates the reputation of the Centre. To simplify the look of the site, the Centre's logo and name should be prominently displayed at the very top of all pages. This provides a constant frame of reference for the user, since it quickly identifies all content found on the site with the Centre.

In addition, the use of a single graphical navigational menu on the left side of the page would assist in creating a friendly user interface that is held constant throughout the entire site. As was mentioned in the background information, most users in the international community will be familiar with and accustomed to the method of reading web material from left to right, naturally suggesting that the left-hand side of the page is the most logical place to begin the navigational portion of the site. The menu should include buttons that are labeled for each section of the site, in order to establish a clear sense of the organization and structure that the site employs to convey the information contained within its pages. To give the site a professional, yet visually enhanced feel, the navigational menu should employ a method that allows a certain level of user interaction; for example, one possible suggestion is the use of “rollover” graphical buttons, which are buttons that change their physical appearance, in order to show that they are being chosen when the cursor passes over them. By developing a level of user interaction in the site, not only does the end user have an appreciation for the interesting look of the site’s navigational tools, but also the user feels like he/she is in active control of the process of searching for and obtaining information.

Another aspect of the current international site that should be remedied is the lack of graphics and illustration that accompany many of the sections on the Danish national site. By providing small photos or illustrations that are relevant and pertinent to the topic being presented at hand, the user is given a break from the weighty and intimidating sight of pages and pages of endless texts that extend down on the page. This technique, as previously stated, is being successfully employed by the Centre on

its Danish website, and successfully accomplishes the goal of presenting relevant information in a more visually aesthetic fashion.

5.5 International Considerations

One issue that has to be discussed in any International document, especially in written material, is the range of languages with which to communicate. In order to reach out to the entire International community, a written document should be translated in all languages. Fortunately, for international diplomacy, a few languages such as English, French, Spanish or German are more widely used than others. Since the object of the Centre's International web page is primarily to reach out to European countries, we could recommend to have a translation of the International website in at least four languages. On the other hand, all research and development projects have traditionally been written in English, and it remains the most widely used language used on the Internet and in the international technical aids market as well.

Having a version of the international site in more than one language would entail much updating, for any change would have to be repeated in every version. In order to remedy this situation without estranging non-English readers, we recommend the site contain a link to an online translator. Despite this technology not being fully adequate, this option embodies and satisfies the low maintenance goal while providing one way to clarify some information to those users who cannot fully understand English.

5.6 Sponsorship Debate

One of the important objectives of this project was an evaluation of sponsorship on the Internet and a discussion of whether it would be advisable for the Centre's International website. When searching the Internet for non-profit organizations using sponsorship on the Internet, we did not find a single example of such a practice. This made it hard to compare any recommendations we might have to an existing example. Through discussions with the employees of the Centre, we rapidly understood why a non-profit organization, especially one like the Centre who also works with professionals, would not want to promote other companies or organizations.

A non-profit organization has a mission to improve the quality of life in general. It is then easily understandable that the Centre should not promote any products that cause harm such as cigarettes, alcohol, or other unhealthy products. In addition, the Centre's work with disabled people and their helpers binds them to a higher ethical standard. It would not be judicious to show banner ads for an event or type of activity that some types of disabled people could attend or participate in, but rejecting other types of disabled people in the process.

In addition to the sponsoring of inappropriate organizations or products, promoting or associating with companies has a major drawback: being associated to whatever the partner achieves, or fails to achieve. Indeed, a frequent user of the website would often read or be exposed to the same banners, associating the sponsor with the Centre. If the company sponsoring had some responsibility in a crisis, such as an oil spill, an airplane crash or the laying off of hundreds of employees, there is little doubt the user would associate the Centre to that crisis.

An alternative to limit the risk of bad image, while progressing in the goal to showcase Danish organizations and products, would be for the Centre to look into some of the producers that use the testing facilities for sponsors. If the Centre then decided to only promote those Scandinavian producers of technical aids, some would argue for sponsorship online. Unfortunately, this option would also entail great risk in becoming detrimental to the Centre. Indeed, promoting the existing clients of the Centre would most likely push away their competitors who are potential clients for the testing facilities. If all producers had an equal chance to advertise on the Centre's site, the existing clients would not appreciate their competition being advertised by the Centre, their partner.

In addition to the relational problems with clients and potential clients, the Centre would risk losing credibility by advertising for producers. Indeed, the Centre has taken part and will take part in many projects whose goals are to develop standards for technical aids. Advertising for the current and future producers of these products would certainly lead some into imagining the existence of an unethical partnership, despite the Centre's strict policy on the matter. There could also be suspicion about whether the Centre tests aids for the CE mark with the same standards depending on the producer.

It seems that the only precaution before launching sponsorship online would then be to choose the sponsors the right way. In addition to that considerable task, the manpower involved in maintaining the site would be far greater than what is desired. Indeed, a sponsor is interested in a site that attracts users but mostly by a site that changes often so the user comes back often to experience the changes, and be exposed to the banners. In addition to the update and maintenance of the site, the

Centre would have to deal with determining prices per hit with the sponsors and keep track of all the information in order to profit from the sponsoring.

Despite all these drawbacks, the main purpose of sponsoring is earning money. According to the answers we received from a professional in the online sponsorship business, Liquid Advertising (www.liquidadvertising.com), a typical price for a thousand pages viewed would be \$ 0.50 (4 DKr), with a minimum of 100,000 hits. Our contact, Will Akerlof, also said there are some negotiations up to 60 times higher than this, but the Centre would most likely not earn that much at first. When considering the Centre's current traffic (see Appendix P), one can notice that there were fewer than 40,000 page requests for the month of March 2001. After verifying with Søren Aalykke that these numbers were a fair representation of the traffic for one month, we could conclude that if the Centre had a banner on every page of its site, the revenue from advertising would average twenty dollars (or eighty Danish kroner) a month with a typical sponsor. These figures are optimistic in the sense that if the Centre were to use sponsoring, we recommend keeping the banners to a few pages.

In addition to this relatively small amount of money earned, the Centre would gain recognition through sponsors, possibly increasing the professional image it is trying to give with international site and most likely develop a network through the sponsors.

A different type of sponsoring, however, can be developed on a website. That is a charitable type of sponsoring inviting organizations to donate money to the Centre. This can be done either through the organization giving money to the Centre every time a user hits a button on the site entitled "make donation" or simply through a form inviting individuals to make a promise to give, as well as their contact information so the Centre

can contact them. These types of donations can be very successful if implemented and advertised well but we do not recommend them for the international site, as it would lose a sense of professionalism, almost giving the impression that the Centre is in financial difficulties, which might frighten potential partnerships. On the other hand, soliciting users to donate money through a sponsor could be a very good option for the Danish site as it is primarily individuals and not organizations that visit the site. Offering the individual donations would most likely not be helpful for Danes feel they already contribute to the Centre and other such organizations through taxes.

After considering all of the above arguments, we came to the conclusion that traditional online sponsorship was not a viable option for the Centre. On the other hand, recognizing the different organizations that are associated to the Centre through research and development projects would be cordial to those organizations and helpful to other organizations looking for an idea of who the Centre's partners are. After discussing many different options, it was decided that the best way to do so is through a page of the site dedicated to sponsors. A link to this page should be included at the bottom of the "Research and Development" page. The content of the "Sponsors" page should be an alphabetical list of the sponsors on the leftmost column of the page, opposed to a column of projects that each listed organization has been involved with. The title of each project should be a link to the specific page dedicated to that project, offering a possibility to the user to view the project description and members involved. The name of the sponsor could be a link to their website, but we recommend that a link to the organization only be included in the project page, so the user is forced to view details of the project(s) the sponsor – and the Centre - was involved in.

