WEB EVALUATION FRAMEWORK WITHIN A RHETORICAL PERSPECTIVE

Abstract

Rhetoric is a phenomenon of a persuading nature that surrounds us in our daily life but at the same time a science with theories and methods that can be used as analytical tools. A web site tries to persuade its user to stay within the site. A site is therefore a communicative phenomenon and a rhetorical object. Ad-writers have long understood the importance of rhetoric but web evaluation techniques still lack a rhetorical perspective. The purpose of this essay is therefore to compile a framework for evaluating web sites within a rhetorical perspective. The study is carried out according to guidelines for qualitative methods. The *partes artis* of the classical rhetoric serves as the skeleton of the framework, which are combined with traditional web evaluation techniques. The framework is evaluated through an evaluation of two web sites, and the result of the study is analyzed according to an analysis model constructed for this specific essay. The conclusion of this study is that the framework implies a holistic concept that other web evaluation techniques lack. It works as glue between the parts of the evaluation since there are strong relations between the different parts of *partes artis*. Another important contribution is the focus on persuasion, which entails knowledge about human psychology and argumentation techniques. Only with the rightly structured arguments it is possible to persuade, even on web sites.

Keywords: web, evaluation, framework, rhetorical perspective

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1 Introduction

Rhetoric is an ancient discipline that works as a guideline on how to perform discourses, written or spoken. (Corbett E, 1990) Rhetoric implies all the means that people use for influencing other people's way of thinking and behavior by using symbols in a strategically way. Each time somebody or something attempts to persuade another we are talking about rhetoric, in other words it is a common phenomenon that is part of our daily life. A rhetorical object is a phenomenon of communication with intention, goal and purpose. (Karlberg & Mral, 1998, Mral B, 2000a)

A web site is basically concerned with communication and is a great medium for many companies to compete for costumers. It should always be suited to users' expectations and be easily workable at the same time as it provides a medium that is pleasant and seductive. (De Marisco & Levialdi, 2003) My opinion is that the fundamental of a web site should always be to be used. If nobody makes use of it, it surely has no function.

The purpose of rhetoric is to persuade the audience, which is exactly what every web site is trying to do; to convince the user that it is worth navigating on this particular site. (Karlberg & Mral, 1998 Hunt K, 1996) Each company's web site wants to persuade its customers of something, e.g. to buy a certain product or service. Even though it may not be directly concerned with commerce the purpose of a web is still to persuade. The web of a university wants to persuade potential students, existing students, and outsiders that this specific university is an eminent one and that the user will find what she is looking for. If the user is not convinced to stay in the specific web site she will go to an alternative one, maybe the competitors', and that is what makes the persuasion so indispensable in a web context. The user should be persuaded that on this web site she will find what she is looking for and that she will find it fast, easily and comfortably. (Navarro Colorado B, 2003) The conclusion of above is that a web site can be considered a rhetorical object since it is a communicative phenomenon, trying to persuade its users.

To be able to achieve that persuasive attraction a web site should have a serie of characteristics that many other modern rhetorical medias share, like the means of persuasion: *ethos, logos* and *pathos*, i.e. ethical, rational and emotional appeals. However a web site should also have the most important feature of web sites, usability (Navarro Colorado B, 2003), i.e. that a web site can be used to achieve specified goals with effectiveness, efficiency and satisfaction. (ISO, 1998)

Many web sites are inconsistent in look and feel, and furthermore illogical in information structure, in other words, these sites lack professional means of persuasion. (Hunt K, 1996) The ambition with an evaluation is to study the problems with common execution and usability. (Powell T, 2002) According to Winn (2000) advertisers have long understood the importance of rhetoric on ads and she means that by adding a new, but long existing perspective as the classical rhetoric with its dynamic properties we could bring about an appropriate web evaluation tool.

By constructing a framework on the basis of classical rhetoric and existing web evaluation techniques, within a rhetorical perspective, I believe that we can get a more complete evaluation tool compared to the already existing ones. A way of achieving above could be to use the classical system of rhetoric, the *partes artis*, as a base for the framework. This system is divided into five categories: *inventio, dispositio, elocutio, memoria* and *actio*, and can be seen as a way of constructing persuading communication. Since web sites deal with communication, the *partes artis* should also be an adequate system for communication on web sites. This essay is an attempt to give a tangible form to this idea. I will use the *partes artis* with its underlying theory as the skeleton of the framework. To work out the procedure of the framework I will apply traditional web evaluation techniques combined with classical rhetorical, which involves combining the theory of rhetoric with adequate parts of evaluation methods.
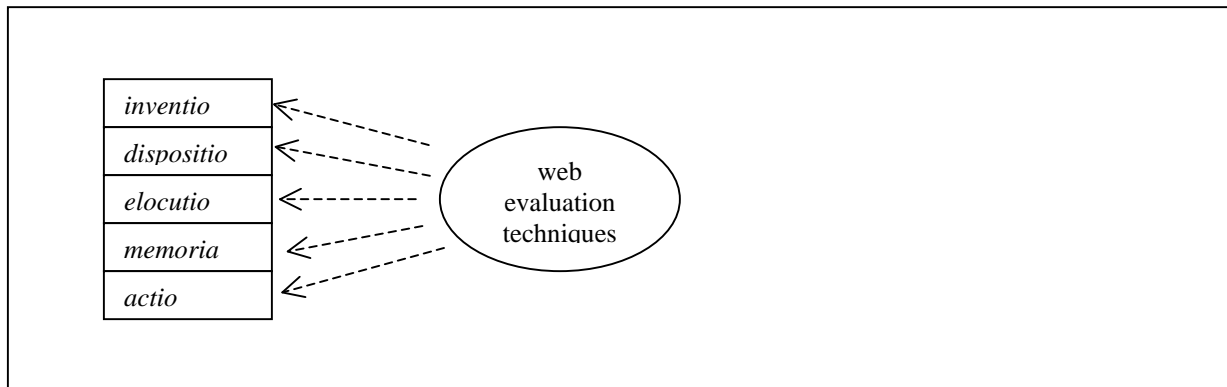
Figure 1. Illustration of how the rhetorical skeleton is combined with traditional web evaluation techniques.