5.7 Testing Recommendations and Future Suggestions

Once the Centre has implemented the site, a few recommendations and procedures will be helpful in ensuring the success and highest level of communicability of the new international site. The first step, once the layout and graphics work has been established, is to view the site on several different computers and operating systems to verify that the color and layout are consistent, since various computers are likely to have different screen resolutions, color capabilities, and other general tweaks that may allow one user to view the page in an extremely different manner from the next. Another aspect to this step, once the site has been drafted into a working revision, is that by also using several different versions of web browsers to view the site (for example, versions 3.x, 4.x, and 5.x of both Netscape Navigator and Microsoft Internet Explorer) both graphical and textual alike, it is possible to guarantee not only accessibility by all visitors to the site, but that the Centre's pages are displayed exactly as they were designed to be viewed. This fact alone is proven to make or break a website in the user's eyes. During the design and testing process, all graphics should be optimized, such that the download times for each page are kept to a maximum of 25-30 seconds per page over a dial-up modem connection. This number can serve as a guideline for a typical page, with a few small photographic images and a few paragraphs of simple text. Pages that include larger images, such as elaborate graphical menus, or lengthy reports (typically of 5 pages or more) should be tested to make certain that the user's attention span is targeted to the information being accessed, so that he/she will not be likely to cancel the download from frustration over long download times. Once these fundamental

suggestions are met, the site should be showcased and discussed in a meeting of the web development group and the Centre's executive staff, including the Director, Erland Winterberg, and department heads Niels-Erik Mathiassen and Elisabeth Kampmann Hansen, to assure that the Centre's image is professional, complete, and impressive per the suggestions presented above. In particular, elements such as content, first impressions of the site, and ability to communicate the Centre's message and capabilities should be verified to substantiate the viability of the site's design and implementation. Once the site has been approved in a majority consensus of the web development group and executive body of the organization, a meeting of the Centre's staff will be necessary to showcase and highlight the new, approved design of the international site. In particular, the new design, content, sections, and special features of the site should be given prominence during this meeting. By establishing a familiarity with the appearance and appeal of the new international site, and informing the staff about the capabilities and information available on the new site before the site is actually published for the world to see via the Internet, word of the resources of the new international site can be naturally and more smoothly disseminated to the clientele and organizations that are targeted by the international site, and are in frequent contact with various staff members at the Centre. In addition, once the site is published to the Internet, it will be helpful for a formal press release type statement, concerning the existence of the new and improved international site, to be issued by the Centre to the various international contacts and professional organizations it has an active role in, so that a positive awareness and curiosity about the Centre is generated in the international technical aids community, on the Centre's behalf. Once the site has been

live for approximately a month, it will be helpful for the Centre to gather feedback from its target audience on the effectiveness of the new international site. An informal survey prepared by the Centre for the members of its international target audience is one possible method for soliciting feedback on the site. The survey can be solicited in any number of mediums, whether via phone conversations, e-mails, or through more traditional forms of professional communication, such as regular mail and fax. Interviews of a selected sample of the target audience may also yield helpful results, but no matter what method is utilized, the results should give clear indication of the audience's perspective of the effectiveness of the website in communicating the Centre's message and capabilities, as well as the ease of finding information on the site. The achievement of the mission of the international site will indeed be shown in such follow-up procedures as these, thus verifying that the site has been well considered, well designed, and successful on an international level.

6. Recommendations in Brief

In summary, the following recommendations should be considered by the Centre during the design and creation of the new international website. The site's content should be divided into four main sections: "Research and Development," "Testing Laboratory," "About the Centre," and "Links." Within the "Research and Development" section, there should be a concise summary of the unique nature of research and development projects done by the Centre, as well as a link to a project catalog that lists the various projects that the Centre has completed over the past few years. In the "Testing Laboratory" section, there should be an article written to highlight the accreditations and capabilities of the lab, as well as the use of images and videos to additionally provide the user a glimpse into the features that the testing laboratory has to offer. Since the Centre is also capable of providing consultancy to help its clients pass the testing required for such standards as the CE mark, it is crucial to include a synopsis of these qualifications as well. The "About the Centre" section will be a comprehensive presentation of the history and character of the Centre; a brief mention of the unique nature of the Danish technical aids market; a discussion of the qualifications of the Centre's staff and contact information; and finally, a link to a page where the users of the site can find a map and directions to each of the Centre's two locations. In the "Links" section of the site, there should be several links to sister institutes, professional organizations, NetJob, and any other organization that the Centre is actively involved with. In addition, it is suggested that the Centre asks the linked organizations to reciprocate this favor by providing links to the Centre's site on the linked organizations' own websites.

For the Centre's homepage, as well as all other pages on the Centre's site, the organization's name and logo should be prominently displayed at the top of the page. In addition, a navigational menu, preferably on the left side of the page, should be utilized in all areas of the site, starting with the homepage. The content of the homepage should consist exclusively of a mission statement that highlights the organization as the national authority on Danish technical aids, as well as its mission to improve the quality of life for the disabled population through the improvement and research of technical aids.

The site's layout and style should maintain professionalism and accessibility above all other considerations. Through the use of features, such as a header at the top of the page with the site's logo and name, and a navigational menu that is held constant as well, then these goals will be more easily achieved. Also, it will be necessary to ensure that the navigational features of the site provide some interactive features to ease the user into the use of the site, and make the visit more pleasurable. One suggestion that is clearly needed to help spark interest and usability in the site is the use of graphics to help supplement the information being presented on the site. In addition to serving the professionalism of the site, these suggested elements would improve the visual aesthetic of the site, creating a successful mode of communicating and presenting the site on an international level.

When considering the sponsorship of the site, it was determined that at this time, it is not a viable option for the international site. Once the site has been created and designed to look exactly as intended on a variety of browsers and computers, several methods for ensuring its success will be necessary. The first step should involve

executive approval of the proposed design and content. After receiving approval in that step, the site can be taken to completion, at a meeting in which the staff of the Centre is introduced to the site before it is published on the Internet. A press release concerning the publication of the new site should then be sent out to the Centre's contacts and clientele in the technical aids market. About a month after the site has been on the Internet, it will be useful for the Centre to solicit feedback from a selected portion of the target audience, to ensure the successful operation of the new international site.

Appendix A - The Danish Centre

The Danish Centre for Technical Aids for Rehabilitation and Education is a non-profit national information and resource center.

The Danish Centre aims to contribute towards the creation of equal opportunities for disabled people within the areas of rehabilitation, assistive technology, special education, and accessibility of physical environment and ICT (information and communication technology).

Efforts are carried out on a national as well as an international level in cooperation with disability organizations, government authorities, institutions, research and know-how centers, local networks, manufacturers and suppliers.

Although it has sister institutes in Norway and Sweden, Rikstrygdeverket and Hjälpmedelinstitutet, Hjälpemiddelinstittet or HMI works independently in Denmark.

The Centre has two equally important offices in Denmark; the first is located in the outskirts of Copenhagen whereas the second is in Århus, located on Jutland. The reason the Centre is divided in two parts is historical. Indeed, the two locations used to be separate institutions until they united in 1992. The Copenhagen office has been in charge of mobile technical aids while the Århus location has been in charge of disorders based around speech, hearing, and motor skills deficiency.

The Centre's staff is composed of people in several different departments including management and administration, research and development, rehabilitation and technical aids, technology, communication and special education, as well as NetJob. For relevant information gathered from informal interviews, see appendix C through N.

One area into which the Centre puts a lot of effort is its database of products. The staff has tried to make the database a comprehensive collection of all the technical aids that are currently available on the market in Denmark. The database is intended mainly for professionals to allow them to choose the best possible technical aid for a disabled person, but the database is available on the Centre's Danish website with full access for anyone who wishes to use it. For easy use of the database products can be search for by a key word, type of product or by the product's producer. Pictures of some of the products are available, currently only if the producer is willing to pay for the picture to be placed on-line.

The financial situation of the Centre is not a very complex one. Due to its non-profit status, the Centre's goal should not be based on financial results except that running the Centre is not a cheap activity. At first, the Centre functioned solely with the money granted by the counties, an amount that currently reaches 14 million Kroner, but with time, HMI needed more money, which authorities could not justify on an annual basis. Today, this sum represents only a third of the Centre's incoming balance. The rest of the money is earned through a number of ongoing activities such as the testing center, publications, conference, and course activities as well as national, Nordic and European projects, which receive grants from the European Union, the Nordic Council and other partners.

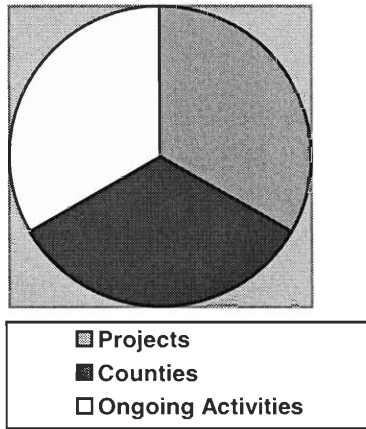


Figure A.1 - Approximate Yearly Income

The Centre's yearly income, or turnaround, is approximately 42 million Kroner.

Appendix B – Glossary of Selected Terms and Abbreviations

ALT Tag (Alternative Text Tag): An element in HTML code, associated with displaying graphics files, which allows the display of text when either the mouse goes over an image or menu item, or when the image is not displayed.

Bit: Measurement unit for memory in a computer represented by 1 or 0.

Browser: Software that allows users to view and access websites, and other content on the Internet.

Clicking: the act of pressing a button on the mouse.

Clickthrough: The act of clicking on a link to a different site.

Download: The process of retrieving data from a server.

EU: European Union

GIF (Graphics Interchange Format): A file used in developing and designing graphics for the Internet that characteristically allows the display of up to 256 levels of colors, plus allows for making certain parts of the image transparent.

GUI: Graphical User Interface.

Home Page: First page displayed on a website. Front door of the website.

HTML (HyperText Markup Language): A computer based language that allows websites to be created and displayed on screen in a web browser.

Icon: Small picture representing a specific type of program or file.

ISO Standard: International industrial standard for the development of products, drafted and implemented by the International Organization for Standardization

JPEG (Joint Photographic Experts Group): A graphics file named after the organization that developed it. This format allows the display of millions of colors, yet without the ability to make portions of the image transparent. This format is best suited for the display of photographic images.

Link: Item that allows the opening of a new web page from the same site or a different. Can also be to open third party software.

Navigation: Term describing the way users move from one page to another, either on the same site or to another.

NPO – Non Profit Organization: Organization whose mission statement is to provide assistance, education or various services without trying to create a profit.

Pixel: Measurement unit for size of display on a screen. Also a method of coordinates for positioning items on the screen.

Plug-in: Application used as an intermediate between the browser and HTML code. Can modify the browser to launch an application.

Script: Programming language used to display web pages. Scripts allow the site to interact with the user depending on the user's answers to questions or the chosen links. The report mentions two scripts, Java-script and CGI-script, which are among the most widely spread on the Internet today.

Server: a computer on the World Wide Web that hosts data, usually a website.

Technical Aid: any product, instrument, equipment or technical system used by a disabled person, preventing, compensating, relieving or neutralizing the impairment, disability or handicap.

Third Party Software: Software created by companies other than those who manufactured the operating system.

Thumbnail: a small graphics file that usually contains a screen shot of one frame of the movie or image being previewed

Appendix C - Personnel Questionnaire

The following questionnaire was distributed to the Centre's employees in order to gain more information on what the expectations and demands are for the international site. Given this purpose, the questionnaire was intended to serve as an outlet for more personal opinions and ideas, to aid in the formulation of the list of recommendations for the Centre's new international website.

E-mail: student@hmi.dk

1. What do you do for HMI?
2. Why do you work for HMI?
3. Do you feel the Danish website represents HMI well?
4. Do you think there is anything wrong with the international website?
5. Do you think it should be changed?
6. What is the most important message for the international website?
7. What would you like to see on the international website?
8. What information about your job should be included on the international website?
9. Who do you think will use the international website?

Appendix D - Synopsis of Interview With Greta Olsson

Date: March 19, 2001

Details: Greta started her career as an occupational therapist providing assistance with technical aid devices to care takers. She assisted them in using the aids in the patients' homes as well as helped adapting the aids to specific houses.

After 17 years of fieldwork, Greta joined the Centre with which she has worked eleven. She is currently project manager for all the testing and standardizing Copenhagen's branch of the Centre takes part in.

In the past twenty years, Scandinavian countries have agreed to divide the testing of technical aids mainly between Denmark, Norway, Sweden but also Finland and Iceland. Copenhagen's branch of the Centre only tests mobility technical aids such as electrical beds or chair lifters.

In 1995, Europe decided to implement standards and directives for several products including technical aids. The EU sought the Centre's help in developing these standards and continues to do so.

Since then, political war for the standards between the CE standard, which the Centre works to develop, a European standard and ISO and ICE, international standards. ISO and CE worked together, but ISO is a voluntary standard that governments can choose to impose on their producers or disregard it completely. Companies who finance these standards can also influence the outcome of the standards.

There are differences in how aids are used in different countries. For example, beds in American hospitals are stationary where in Europe, patients stay in their bed and are transported in that bed to different parts of the hospital.

The Centre's main goal is to develop standards that optimize their safety efficiency and ease of use for caretakers and patients within and outside Denmark. They mainly do so by developing these standards and testing products for corporate organizations. The Centre is a test center accredited by the European Union, which means they can deliver paperwork that guarantee products have been tested and passed according to European standards (CE).

Most of the producers that use the Centre to test their products come from Scandinavia. The biggest competition comes from Germany's TUF standard that tests a variety of products, from toys to cars. The Centre's advantage is to be specialized in technical aids and to have occupational therapists working there.

Appendix E - Synopsis of Interview with Klaus Lasvill-Mortensen and Trine Bjerre-Mikkelsen

Date: April 3, 2001

Details: In addition to the Web Group interview held on April 2, we again interviewed both Trine and Klaus together. The majority of the questions asked were based off of the questionnaire that was prepared for any of the Centre's employees.

Trine is the editor of HIT, the magazine produced in Århus, which is the compliment to Viadukt. She also has a role in the development of the Danish website, as co-editor with Lars Ege. Klaus is a graphic designer for all of the publications.

Trine and Klaus both agree that the content of the English or International website and the Danish website should not be the same, therefore the visual presentation of the two sites also does not need to be the same, such as the color scheme. The audience of the Danish website is intended to be the primary users, such as people with disabilities and their caregivers, therefore the website has to be welcoming. Klaus picked the main colors of the website out of the warm part of the visual spectrum, including reds and yellows. These were chosen to give a warm and friendly feeling to the website, and to encourage the users to explore the site by creating a cozy atmosphere. As the audience for the international website is intended to be a more professional group of users, the color scheme does not need to be the same as the national website.

The most important message for the international website is to present The Centre's values and mission by showing that HMI is the place to go to for information about technical aids in Denmark. A specific feature that the interviewees would like to

see on the international web page is a bulletin board/guest book, that would allow users to post comments about the website, its contents or the organization.

After the short complementary interview, Trine let Klaus demonstrate many features of the Danish website that we could not have found either because of the language in which it is presented or because of its restricted access. The first part of the demonstration was the sections of the website accessible to all users. One of the interesting features presented was an electronic bulletin board purchased from Info Pop, an American company based out of Seattle, after having compared a dozen different types of similar software. Klaus declared the main reason for choosing this software was the ability to translate most of the text displayed in English to Danish. The conference system was composed of different boards, each assigned to a specific topic, whose access was either open to all users or restricted to groups of employees. The system having been implemented only a month ago, employees and frequent users are not quite used to communicating through this media but HMI is pushing for its use to increase communication in the organization. The rest of the demonstration of the site was a detailed explanation of the different sections of the site including pages dedicated to the publications Viadukt and HIT.

Following the explanation of the Danish site, Klaus demonstrated the Backoffice software, purchased internally through NetJob, used to make the great majority of changes to the Danish website. This software allowed the few users with passwords to enter a database of pages developed for the Danish site. The features allows the administrator to let the page be displayed or not, enter titles, subtitles, text or pictures as well as links to internal or external pages. The system also keeps track of a database of

pictures and another one for links so that having to change the address for a site only has to be done once. The software takes care of keeping all pages consistent with the layout of objects or text as well as with the color scheme. Backoffice includes a feature that allows changing the color scheme or layout for the entire site.

The remainder of our time with Klaus was dedicated to his showing us some of his favorite and least favorite websites while we presented him with some of ours. This allowed us to create an image of what the graphic designer feels is a good website.

Appendix F - Synopsis of Interview with Lars Ege

Date: March 19,2001

Details: Lars received an education in history and sports, after which he later started working in the communications field at the Centre.

Lars is in charge of editing the Centre's magazine Viadukt. The name of the magazine is half a nonsense name. Viadukt stands for distributing information all around, in every direction, which is the serious part of the name. But the title was created at a time when most magazines in the field of technical aides had the words handicapped, disabled, or technical aides in the titles of publication. The magazine is intended to be a serious publication where people throughout the technical aid field, including the Centre, can write articles and have them published and distributed. At the same time, however, there is a frivolous side to the magazine. Cartoons about relevant current events are added, as well as satire articles. The magazine is a trade publication, however, and the intended purpose is to share relevant information and knowledge throughout the field of technical aides for rehabilitation.