1.1 Research Problems

Rhetoric is a phenomenon that surrounds us in our daily life but at the same time a science with theories and methods that can be used as analytical tools. (Karlberg & Mral, 1998) Winn states that classical rhetoric, "with all its dynamic properties" (Winn W, 2000 p.157), is an appropriate model to analyze web sites and that it is a research area that lacks investigation. She further proposes that there is a lack of adequate criticism and analysis to this new technologized rhetoric that we are facing.

Corder (1993) and Hunt (1996) state that virtual sites serve a classical rhetorical function:

> "Any line of inquiry, any field of interest, any subject matter, then, can be taken as a rhetoric or as a set of rhetorics. That I think, makes it reasonable and possible to use the vocabulary of rhetoric to discuss any human interest." (Corder, 1993 p.95)

> "[T]hey [web sites] are means of persuading potential readers [users] to take action, to explore the organization's information, to interact with the organization, perhaps even to join in the organization (by using the organization's products)." (Hunt K, 1996 p.379)

From the statements above I conclude that it is possible to evaluate web sites from a rhetorical perspective, and furthermore that there is a gap in this research area; this new state of the art communication medium needs additional investigation. Since classical rhetoric is a tool for the writing and performing speeches that convince and sway the audience, it should also be an adequate tool for evaluation of communication on the web. I will through this essay apply classical rhetoric to web evaluation techniques.

This essay will be usable for technical communicators that develop products for people. A web site is usually created by and for humans and should be developed with the human in focus. By applying a perspective from the Humanities to web sites I believe we can get an even more profound human-computer interaction.

1.2   Objective

The purpose of this essay is to apply a rhetorical perspective to traditional web evaluation methods by compiling a framework of classical rhetoric and traditional web evaluation techniques and thereafter testing this framework by applying it in an evaluation of two web sites.

1.3   Expected Result

With this essay I'm going to construct an evaluation framework using a rhetorical perspective for web sites. This framework will make a contribution to making web sites more persuasive since it has a focus that other web evaluation techniques lack. By using this framework, a web site can be evaluated and its weaknesses and its strengths detected, from both a rhetorical perspective and a usability perspective. My hope and expectation is that this framework will be seen as starting point for rhetorical-based web site analysis and stimulate further research concerning the application of rhetoric on web sites.

1.4   Limitations

For the application of this evaluation framework I will limit the number of web sites to one sphere of activities and examine two web sites. The evaluation of web sites is not the main issue in this essay; the purpose of the essay is to develop a framework for evaluating web sites within a rhetorical perspective and therefore the evaluation of the two web sites becomes a way of validating the evaluation framework and serves also as an empirical element in a rather theoretical essay.

Rhetoric is often related to dialectic, "[…] the art of philosophical disputation" (Aristotle, 1991 p. 26), but rhetoric is more of an offshot of dialectic. (Corbett E, 1990) In this essay I will not refer to dialectic because of the nature of this subject but I'm aware that dialectic is a term often used in lecture about rhetoric.[1]

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[1] Dialectic is a disputation or debate, especially intended to resolve differences between two views rather than to establish one of them as true. Collins English Dictionary.

1.5 Generalizability

The analysis of the two web sites is not an attempt to generalize the result on similar web sites; it is more an attempt to develop a framework and then test it. However this framework is generalizable to all kinds of web sites because it is not tied to a certain kind of web site.

1.6 Concepts

A *web site* is a collection of web pages related and interconnected by hypertext links. Each web site usually has a *startpage* that provides a table of contents to the rest of the pages at the site. (Alexander & Tate, 1999) By the term startpage I will refer to the page that sometimes is called homepage, i.e. the initial page that is loaded and normally contains information about the site content.

Hypertext is a combination of text, image, audio, and video that constitutes the basis of Internet and other multimedia productions. (Mral B, 2000b) This combination takes form as clickable zones that facilitate user-interaction with the medium by allowing users to make choices concerning how and in what sequence they access material. (Alexander & Tate, 1999) The original concept of hypertext was to eliminate menus by embedding highlighted link phrases directly in the text. (Shneiderman B, 1998) By hypertext in this essay I refer to the content of a web site, i.e. all that can be perceived within the frames of a web page.

A *cookie* in a web context is a message given to a web browser by a web server. The browser stores the message in a text file. The message contain information about visitors to a web site and this message is then sent back to the server each time the browser requests a page from the server. This means that if you enter the web site of a bank and search your local bank office's web page, the information in the cookie can manoeuvre your navigation so that the next time you enter the web site of the bank you will land immediately at the local bank office's web page.[2]

Breadcrumb navigation has taken its meaning from the term breadcrumbs in "Hansel and Gretel". In the fairy tale these two children leave a trail of crumbs in order to find their way back out of the forest. By using breadcrumbs on a web page it makes it more obvious for the user to know exactly where on the site she is located.[3]

Summary: Rhetoric is an ancient discipline with the purpose to persuade the audience. Ads are already evaluated from a rhetorical perspective but no appropriate web evaluation tool within a rhetorical perspective exists, therefore this essay is an attempt to construct a framework for evaluating web sites from a rhetorical perspective.

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[2][http://www.netiq.com/support/fwr/glossary.asp#C], [http://www.webopedia.com/TERM/c/cookie.html] and [http://www.nada.kth.se/dataterm/rek.html#a119] 21-10-2004
[3][http://www.motive.co.nz/glossary/breadcrumb.html] 21-10-2004

2 Method

A method is a tool, a way of solving problems and acquiring new knowledge. It is common to contemplate the selection of method as a question of which particular method would be adequate for the specific problem at hand. Qualitative and quantitative methods are two different methodical approaches. These two methods can be advantageously combined in the same investigation. The election of one does not have to exclude the other. (Holme & Solvang, 1991)

Qualitative investigations are characterized by flexibility whilst structuring and formalizing is the main characteristic for quantitative studies. (Holme & Solvang, 1991) Examples of the latter method are: experiments, tests, polls, and questionnaires; in other words, figures and numbers are common in this kind of method. The main purpose with a quantitative approach is to make statistical generalizations. (Backman J, 1998) In the work with analysis there is a substantial distance between the researcher and the source of information, this is what Holme & Solvang call a subject-object relation.