Lars is also in charge of editing the other publications that the Centre sends out. Each year in the spring all the producers of technical aides come together and put on a trade show. The Centre gathers together all the information and publishes a manual on all the new products and improvements that have been made in the past year. An example of publications that are less regular is a book that gives information on all types of hoists and lifts. It is directed towards professionals and municipalities, but a layperson can also use the manual in order to determine the lift that best fits their needs.

Lars discussed the Centre's national website with us. One suggestion that has been made between the Centre and other related organizations including the ministry was a portal website. The problem with that is that so many groups would have to agree with each other as to general navigation and set up of the site, as well as the possibility of a smaller organization getting lost among the others. The biggest concern with the Centre's national website is getting the information that the users want to them right away, to have the information readily accessible. Information about the Centre and about the administration, workers and departments is still easy to find, but is not on the first page.

The homepage currently has an article about a book that has just been published on toys for children with disabilities. There are links to other areas about a conference, the Centre's magazine Århus and several other links. The site allows viewers to purchase any of the books that are displayed on-line. The web page has an e-conference area where people can participate in discussions on various topics, usually including the article on the front page.

A web group consisting of five people, two in Copenhagen and three in Århus manages the Centre's web page. They discuss the website as a whole together and then divide up the responsibilities of managing it among all the members. Lars, in conjunction with one other person is responsible for the front page. The most important thing, according to Lars, is to make the information that the viewer wants easy to find. In order to do that the designer needs to think like the user. Focus groups are a way to see if what is there is working. Should the international site be more commercial versus simple and basic, just getting the information out to the public?

Appendix G - Interview Questions for Elisabeth Kampmann Hansen

What is your position at HMI?

What are you responsible for?

What international work do you do?

Is HMI seeking other markets, on an international scale?

What is the most important aspect of the international site for you?

Is there any specific information you feel needs to be included?

Do you use the E-Konference system?

Appendix H - Synopsis of Interview with Elizabeth Kampmann Hansen

Date: April 20, 2001

Details: Elizabeth Kampmann Hansen is the head of the Copenhagen department. After completing the questionnaire, she had several issues that she wished to have brought to our attention, but could not develop thoroughly in writing. The first issue Elizabeth had was that of the European research and projects that the Centre works with. The European Commission has a framework within which organizations can apply up to three times a year for money. The organizations must be composed of two or more countries in order to be eligible for the research money provided by the European Commission.

Due to the nature of the Centre and the sometimes lack of research money available in Denmark, the organization has to look abroad for funding. One of the easiest ways to find funding is to cooperate within the European Commission. There is a partner search that allows organizations from around the world to enter information that will attract research partners. A list of skills or keywords, web pages and contact information is given out through the search program. This leads into the importance of the international website for the Centre.

Elizabeth made the point that the website is a prominent tool and showcase for the Centre. Foreign partners access the site through the database to learn more about organizations before deciding which ones to contact in order to request research and development projects from the European Commission. Several items that would help in this goal include having a list of the past projects, both international and national projects, so that possible partners can see what kinds research the Centre has been

involved in and in what areas they are interested in working. For the international site, this task shouldn't be very difficult as the language of all international projects is English and the reports are all written in English. Another important aspect that needs to be shown on the international website is the fact that the Centre is involved in so many different areas. Not only does the Centre do research and development projects, but also they are involved with the testing of technical aids and the spread of information as well. In most non-Scandinavian countries, the activities are all broken up into different organizations, with research being covered mainly by Universities. This particularity offers the Centre an important advantage over organizations from other countries in the EU, because it enables the Centre to be part of a wide variety of projects as well as some overlapping different areas.

Another important activity Elizabeth wants to be certain is displayed on the international website is the testing laboratory. The current clients of the laboratory are predominately from the Scandinavian countries. Elizabeth hopes that the testing laboratory will expand to firstly the Northern European countries, Germany, Netherlands, United Kingdom, but eventually to the rest of Europe and Canada, the United States and Japan. The testing laboratory also has several different features that can be used to promote its worldwide reputation: the ability to offer all the documentation needed for a product to receive the CE mark, all the information available for a producer to know how to receive the CE mark, and a wide range of knowledge on standardization work that has been going on throughout Europe due to the involvement of the Centre in helping to set up many of the standards. This

particularity can be compared to competence of a product and unique customer service, mainly due to the Centre's work in standardization projects.

Appendix I - Interview Questions for Lone Aabye

What does your job entail?

What type of education did you have?

What general information can we have on the finances of HMI?

Where does the money in the budget come from?

Governmental aid

Donations

Testing fees

What are the considerations of budgeting due to the nature of being a non-profit organization?

Appendix J - Synopsis of Interview with Lone Aabye and Jette Poulsen

Date: March 26, 2001

Details: Lone and Jette work in the financial department at the Centre. They speak only a little English, so the interview was challenging. Their job entails working with invoices and dealing out the petty cash. They take care of reimbursement for travel expenses as well as time sheets, with hours divided up by projects. Lone took a three-year accounting course in order to do her job.

The money for the Centre comes partly from the regional counties. Approximately one-third of the Centre's budget comes from the counties. Other money comes in on a project-by-project basis. The counties always give 12 million Kroner a year to the Centre. This is in the form of donations. Approximately 24 million Kroner come from the projects, magazine and the testing center. This value is going up each year. The European Union only gives money to the Centre on a project-by-project basis. Originally, the Centre only received 12 million Kroner per year from the counties, but the work needed was more than that money would pay for. Additional projects were found in order to provide an adequate amount of employees to carry out all of the necessary work.

The Centre is a non-profit organization overall, but are becoming more corporate due to the money that is earned from projects and the testing center. However, any profits that are made by the end of the year are spent toward projects in the next year, so the emphasis of the organization remains on social works.

Appendix K - Interview Questions for Neils-Erik Mathiassen

What is your position at HMI?

What are you responsible for doing?

What type of education did you have?

What do you expect in 6 weeks?

What are they looking for out of an international site?

Is HMI seeking other markets, on an international scale?

How much maintained and initial work do you want put in to the updated website?

What is the goal of the website? Is it to promote the image of the organization internationally, or to provide a resource for people in other countries for technical aides?

Who is the target audience for the international website?

Where do the producers come from, who are they? Who could we ask?

Who do you consider your clients? Producers, municipalities, the helpers, the disabled?

Is sponsoring the biggest item you are looking for, or the international site?

Which Organization could we ask about sponsoring?

How much independence do you have from the government?

We found that 12 million kroner come from the local counties and 24 million comes from the projects and testing center. Is this correct? Is there any more exact data that we could have?

Do you like to refer to the organization as the Centre or HMI?

Appendix L - Synopsis of Interview With Niels-Erik Mathiassen

Date: Tuesday, April 3, 2001

Subject: A discussion of the elements of the project, which ranged from sponsorship issues to site design. Also, a great deal of information discussed regarding the Centre's presence on the Internet, the appearance of the Centre in such a medium, and the nature of the Centre on an international level.

Details: On Tuesday, the group completed a lengthy interview session in Århus with Niels-Erik Mathiassen, the department head of the Århus division of the Danish Centre. The meeting covered a wide spectrum of topics related the creation of a new international website for the Centre, and a great deal of input on the mission and purpose of the Centre was provided by Niels-Erik. A set of prepared questions in Appendix K were used to gather a great deal of the information provided by Niels, however, there were quite a few new questions raised during the discussion that were carefully considered as well. From the conversation, it became more evident that the Centre is in need of an international website that will present a far different image of the organization than the one already given by the national website. A better picture of the target audience was elucidated, which led to the logical progression of the necessity to develop a front door to the international site that was specifically aimed at illustrating the Centre's logo, name, and mission statement in a manner that highlights the fact that the Center national authority on technical aids. Based on further dialogue, a natural

structure for the site began to take shape, as the international aspects of the organization were also explicated, such as the project work on designing and developing technical aids and technical aid standards with other international organizations, and the work performed by the Centre's extensive testing facility. The core of the information to be displayed on the international site will assume a very stable, static form, in order to save the organization the cost of trying to maintain and update the site constantly. Niels-Erik also discussed the opportunity for the Centre to provide links to other sites and organizations in the area of technical aids, as well as the excitingly optimistic possibility of the Centre becoming an intermediary for the exposition of the players in the Danish technical aids market, without advocating or directly utilizing sponsorship of the website to develop and highlight the producers and dealers in the market. By adopting the standpoint of an independent organization simply involved in the provision of beneficial information on advancements in technical aids produced in the Danish market, it could be possible for the Centre to garner more government funding for its programs and services. This possibility would involve more manpower to maintain the site, however, it is likely that such a scenario would allow the organization to devote more resources to the international site, provided that the increased government funding would be made available. Of all the elements of the site that were discussed, the most critical was accessibility of the site for end users, which includes stability of the site, reliability of the site and its information, and again the fact the Centre is an independent entity on all levels. In summary, this interview yielded the importance of presenting an comprehensive, impressive, yet professional site, that allows easy

navigation and accessibility for all international clients and colleagues of the Centre will constitute a successful international website.

Appendix M – Interview Questions for Web Development Group

Do you feel the Danish website represents HMI well?

What is the most important message for the international website?

What would you like to see on the international website?

What information about your job should be included on the international website?

Who do you think will use the international website?

Do you want more of an English site or an International one?

What important issues were debated during the creation of the Danish site?

Appendix N - Synopsis of Interview with the Web Group

Date: April 2, 2001

Details: We interviewed the Centre's web group composed of Helen Klingemann, Lars Ege, Trine Bjerre-Mikkelsen, Søren Aalykke and Klaus Lasvill-Mortensen. This group interview was our first chance to really converse with the employees responsible for the Danish website. The first topic on the agenda was the Danish website and how the group felt about it, whether it represented the Centre in the right way. Our reasoning behind asking these questions is the following. We had understood that the International website was more of a tool for presenting the Centre and promoting it to professionals, which is a different mission than that of the Danish site. The answers were not the clearest as they mainly thought the site could be improved. The reason for such answers probably comes from the fact that part of their responsibilities includes improving the site. Another reason for their discontent was that since the site was first created, several sections have been added, rendering the site a little less organized than it could be.

When asking who they thought the audience of the International site would be, the answers were a lot more uniform: professionals in the Technical Aids field, prospective clients of the testing center, other non profit organization interested in technical aids, where the Danish site was more for disabled Danes or their care-takers. The important information gathered from this answer was that the site was to be a lot more professional than its Danish counterpart.

The next topic discussed was the content of the site. Although none of the interviewees had thought thoroughly about the question, it was clear that the Centre's projects and testing center should compose the site. In addition, a page of the site should be dedicated to explaining what kind of organization the Centre really is. Indeed, due to its being partly funded by the government but mostly by project sponsors, the group found it would be hard for non-Scandinavian citizens where such organizations are not prominent to relate to such an institute. In addition to background information about the Centre, Søren thought it would be a good idea to describe the Centre's role in the Technical aids field in Scandinavia. Lars and Søren thought there should be a creative and interactive way to find information about the projects such as a database or search engine. Lars also suggested the Database already existing on the Danish site could be made available with a warning that it was not available in English. An issue brought up was the way to describe departments on the site, whether it was important to separate departments by location, project involvement or if the departments even had their place on this site.

The last important topic discussed was the first impression the site should give. In other words, the discussion was about which type of homepage would be more appropriate. Lars believed the front door should let the user know the site was the only Danish center involved in Technical aids. Klaus believed in a professional home page using impressive graphics.

Appendix O - Interview questions for Amy Marr and Troy Thompson on February 13, 2001

1. What is your education background in web design?
2. What are the differences in your jobs?
3. What work did you have to do prior to coding/designing (determining audience..) Was the audience considered when the web page was designed?
4. How do you pick the information that goes on each page?
5. Is there a preferred way to build a web site?
6. Do you have any experience designing international websites? Did you design any part of the WPI site for an international audience? If yes, how did you approach it?
7. What is your role in designing and maintaining the WPI web page?
8. For navigation you chose to have the map of the site at the bottom. What are the advantages and drawbacks of this method? What else did you look into? What was the deciding factor?
9. Have you had to deal with third party software on sites you have designed? What was your experience?
10. What do you think of using frames? Are there any drawbacks?
11. Do you have any experience in Sponsorship online? Can you tell us more? Do you have any other suggestions for ways to advertise other than banner ads?
12. Should all the pages have the same theme and style with just information changed? Are there preferred font styles and sizes? How does the overall style part of the web page get determined?
13. There are different ways to show pictures on-line. Is a slideshow better than flashing pictures? Is a video a good idea for showing specific information?

Appendix P – Website Usage Statistics for <http://www.hmi.dk>

Monthly Site Activity Analysis , created 12:55:44 Wed Apr 25th, 2001 (Server Time)

Analysis for the Month of Mar, 2001.

Server Activity Totals for Period:

Total sessions served : 5544
Total hits made on server : 124182
Total page view hits : 39422
Total non page view hits : 84760
Total time spent by all sessions : 1050806 minutes
Total bandwidth : 158802.02 kilobytes

Session Averages for Period:

Total sessions served : 5544
Average hits per session : 22.40
Average page views per session : 7.11
Average time spent per session : 191.61 minutes
Average bandwidth usage per session : 28.64 kilobytes

Session Origins for Period:

Total sessions served : 5544
Total search engine referred sessions : 135 (2.44%)
Total referred session : 1243 (22.42%)
Total blind (no referrer) sessions : 4166 (75.14%)

Page Views per Session Breakdown:

1414 (25.51%) sessions made 1 page view
2625 (47.35%) sessions made 2-5 page views
553 (9.97%) sessions made 6-10 page views
412 (7.43%) sessions made 11-20 page views
372 (6.71%) sessions made 21-50 page views
92 (1.66%) sessions made 51-100 page views
16 (0.29%) sessions made 101 or more page views

Time Spent per Session Breakdown:

3927 (70.83%) sessions lasted 1 minute
702 (12.66%) sessions lasted 2-5 minutes
633 (11.42%) sessions lasted 6-15 minutes
173 (3.12%) sessions lasted 16-30 minutes
25 (0.45%) sessions lasted 31-45 minutes
9 (0.16%) sessions lasted 46-60 minutes
15 (0.27%) sessions lasted 61 or more minutes

Page Usage Analysis for the Month of Mar, 2001.

Total pages tracked during period : 153

Total page views recorded : 39413

The average number of views per page : 257.60

Top 10 most commonly accessed pages during period:

- /download.asp with 10275 page views (26.07% of all traffic)
- /pages.asp with 9900 page views (25.12% of all traffic)
- /index.asp with 5255 page views (13.33% of all traffic)
- /404/404.asp with 5074 page views (12.87% of all traffic)
- /basen/forside.asp with 1939 page views (4.92% of all traffic)
- /forside_redirect.asp with 1389 page views (3.52% of all traffic)
- /sog.asp with 1089 page views (2.76% of all traffic)
- /basen/medarbejdere.asp with 328 page views (0.83% of all traffic)
- /basen/links.asp with 319 page views (0.81% of all traffic)
- /basen/instituttet.asp with 304 page views (0.77% of all traffic)

Top 10 least commonly accessed pages during period:

- /backoffice/indhold/f_indhold_info.asp with 1 page views
- /backoffice/f_main_top.htm with 1 page views
- /english/adl.htm with 1 page views
- /english/compas.htm with 1 page views
- /cgi-bin/projekter/projektvtg.pl with 1 page views
- /backoffice/indhold/f_indhold_navi_top.asp with 1 page views
- /bagsiden/vagn/ with 1 page views
- /hmc/tekst/adresse.asp with 1 page views
- /english/about.htm with 1 page views
- /backoffice/index.asp with 1 page views

Top 10 most common error pages:

- /backoffice/ with 2 failed requests
- /backoffice/f_main_top.htm with 1 failed requests
- /english/index.html with 1 failed requests
- /404/ with 1 failed requests
- /bagsiden/index.html with 1 failed requests
- /custom_scripts/ with 1 failed requests
- /bagsiden/vagn/nyesider/ with 1 failed requests
- /bagsiden/vagn/ with 1 failed requests

Top 10 entry point pages (first pages viewed):

/index.asp with 3558 page views
/404/404.asp with 712 page views
/pages.asp with 396 page views
/basen/forside.asp with 52 page views
/download.asp with 41 page views
/bagsiden/index.html with 34 page views
/sog.asp with 30 page views
/forside_redirect.asp with 20 page views
/bagsiden/ugens.html with 19 page views
/english/index.html with 19 page views

Top 10 exit point pages (last pages viewed):

/basen/forside.asp with 1286 page views
/download.asp with 1242 page views
/pages.asp with 737 page views
/404/404.asp with 734 page views
/index.asp with 529 page views
/sog.asp with 81 page views
/bagsiden/konf_ikoner/listen.html with 43 page views
/bagsiden/index.html with 41 page views
/basen/info.asp with 33 page views
/english/index.html with 31 page views

Top 10 pages which were the only page viewed:

/404/404.asp with 404 page views
/index.asp with 198 page views
/pages.asp with 170 page views
/basen/forside.asp with 39 page views
/download.asp with 23 page views
/bagsiden/index.html with 22 page views
/bagsiden/ugens.html with 19 page views
/bagsiden/email.html with 16 page views
/bagsiden/vagn/nyesider/kunst.html with 13 page views
/bagsiden/vagn/nyesider/forside.html with 12 page views

User Agent Analysis

Analysis for the Month of Mar, 2001.