In qualitative studies the distance to the source of information is much shorter and the central idea is to gather information with the purpose of achieving deep understanding. This kind of method gives a holistic view of the situation, which makes it possible to gain comprehension of social processes. (Holme & Solvang, 1991)

2.1 Choice of Method

Since this essay aimed to gather information about how to evaluate web sites within a rhetorical perspective, the choice of method fell on a qualitative approach. The purpose was not to measure nor generalize, and therefore a quantitative method would not have been an appropriate course of action. Describing and integrating rhetorical concepts with web evaluating techniques was more suited as a qualitative and empirical study. As the essay would have turned out quite theoretical without an empirical element, a study of two web sites was made. In that way the rhetorical evaluation model was tested empirically and therefore gained validity.

2.2 Methodical Approach – Step by Step
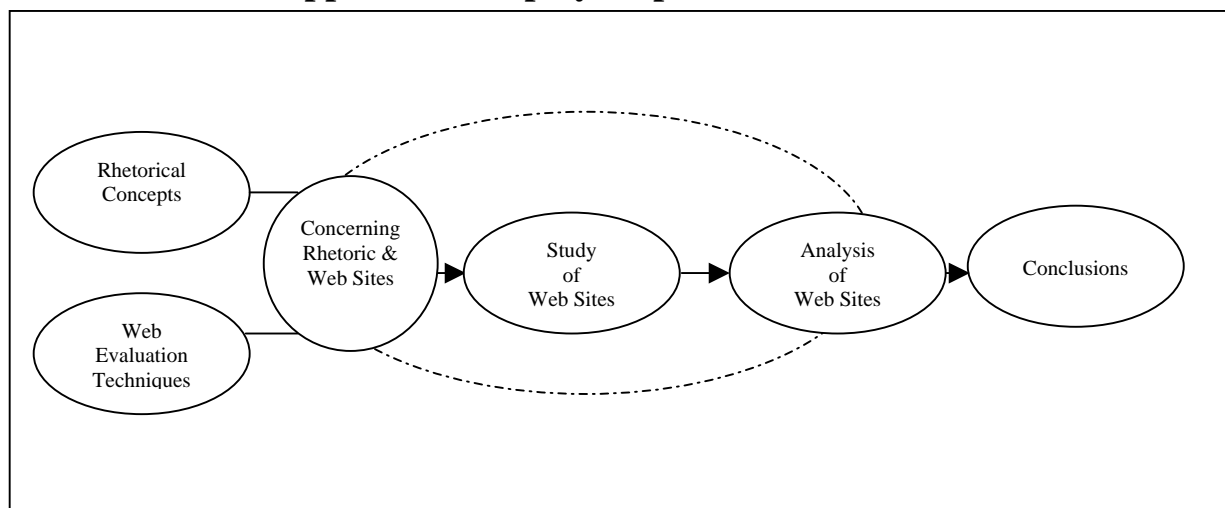
Figure 2. Illustration of the different steps in the sequence of work. This model is created for this essay.

A description of rhetorical concepts was made parallel with a presentation of web evaluation techniques. The result of these studies turned into an integration of the two disciplines with an addition of research on this interdisciplinary area: rhetoric and web design. On the basis of this gathered knowledge a framework for evaluating web sites within a rhetorical perspective could be deduced.

To validate this framework it was applied in an empirical study of two web sites, which seemed to be a sufficient number for this kind of academical essay. However in this essay there will be two cases. According to Powell (2002) it is not easy to evaluate and compare site designs. Far too often people compare sites that are not comparable. Comparing experimental sites with corporate sites, or e-commerce sites with educational sites is very difficult, if not impossible, because they are not of the same nature. Considering this the evaluation was only done within one sphere of activities, however the main purpose was not to compare two web sites but to develop and validate a framework. The focus was therefore concentrated on the application and validity of the framework and not on the actual web sites. The two sites were selected according to the convenience sample that implies choosing what seems to be adequate. (Trost J, 1994) See chapter seven.

Before the evaluation a pilot study was made on one web site. The purpose of this pretest was to assure that the sequence and content of questions were adequate. It revealed some minor errors that required adjustment like removing redundant data and changing the sequence of some questions. The actual study was made on the basis of the framework, step-by-step. The information was taken down by the same structure outlined in the framework and later in the analysis, this to facilitate a more coherent and easy to follow reading. However this detailed result is to be found in appendix 1., and a compiled version can be found in chapter seven. The evaluation was made on the Swedish version of the sites. The web browser used was Microsoft Internet Explorer version 6.0.

An analysis of qualitative information is often a lengthy procedure that requires much time and effort. (Holme & Solvang, 1991) Since the information was structured instantly in the empirical study it did not have to be systemized nor further structured in the analysis. The information was already prearranged on the basis of the developed framework.

To perform the analysis in a structured and systemized way an analysis model was created for this specific study, which could also be useful for other similar tasks. The starting point for the model was Holme & Solvang's holistic analysis, which is divided into three steps: choosing the object to be analyzed, formulating questions at issue and finally a systematic analysis. The difference between these models is that the one created for this specific essay supports iteration and also exists in an illustration (see figure 2), which Holme & Solvang's does not.

In this essay the first step required a decision of what was going to be analyzed. In this particular case it consisted of two web sites. Furthermore, questions at issue were drawn-up that were to be worked with in the analysis:

1. How does the reality correspond to the theory?
2. Differences between web site A and B?
3. What function does this component have for the overall picture?
4. Further comments?