Total sessions served during period : 5544

Most active browsers by type and version:

MSIE 5.x with 3154 sessions (56.97% of all sessions)
Unknown with 795 sessions (14.36% of all sessions)
MSIE 4.x with 745 sessions (13.46% of all sessions)
Netscape 3.x with 351 sessions (6.34% of all sessions)
Netscape 4.x with 248 sessions (4.48% of all sessions)
MSProxy 2.x with 152 sessions (2.75% of all sessions)
MSIE 3.x with 52 sessions (0.94% of all sessions)
Netscape 2.x with 24 sessions (0.43% of all sessions)
Opera 3.x with 10 sessions (0.18% of all sessions)
AOL 5.x with 3 sessions (0.05% of all sessions)

Most browsers by brand preference:

MSIE with 3951 sessions (71.37% of all sessions)
Other with 795 sessions (14.36% of all sessions)
Netscape with 624 sessions (11.27% of all sessions)
MSProxy with 152 sessions (2.75% of all sessions)
Opera with 10 sessions (0.18% of all sessions)
AOL with 3 sessions (0.05% of all sessions)
Lotus-Notes with 1 sessions (0.02% of all sessions)

Most popular user operating systems used for access:

Windows 98 with 2050 sessions (37.03% of all sessions)
Unknown with 1319 sessions (23.83% of all sessions)
Windows 95 with 1246 sessions (22.51% of all sessions)
Windows NT with 826 sessions (14.92% of all sessions)
Macintosh PPC with 87 sessions (1.57% of all sessions)
SUN OS with 3 sessions (0.05% of all sessions)
OS/2 with 3 sessions (0.05% of all sessions)
Windows 3.1x with 2 sessions (0.04% of all sessions)

Top 10 new browser tags during period:

tivraSpider/1.0 with 32 sessions
Mozilla/4.0 (compatible; MSIE 5.5; Windows NT 5.0; COM 1... with 28 sessions
Mozilla/4.0 (compatible; MSIE 5.01; Windows NT) DR Nyhe... with 17 sessions
Scooter-3.0.g12-23 with 16 sessions
Mercator-1.2 with 13 sessions
Scooter-3.0.g0-11 with 13 sessions
Scooter-3.0.g24-35 with 12 sessions
Scooter-3.0.g48-59 with 8 sessions
Mozilla/2.0 (compatible; GDldb; WinNT) with 6 sessions

True_Robot/1.0 libwww/5.2.8 with 5 sessions

Referrer Activity Analysis for the Month of Mar, 2001.

Total sessions served during period : 5544
Total search engine referred sessions : 135 (2.44%)
Total referred session : 1243 (22.42%)
Total blind (no referrer) sessions : 4166 (75.14%)
Total referring domains tracked during period : 11

Top 10 most active referring domains during period:

hmi.dk with 181 referrals made (13.15% of all referrals)
google.com with 140 referrals made (10.17% of all referrals)
jubii.dk with 133 referrals made (9.67% of all referrals)
infopop.net with 113 referrals made (8.21% of all referrals)
msn.dk with 98 referrals made (7.12% of all referrals)
google.yahoo.com with 61 referrals made (4.43% of all referrals)
kvasir.dk with 36 referrals made (2.62% of all referrals)
hmi-basen.dk with 35 referrals made (2.54% of all referrals)
search.yahoo.com with 28 referrals made (2.03% of all referrals)
handicap.dk with 21 referrals made (1.53% of all referrals)

Top 10 most active referring search engines:

yahoo.com with 97 referrals made (71.85% of all referrals)
altavista.digital.com with 34 referrals made (25.19% of all referrals)
excite.com with 3 referrals made (2.22% of all referrals)
lycos.com with 1 referrals made (0.74% of all referrals)

Top 10 referring URLs during period:

<http://www.google.com/search?> with 135 referrals
<http://soeg.jubii.dk/res.asp?> with 116 referrals
<http://www.hmi.dk/> with 81 referrals
<http://hmi.infopop.net/1/OpenTopic?> with 59 referrals
<http://www.hmi.dk/pages.asp?> with 58 referrals
<http://search.msn.dk/results.asp?> with 55 referrals
http://dk.google.yahoo.com/bin/query_dk? with 53 referrals
<http://hmi.infopop.net/1/OpenTopic/a/cfrm> with 41 referrals
<http://dk.search.yahoo.com/search/dk?> with 28 referrals
<http://www.kvasir.dk/query?> with 28 referrals

Top 10 NEW referring URLs recorded during period:

<http://www.arf.dk/links/videnscentre.htm?> with 6 referrals

<http://www.stepstone.dk/sok/finn.html?> with 6 referrals
<http://www.vikom.dk/vikom/publika.nsf/Nyheder?> with 5 referrals
http://www.kvasir.dk/l/Privatliv/Sundhed_og_Sygdom/Handic... with 3 referrals
<http://www.google.com/> with 3 referrals
<http://www.goto.com/d/search/p/go/?> with 3 referrals
<http://www.infoguide.dk/fagene/oversigt/subject010330070....> with 3 referrals
http://www.bornesko.dk/fva/IT_B/it_proje2.htm with 2 referrals
<http://www.visueldialog.dk/side2dk.htm> with 2 referrals
<http://www.handicap.dk/portal.shtml> with 2 referrals

Sessions by Network Location for the Month of Mar, 2001.

Total sessions served during period : 5544

Breakdown of American Traffic by State

California, USA. with 225 sessions. (4.06 % of traffic)
 New York, USA. with 205 sessions. (3.70 % of traffic)
 South Carolina, USA. with 76 sessions. (1.37 % of traffic)
 Illinois, USA. with 46 sessions. (0.83 % of traffic)
 ??, USA. with 46 sessions. (0.83 % of traffic)
 New Jersey, USA. with 26 sessions. (0.47 % of traffic)
 Massachusetts, USA. with 20 sessions. (0.36 % of traffic)
 Virginia, USA. with 14 sessions. (0.25 % of traffic)
 Texas, USA. with 9 sessions. (0.16 % of traffic)
 Pennsylvania, USA. with 4 sessions. (0.07 % of traffic)
 Georgia, USA. with 4 sessions. (0.07 % of traffic)
 Wisconsin, USA. with 3 sessions. (0.05 % of traffic)
 Iowa, USA. with 2 sessions. (0.04 % of traffic)
 Minnesota, USA. with 1 sessions. (0.02 % of traffic)
 Indiana, USA. with 1 sessions. (0.02 % of traffic)
 Hawaii, USA. with 1 sessions. (0.02 % of traffic)
 Total U.S. Traffic 683 sessions. (12.32 % of traffic)

Breakdown of Canadian Traffic by Province

Ontario, Can. with 19 sessions. (0.34 % of traffic)
 Total CDN Traffic 19 sessions. (0.34 % of traffic)

Breakdown of Traffic by Continent

North America with 705 sessions. (12.72 % of traffic)
 South America with 0.00 sessions. (0.00 % of traffic)
 Europe with 3492 sessions. (62.99 % of traffic)
 Asia with 32 sessions. (0.58 % of traffic)
 Australia & Oceania with 407 sessions. (7.34 % of traffic)
 Africa with 0.00 sessions. (0.00 % of traffic)

Breakdown of Traffic from the continent of North America
United States with 683 sessions. (12.32 % of traffic)
Canada with 19 sessions. (0.34 % of traffic)
Greenland with 3 sessions. (0.05 % of traffic)
Total North American Traffic 705 sessions. (12.72 % of traffic)

Breakdown of Traffic from the continent of South America
Total South American Traffic 0.00 sessions. (0.00 % of traffic)

Breakdown of Traffic from the continent of Europe
Denmark with 2183 sessions. (39.38 % of traffic)
Netherlands with 679 sessions. (12.25 % of traffic)
Sweden with 180 sessions. (3.25 % of traffic)
Germany with 100 sessions. (1.80 % of traffic)
Czech Rep. with 94 sessions. (1.70 % of traffic)
France with 82 sessions. (1.48 % of traffic)
Norway with 60 sessions. (1.08 % of traffic)
Finland with 43 sessions. (0.78 % of traffic)
United Kingdom with 22 sessions. (0.40 % of traffic)
Italy with 18 sessions. (0.32 % of traffic)
Spain with 17 sessions. (0.31 % of traffic)
Greece with 5 sessions. (0.09 % of traffic)
Luxembourg with 2 sessions. (0.04 % of traffic)
Iceland with 2 sessions. (0.04 % of traffic)
Estonia with 2 sessions. (0.04 % of traffic)
Portugal with 1 sessions. (0.02 % of traffic)
Switzerland with 1 sessions. (0.02 % of traffic)
Austria with 1 sessions. (0.02 % of traffic)
Total European Traffic 3492 sessions. (62.99 % of traffic)

Breakdown of Traffic from the continent of Asia
Japan with 24 sessions. (0.43 % of traffic)
Korea with 5 sessions. (0.09 % of traffic)
China with 2 sessions. (0.04 % of traffic)
Taiwan with 1 sessions. (0.02 % of traffic)
Total Asian Traffic 32 sessions. (0.58 % of traffic)

Breakdown of Traffic from the continent of Australia & Oceania
Tonga with 407 sessions. (7.34 % of traffic)
Total Australian Traffic 407 sessions. (7.34 % of traffic)

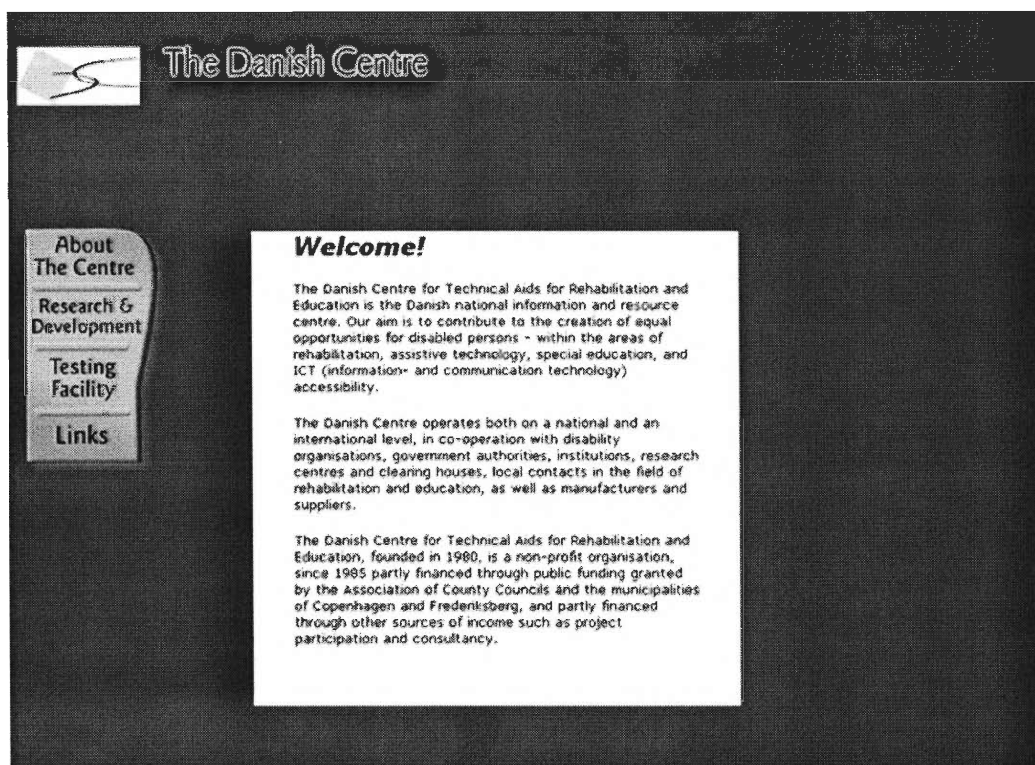
Breakdown of Traffic from the continent of Africa
Total African Traffic 0.00 sessions. (0.00 % of traffic)

Automatically Generated by Statistics Server 5.01
Copyright © 1996,1997,1998,1999 MediaHouse Software Inc.

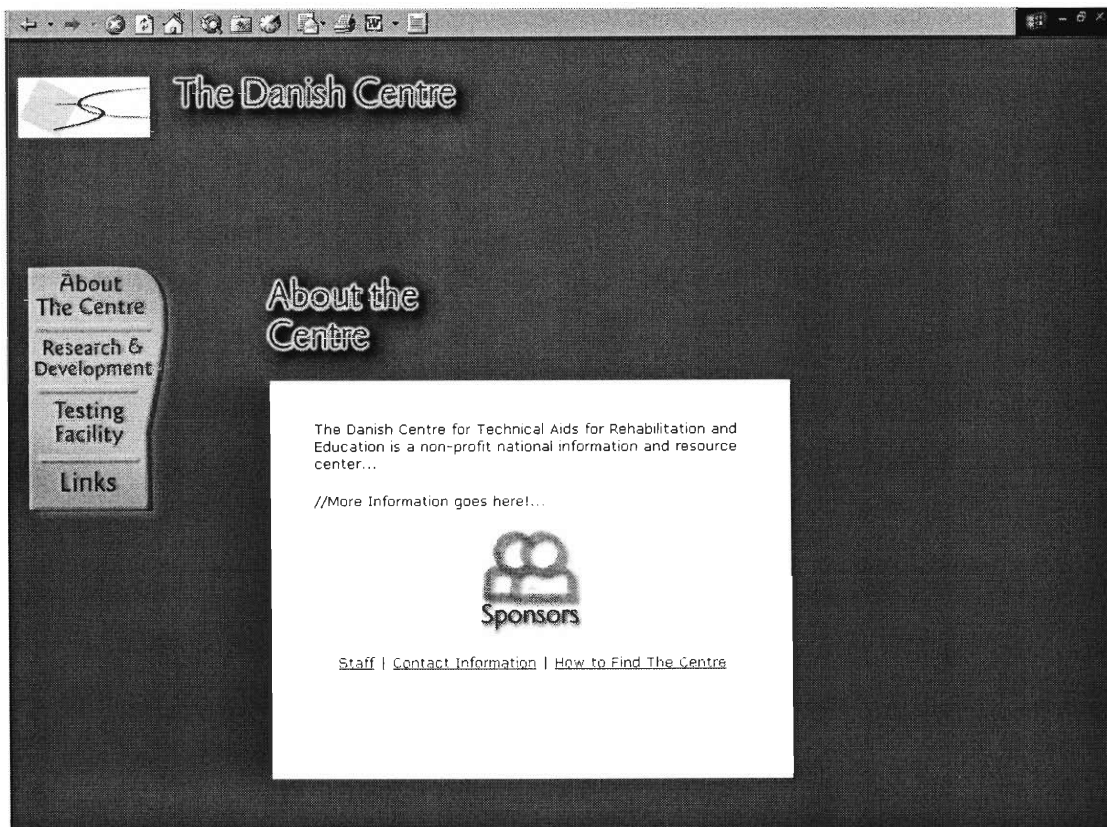
Appendix Q – Screen Shots of Sample Site

The following pages are screen shots of an example site, designed for the presentation of our recommendations and conclusions for the Centre's international website. This website was presented in the final report presentation on May 8, 2001.