The third step consisted of comparing site A with the theory and thereafter site B with the theory. As a fourth step in this model a comparison of A and B was made. The last two procedures are iterative which means that they were repeated until all the major sections in the evaluation framework had been analyzed.
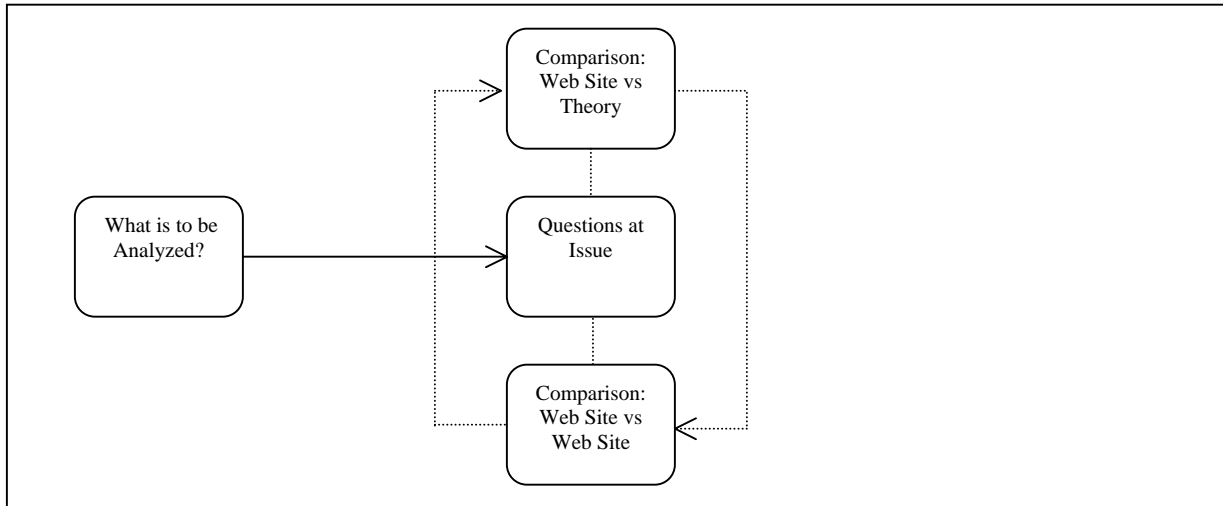
Figure 3. Illustration of the different steps in the analysis. This model is created for this essay.

2.3 Reliability

Backman (1998) calls this variable *replication*, and perhaps it is a more obvious designation of what reliability actually means. The purpose of achieving reliability is to make it possible to repeat the investigation under the same conditions and get the same results. (Backman J, 1998, Wallén G, 1996) According to Svenning (1997) reliability means that the results have to be reliable, i.e. trustworthy, and Ejvegård (1996) adds that even the instruments and the unit of measurement must be trustworthy. Wallén (1996) points out that there are no methods that can guarantee completely reliable results but one should always strive for high reliability. To achieve high reliability in this essay the method steps of the analysis model and the framework were carefully worked out and described.

2.4 Validity

Only reliability is not enough in investigations. The information can be reliable without being valid for its particular purpose. (Holme & Solvang, 1991) Validity means measuring solely what is supposed to be measured. (Wallén G, 1996 Ejvegård R, 1996) In this essay it was important that the focus on the rhetorical perspective of web evaluation was maintained, and that it not only dealt with ordinary web evaluation without any rhetorical element.

Summary: *This study is carried out by the guidelines of a qualitative method. The methodical approach is described step-by-step and an analysis method has been constructed for this specific essay. Reliability and validity are two important concepts in a research context and therefore the method steps and the analysis model have been carefully described at the same time as the focus on the rhetorical perspective of web evaluation has been maintained.*

3 Rhetoric

Rhetoric may be associated with the writing of compositions or with style as figures of speech and flowery diction or with the notion of empty bombastic language. However rhetoric has traditionally been concerned with those instances in which a person seeks to exert an affect on an audience. Rhetoric is not just means of ordering a discourse; it is also a means to produce an affect on the listener or reader. (Corbett E, 1990)

The theory of rhetoric originated circa 500 B.C. in Greece. Aristotle is its accepted inventor even though evidence exists of discussions and theories on the subject of rhetoric before his time. He is now regarded as the forefather of rhetoric simply because he was the first to give a serious consideration of rhetoric. (Aristotle, 1991) Below are some definitions of rhetoric from different authors.

> "[T]he ability, in each particular case, to see the available means of persuasion." (Aristotle, 1991 p. 14).

> "The craft of communicating through one or more media with a particular set of audiences for specific purposes." (Price J, 2001 p.148)

> "Rhetoric is the art or the discipline that deals with the use of discourse, either spoken or written, to inform or persuade or motivate an audience, whether that audience is made up of one person or a group of persons." (Corbett E, 1990 p.3)

A more modern and perhaps clearer explanation of rhetoric would be the means that people use for influencing other people's way of thinking and behavior by using symbols in a strategically way. Every time somebody or something is trying to persuade somebody we are talking about rhetoric and according to the above statements rhetoric is a common phenomenon that is part of our daily life. Rhetoric as a science aims to analyze communication as influence and a rhetorical object is a phenomenon of communication with intention, goal and purpose. The purpose of a rhetorical analysis is not only to dictate the structure of a text but also to evaluate how well or bad it performs, both within its context and as regards the audience. (Karlberg & Mral, 1998, Mral B, 2000a) According to the definition by Price (2001) above, people do not communicate only to persuade, this means that people communicate for many different reasons, e.g. to entertain, to sell, to spread awareness or just to participate within a group. He further states that we communicate in many different media and to many different audiences. It can be said that Price has adopted an object-oriented way of contemplating the rhetoric of web sites. Further on when the word rhetoric is used I will refer to the definition of Aristotle (1991) and Karlberg & Mral (1998).

The classical system of rhetoric is divided into five categories, the so-called *partes artis*, which correspond to questions often asked by people who are intending to communicate (Azaustre & Casas, 1997, Lanham R A, 1991 Price J, 2001). The purpose of this division is mainly for pedagogical convenience. (Corbett E, 1990) The system can be seen as a way of constructing persuading communication and will work as a skeleton for the framework that is to be compiled in this essay.

- *Inventio* (discovery); how to come up with something to say
- *Dispositio* (arrangement); how to organize the material
- *Elocutio* (style); what style to use in this specific context
- *Memoria* (memory); how to remember the ideas that are to be delivered
- *Actio* (delivery)[4]; how to deliver the ideas

3.1 Inventio

Inventio is the Latin term for discovery and can be explained as a system or method for deciding upon arguments. *Inventio* doesn't mean to invent something to say, it is more concerned with searching the memory for something to concentrate upon and therefore discovery is a more appropriate translation then invention. (Azaustre & Casas, 1997) This category of the *partes artis* is defined by the questions: who (*quis*) is communicating? what (*quid*) is she communicating?, and why (*cur*) is she communicating?[5] Once the *what*-question has been answered, i.e. the subject matter has been decided; the right persuadable arguments have to be found. To discover arguments for the three appeals of persuasion the classical rhetoricians developed a method for probing their subjects to discover possible ways of developing them. This method is constituted by topics that can be defined as a general heading or direction of arguments that suggests material from which proofs can be made. (Corbett E, 1990) In this context it is not of interest to delve more deeply into the different topics but rather into the different means of persuasion.

3.1.1 Means of Persuasion

The means of persuasion are divided into three: *ethos*, *logos* and *pathos*. The first means, *ethos*, are ethical appeals that derive from the speaker's character, i.e. the speaker can persuade using his personality and credibility. (Aristotle, 1991, Corbett E, 1990) *Ethos* has to do with the action of pleasing, entertaining and creating confidence; the speaker must make the audience benevolent. When you examine *ethos* you sense if the speaker reveals anything about his personality, background or his relation to the subject. Moreover you can study the credibility of the speaker, i.e. how the speaker creates confidence. Two ways of achieving credibility is by referring to ones own authority, e.g. emphasize skills within the topic, experiences and references from other respected authorities. In areas not connected to the speech, logotypes, uniforms, paper and decoration are important details that can affect the sense of credibility. (Karlberg & Mral, 1998)

The second means of persuasion, *logos*, derive from true or probable arguments and are called rational appeals. (Aristotle, 1991, Corbett E, 1990) *Logos* consists of arguing, teaching and informing the audience by appealing to its critical judgment and sense. When you study *logos* you examine the density of facts; is the object of study detracted from or enriched by facts? Another criterion to detect *logos* is the level of complexity; is the speaker aware of the audience's prior knowledge and interests? (Karlberg & Mral, 1998)

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[4] *Actio* is sometimes called *Pronuntiatio*. (Corbett E, 1990)
[5] *Quis*, *quid* and *cur* are the Latin words for who, what and why.

Pathos, are the means of persuasion that derive from the emotions that a speaker arouses among the audience (Aristotle, 1991), so-called emotional appeals. (Corbett E, 1990) When you examine *pathos* you acknowledge the feelings that the speaker wants to appeal to. Both verbal and visual images are important when you want to arouse the feelings in areas not connected to the speech. (Karlberg & Mral, 1998) As believed by Aristotle in Corbett (1990) people should be able to make decisions by only reason, but, he continues, they are also endowed with the faculty of free will, and often their will is swayed more by their passions or emotions than by their reason. *Pathos* is nearly related to the science of human psychology, therefore the person that is to play upon people's emotions must know what those emotions are and how they can be triggered of or subdued. (Corbett E, 1990)

It is quite common to work with opposite feelings in the process of persuasion. (Karlberg & Mral, 1998) A company who described the threat of the millennium bug would then offer a product or service that contained a resolution to the problem. The company would in that case play on feelings of fear and hope.

Ethos is considered to be the most important way of persuading; if a speaker cannot create credibility she will not reach the audience even though she has worked thoroughly with *logos* and *pathos*. (Mral B, 2000a) However these three means of persuasion constitute the fundamental base for all argument, and with the rightly structured argument it is possible to persuade. (Karlberg & Mral, 1998)

3.2   Dispositio

According to Corbett there is a strong relation between *inventio* and *dispositio* and in many rhetoric books these two divisions are treated under one head. When the arguments and ideas are discovered in the *inventio* they have to be arranged and organized with a view to effect the end of the discourse. This takes place in this second part of the five canons of rhetoric. (Corbett E, 1990) *Dispositio* is not just a way of organizing the material that was originated in the *inventio*; it is also a means to lead the audience towards the persuasion. The *dispositio* is divided into five categories, their purposes are to make the audience attentive, benevolent and susceptible to information; give background and make the audience understand the subject; present the thesis of the speech; introduce the arguments and finally summarize the content. (Karlberg & Mral, 1998)

3.3   Elocutio

Elocutio, or style as it's called in a more familiar term, is concerned with the verbal expression of the product of the *inventio* that was organized by the *dispositio*. This category of the classical rhetoric determines how to express the material in an elegant and convincing way. The *elocutio* consists of four components: *puritas*, *perspicuitas*, *ornatus,* and *urbanitas*. (Azaustre & Casas, 1997)

Puritas refers to grammatical correction and *perspicuitas* is concerned with comprehension, meaningfulness, and intelligibility of the text. *Ornatus* represents the embellishment of the text and rhetorical figures of style are often used to adorn the text or discourse. (Azaustre & Casas, 1997)

The purpose of the figures is to vary the text, but likewise arouse feelings. (Karlberg & Mral, 1998, Mral B, 2000a) The rhetorical figures are normally divided into tropes, figures of speech and figures of thought. (Azaustre & Casas, 1997) I will not describe the figures and tropes in this study but for the interested reader there is a further description by Corbett (1990) and on *Silva Rhetoricae's* web site.[6] *Urbanitas* refers to the elegance of the style. This last component depends on the pleasure that the discourse produces in the audience. (Azaustre & Casas, 1997) It is also important to study the homogeneity of the text. (Corbett E, 1990)

3.4 Memoria

This fourth canon of rhetoric is often a neglected one. It concerns with memorizing speeches and is seldom given much attention in books about rhetoric. (Corbett E, 1990) Lanham (1991) and Azaustre & Casas (1997) divide memory into two: *memoria naturalis* and *memoria artificiosa*. The latter is constituted by *loci* (places) and *imagines* (representations of the subject) with the purpose of remembering the discourse, i.e. to remember the discourse the orator can think of a place (*loci*) and something that represents the subject (*imagines*).