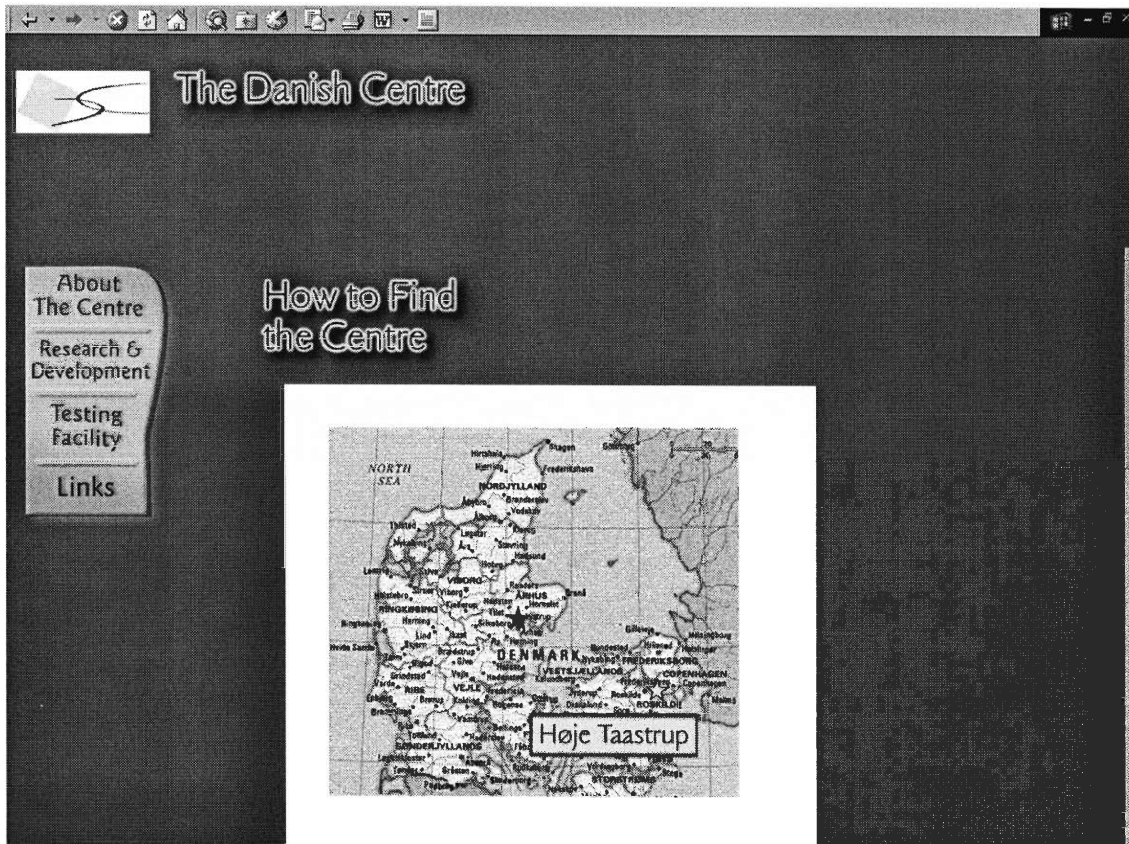
Home Page:



About The Centre:



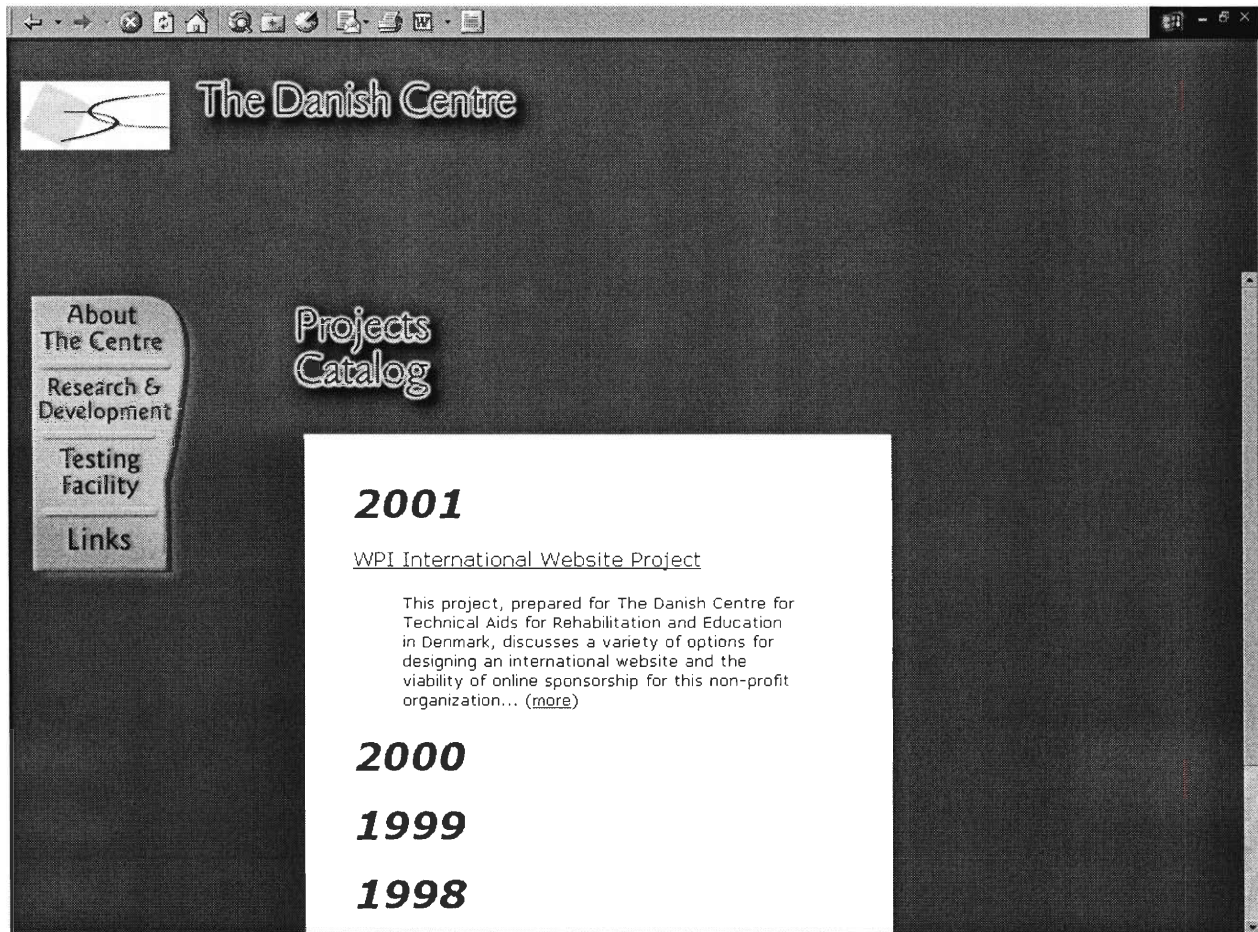
How To Find The Centre:



The image shows a screenshot of a web browser displaying the website for 'The Danish Centre'. The browser's address bar and various icons are visible at the top. The website has a dark background with the following elements:

- Logo:** A stylized white graphic resembling a lowercase 's' or a wave, followed by the text 'The Danish Centre' in a white serif font.
- Navigation Menu:** A vertical list of links on the left side, each enclosed in a rounded rectangular box:
 - About The Centre
 - Research & Development
 - Testing Facility
 - Links
- Section Header:** The text 'How to Find the Centre' is displayed in a large, white, serif font.
- Map:** A map of Denmark is shown, with a white rectangular box highlighting the location of 'Høje Taastrup' in the eastern part of the country. The map includes labels for various regions like Nordjylland, Midtjylland, and Sjælland, and cities like Copenhagen and Ålborg.

Projects Catalog:



The screenshot shows a web browser window displaying the 'The Danish Centre' website. The page has a dark background with a white sidebar on the left containing navigation links: 'About The Centre', 'Research & Development', 'Testing Facility', and 'Links'. The main content area features the 'Projects Catalog' title and a list of projects by year. The year '2001' is highlighted, with a sub-entry for 'WPI International Website Project'. Below this, there are links for the years '2000', '1999', and '1998'.

The Danish Centre

Projects Catalog

2001

WPI International Website Project

This project, prepared for The Danish Centre for Technical Aids for Rehabilitation and Education in Denmark, discusses a variety of options for designing an international website and the viability of online sponsorship for this non-profit organization... ([more](#))

2000

1999

1998

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