3.5 Actio

The *actio*, or delivery, defined as the management of the voice and the gesture (Corbett E, 1990) is concerned with the way the speaker perform her speech. (Karlberg & Mral, 1998) The relationship between means of persuasion and delivery is clear: credibility, arguments and emotions that a speaker arouses among the audience are linked to the way in which one delivers a speech. (Gurak L, 1999) The study of the *actio* consists of an evaluation of the speaker's clothes, her place in the room, the characteristics of the stage, and the supplementary aids that the speaker might use. Just as the body language, the clothes and the rest of the physical appearance give signals to the audience about how they should interpret the message. (Karlberg & Mral, 1998)

Summary: All parts of the partes artis: inventio, dispositio, elocutio, memoria and actio are necessary for the entire production and communication of the discourse. This rhetorical system can be seen as a guideline to construct persuading communication. Inventio concerns deciding upon arguments and is defined by questions like: what is to be communicated, who is the intended audience and why is this communication to take place. Dispositio deals with the organizing of the arguments found in the inventio. In the third part, elocutio, the material is embellished by: puritas, perspicuitas, ornatus and urbanitas. Memoria is concerned by memorizing speeches and actio by the way the speaker performs her speech.

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[6] Silva Rhetoricae [http://rhetoric.byu.edu] 2004-09-13

4   Web Evaluation Techniques

Web site design can be seen as harmonizing the structure and relationship of homepages and individual content pages or other linked graphics. Its goal is to construct a hierarchy of menus and pages that feels natural and well structured to the user. (Shneiderman B, 1998)

According to Powell (2002) web design is a multidisciplinary pursuit that can be divided in five areas: content, visuals, technology, delivery and purpose. There is no form of "correct" web design that fits every site but the reference point whilst designing the site should always be user-centered to maintain focus on meeting the user's needs. (Powell T, 2002)

There are five universal criteria that need to be addressed regardless of the medium being evaluated: authority, accuracy, objectivity, currency, and finally coverage and intended audience. Authority is the extent to which material is recognized as originating from a source of definitive knowledge of a given subject. Authority is often related to accuracy, which refers to if information is reliable and free from errors. Objectivity concerns how material expresses facts or information without distortion by personal feelings or any other bias. Currency is the extent to which material can be identified as up to date. Coverage is the range of topics included in a work and the depth to which those topics are addressed. Intended audience is the group of people for whom material was created. (Alexander & Tate, 1999)

The evaluation of a web site should, accepting the criteria above, not only focus on visuals, i.e. the aesthetic issues but also on technology, content, purpose, and delivery. The ambition of an evaluation is to study the problems of common execution and usability. (Powell T, 2002)

4.1   An Approach to Evaluation

Powell suggests an approach to evaluation in his *Web Design: The Complete Reference*, which consists of three main parts. Before the actual evaluation starts the test conductor should note the site to be evaluated, the date, the time, the test conductor, and the reason for the evaluation. (Powell T, 2002)

The second part implies the actual analysis of the web site, and is divided into eight steps that gradually work through the web site, beginning with first impression, page testing and ending with an execution analysis and final impressions. Ultimately an evaluation summary should be developed. (Powell T, 2002) The approach is explained in the sections below and complemented with related information.

4.1.1   First Impression

The purpose of contemplating the startpage is to measure the initial feeling for a site. The first impression can certainly affect any desire to go further. (Powell T, 2002) The lack of a plain visual structure can make navigation troublesome and it is very important that the users' expectations are not dampered from start. (De Marisco & Levialdi, 2004) The startpage should be loaded and only looked at for five to ten seconds and then the evaluator should write down whatever comes to his mind.

4.1.2 Homepage Pretests

This step consists of two tests, which will give a basic sense of the usability of the startpage, one concerning the identity, and the other clarifying the target group. To perform the identity test one should look at the startpage for between 30 seconds to a minute, and see if the organizations name, the topic of the startpage, and any impression of what the site concerns, can be figured out. (Powell T, 2002) It should also be possible to discern the authority of the web site, i.e. the ultimate responsibility for publishing the material on the web site. The user should be able to understand the content of the page right away without need to read it all. Checking the site map or the index can achieve this. (Alexander & Tate, 1999) The second test is about whom the site is built for and what the users are supposed to accomplish at the site. (Powell T, 2002)

4.1.3 Navigation Pretests

Navigability ensures that efficient paths allow to easily reach searched information and to go back the same way. (De Marisco & Levialdi, 2004) This test is according to Powell probably the most telling pretest. It is divided into three steps; the first involves looking at the startpage and trying to guess which areas of the screen are clickable. Printing the page and do a paper test can do this. (Powell T, 2002) Navigation elements must be identifiable instantly, in fact, the usability of a site requires that the user must be able to easily identify its logical structure. (De Marisco & Levialdi, 2004) When the whole page has been evaluated, one should check the intuitions by actually clicking. Common mistakes are mostly due to inconsistent color usage as for example applying blue text for labels and logos, removing underlines on link phrases, and trying to make graphic elements and supporting materials link together. (Powell T, 2002)

The second step of testing the navigation involves determining the purpose of each clickable zone on the page. One should write down what will happen when each zone is clicked. By comparing the presumptions with what actually happens by clicking, poor labeling will be detected. According to Powell failed link labels often use a metaphor, acronym that confuse the user and should be avoided. (Powell T, 2002) The lack of appropriate hypertext or a wrong link arrangement can endanger the fulfillment of the users' needs. (De Marisco & Levialdi, 2004) Nielsen states that the links are the most important part of hypertext because they connect the different pages on the site and also offers exits to other web sites. (Nielsen J, 2000)

As a last step one could scan link labels for style and consistency by making sure that they are of similar length, wording, and style, both textually and visually. (Powell T, 2002) To strive for consistency is one of the eight golden rules[7] for system design. This is the most frequently violated principle but also the easiest to repair and avoid. (Shneiderman B, 1987)

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[7] These principles must be interpreted, refined, and extended for each environment. The interested reader can find the golden rules in (Shneiderman B, 1987)

4.1.4   Subpage Pretests

Subpages are those pages directly accessible from the startpage and they should be tested by the same procedure as the startpage following the directions above with the only difference being that instead of focusing on the organization in the identity pretest one should concentrate on the purpose of the page. (Powell T, 2002) Nielsen stresses the importance of providing the users with information about where they have landed within a site. He also points out the value of a link that at any time can take the user back to the startpage of the web site. (Nielsen J, 2000) Permitting easy reversal of actions is the sixth golden rule for system design. Shneiderman recommends that every action should be reversible. (Shneiderman B, 1987) According to Nielsen it is legitimate to give a subpage a more local structure, to help users feel welcome in the part of a site that is of most importance to them but one should strive for a common style and a shared navigation mechanism. (Nielsen J, 2000)

4.1.5   Sub Navigation Testing

The web is a navigational system and the hyperlink is the most basic fundament of interaction to move around in the cyberspace. (Nielsen J, 2000) On this level of evaluation the quality testing of the whole site navigation takes place. The first thing to do is to make sure that placement of navigation is consistent from page to page, this is easy done by shifting fast between pages on the site. Moving on with studying the robustness of the site, to accomplish this task a few questions can be asked in the evaluation work as: is it clearly specified with labels or link path indicators where you are in the site? (Powell T, 2002, Nielsen J, 2000) Furthermore, are alternative text labels used for graphical navigation buttons?[8]

4.1.6   Task Analysis

Whilst a user is navigating a web site she is mostly carrying out a task, and Powell divide the different tasks in three: reading, searching and performing some interaction. (Powell T, 2002) To test the readability of a site one has to consider both when and how the user will read the content. The content can be printed out, be bookmarked and read or printed later or just read immediately. It is important that the content is readable both onscreen and on paper. (Powell T, 2002) Nielsen points out a few basic rules that ensure readability on web sites. To sum up, one should strive for high contrast between text and background, use plain-color backgrounds, big enough fonts that people can read and finally make sure the text stands still. (Nielsen J, 2000) The "fuzzy eye" test, squinting and looking at the page, is one way to check the legibility. If the general sense of the page structure still can be discerned, then the contrast and layout is probably adequate. (Powell T, 2002) All sites should have a structure as a base for the navigation design and this site structure should be determined by the tasks the users want to perform on the site, not by the structure of the organization behind the web site. (Nielsen J, 2000)

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[8] Further questions about the navigation can be found in appendix 1.

Another important aspect closely related to the navigation and the accomplishment of a task is the search possibility. Focus should be concentrated on how the search is accessed, how it deals with errors, and how results are presented, both negative and positive. By trying to find something common to every web site as contact information and also something very specific for the particular site, the search is tested. The task can be measured in both successfulness and the time it takes to perform the search or by counting the necessary mouse clicks. (Powell T, 2002)

The search should be available from every page and clearly indicated. (Powell T, 2002) Nielsen agrees to this statement and continue by stating that more than half of all users in his usability studies are search-dominant and they are not interested in looking around the site, they go straight to the search button. (Nielsen J, 2000) Not just the search button should be tested but also the site map. When a search is completed it must be easy to move forward and utilize the results. (Powell T, 2002)

Testing interactivity, the third and final task, is related to filling out forms, ordering products, making contacts, creating memberships etc. The test can be conducted by either performing the task correctly, proceeding whilst leaving the forms blank, or test for out-of-range values that would be obviously beyond the capacity of the site. (Powell T, 2002) According to the third and fifth golden rule by Shneiderman the system should offer informative feedback as a result of an action and offer simple error handling. This last principle implies preventing serious errors being made by the user. (Shneiderman B, 1987)

4.1.7   Execution Analysis

This part of the evaluation work consists of four different execution analyses: content, visual, technical and delivery analysis. In broad outline, execution analysis focus on trying to make sure the site is constructed correctly. (Powell T, 2002) Content execution checks spelling and grammatical errors within pages, i.e. accuracy, and if site content is up-to-date, i.e. currency of content. As a final step of the work with the content one can study the technical details such as copyright dates, trademarks, and product names. (Powell T, 2002, Alexander & Tate, 1999)

The visual execution evaluation studies the look and feel of a site and consists of making sure images; colors, fonts and page layout are used properly. (Powell T, 2002) Nielsen recommends that web pages should not contain a great amount of graphics, animations and video because of long download times and the distraction factor. Sometimes page layout may not even fit the screen resolution or print correctly. (Nielsen J, 2000) Since layouts may change over time it is important to print out a screen shot of the evaluated pages. (Powell T, 2002)

Technical execution evaluation analyzes first of all the HTML, its accuracy and quality, since it serves as the foundation of a web site. Powell suggests validating tools as *Markup Validation Service v0.6.7*[9], *CSE Validator*[10] as help in the evaluation process. Another way of detecting errors on a web site is setting the browser to show errors. A browser support test is also a way of testing the technology of the site with different browsers.

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[9] Markup Validation Service v0.6.7 [http://validator.w3.org] 24-09-2004
[10] CSE Validator [http://htmlvalidator.com] 24-09-2004

A final step in this technology test is for cookies. It is important to know if cookies are used on a web site and there should be information available on the site on what they are used for. (Powell T, 2002, Alexander & Tate, 1999) Stating the site's policy on these issues can achieve this, but also by indicating what technical measures the site has in place to ensure this type of privacy. (Alexander & Tate, 1999)

According to Powell (2002) the delivery of a site is just as important as construction of the site. It is extremely significant to examine how the site is delivered to determine the site's usability. The speed of the delivery is more important than the amount of data to be delivered. Factors important to take into account concerning delivery would be the server resources used to deliver a site, both hardware and software, how the site connects to the Internet, and the responsiveness of the server. (Powell T, 2002) Shorter response times and faster display rates goes under the second golden rule by Shneiderman. (Shneiderman B, 1987) The responsiveness can be checked by a network tool like "ping". Even the size of the pages should be considered. (Powell T, 2002)

4.1.8 Final Impression

The final impression of a web site concludes with personal opinions about the site, how easily the test was accomplished and any overall conclusive feeling concerning the web site. (Powell T, 2002)

Summary: The evaluation approach suggested by Powell (2002) consists of eight steps. The first impression concerns measuring the initial feel for a site. Homepage pretest gives a basic sense of the usability of the startpage and is divided in two tests. One is about the identity of the site and the other about the target group. The third step is concerned by the navigation on the site and the fourth and fifth involve testing the subpages by the same procedure as the startpage. The task analysis implies three different tasks: reading, searching and interaction. The seventh step, execution analysis consists of four different execution analyses: content, visual, technical and delivery analysis. The last step, final impression, concludes with personal opinions about the site and any overall feeling.

5 Concerning Rhetoric and Web Sites

Internet is a virtual *agora* where everybody with a little technological know-how can make his own web site and make his voice heard. (Enos & Borrowman, 2001). *Agora* means marketplace and has its origin in the ancient Greece. The *agora* served as a meeting point where people met and discussed current topics. According to Navarro Colorado we don't have a similar place today but he states that the web is a communicative phenomenon that shares the *agora's* characteristics of a public space where people from all social classes interact with each other using hypertext. It is also a social space; people enter web sites to socialize. (Navarro Colorado B, 2003) The Internet has become a social arena where people meet and talk; it is not just a source of information but an open space where social interaction takes place. (Navarro Colorado B, 2003, Burbules N, 2002)

However today's *agora* is not flawless. Mral states that the current net rhetoric lacks rhetorical thinking and therefore causes *taedium*, boredom, i.e. the greatest mortal sin of rhetoric. Common *taediums* on the web are all the audio- and video programs that have to be installed separately. It takes a lot of time and gives rise to irritation. The cause is that web constructors forget about the users needs and the web's promise of speed, simplicity and interactivity. The web sites are mostly constructed on the basis of the interests of the own organization and not on the basis of what could be interesting for the user. The user interests should always central. (Mral B, 2000b)

The remainder of this chapter concerns rhetoric and web sites. It can be seen as a compilation of the state of the art of this interdisciplinary science as rhetoric on web sites is, but the main purpose of following passages is to build a foundation for the combination of rhetoric and web evaluation techniques. The disposition proceeds from the skeleton, the *partes artis*, of the framework that is to be compiled in chapter six.

5.1 Inventio within Web Sites

In a system developing process the *inventio* is constituted by the questions: *what* should the system do, *how* will it work and *who* will use it. (Hasle & Braüner, 1998) The same should be valid for developing of web sites even though a web site is less than software. However a site is more than a set of documents, and some issues in its design are similar to the issues in information systems. (De Marisco & Levialdi, 2004)

The *what*-question has to do with what the site is communicating. (Corbett E, 1990) The offered material should coincide with the material that its user is looking for, if there is a coincidence the user will find the web site useful but by only being useful, the site will not persuade the user completely. It also has to offer the material in an easy way, and if it does the web site will be usable. Navarro Colorado (2003) declares that the principle feature of persuasion, in this context, is the usability of a web site. (Navarro Colorado B, 2003) According to ISO (1998, p.7) - International Standards Organization, usability is defined as an:

> "Extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use."

In chapter three a topic is defined as a general head of arguments that suggests material from which proofs can be made. In a web context we find the topics in the hypertext, which is the basis of Internet. Hypertext is subject-centered units, linked together in a logical structure. Therefore it is important to think in subject hierarchies so that the user can find what she's looking for. (Mral B, 2000b)

Price (2001) has a similar view of what the topics of the web are. He suggests that the topics could be seen as classes of standard objects. This angle of approach is grounded in the object-orientation. As an example he takes the users questions. People ask the same questions, e.g. "How do I …?" or "What is…?" and so on. Classes are invented to correspond to these kinds of questions and then instances of the classes are created answering a particular question, e.g. "How do I download this software?" or "What is MSN.NET?". (Price J, 2001)

As we can see, the topics correspond to both *what* a site is communicating and *how* it works, i.e. as subject-oriented or object-oriented etc.

5.1.1   Means of Persuasion within Web Sites

It has already been affirmed that the purpose of rhetoric is to persuade. Every web site is trying to persuade the user that it is worth navigating on this particular site. (Karlberg & Mral, 1998) Each company's web site wants to persuade its customers of something, e.g. to buy a certain product or service. Even though it may not be directly concerned with commerce the purpose of the web is still to persuade. The web of a university wants to persuade potential students, existing students, and outsiders that this specific university is an eminent one and that the user will find what she is looking for.

To make the user stay within the specific web site and not make him go to an alternative one, persuasive techniques are indispensable. The user should be persuaded that on this web site she will find what she is looking for and that she will find it fast, easily and comfortably. (Navarro Colorado B, 2003) The means to achieve the above is through a persuasively effective communication. There are three basic elements that differentiate on effective presentation from ineffective: *ethos*, *logos* and *pathos*. (Karlberg & Mral, 1998)

The fictive character of the web site must infuse confidence so that the user will feel that the web site is a credible one. This element corresponds to *ethos*. (Boyarski & Buchanan, 1994) According to Nielsen (2000) establishing credibility is one of the most important goals of web design. To achieve this credibility is to offer good looking visuals because that is the first thing a user sees when entering a site. (Nielsen J, 2000) Technical communicators can make appeals on *ethos* by applying a clear and simple language that is both intelligible and credible. (Hunt K, 1996) According to Winn (2000) *ethos* in a web context can be facilitated by brand name recognition. Gurak (1999) states that there are two additional ways of considering *ethos*, apart from projection of image, which are significant to online discourse. The first is about the moral and ethical character; does the web site exude moral and ethical qualities? The second aspect comes from the etymology of the Greek word *ethos*, and is translated as "a habitual meeting place" (Gurak L, 1999 p.247).

Enos & Borrowman (2001) introduces a new concept of *ethos*, videlicet *techno-ethos*. This new *ethos* is built on the technological know-how that the web site exudes. Nielsen (2000) believes that in the future rating the sites will be one way of establishing credibility on Internet.

Secondly, the reasoning must be clear and easy to follow, logical and relevant, this is what the classical rhetoric calls *logos*. (Karlberg & Mral, 1998) Technical communicators (here web designers) can make appeals on *logos* by assuring a logical structure that the user can follow so that he don't get lost on the web site. (Hunt K, 1996) By other words, *logos* is defined by convenient and functional navigation (Winn W, 2000)

Ultimately, the presentation has to arouse the desirable feelings in the user, i.e. *pathos*. (Boyarski & Buchanan, 1994) The web site has to appeal to the users emotions. (Winn W, 2000) Hunt (1996) suggests that one way to appeal on *pathos*, but perhaps not so common, is to design interfaces using familiar metaphors to the user. As outlined in chapter three Aristotle (Corbett E, 1990) believes that *pathos* can be a stronger influence than *ethos*, hence an important factor to keep in mind during web evaluation.

5.2   Dispositio within Web Sites

The arrangement of the content on a web site must fulfill the purposes of *dispositio*: make the audience attentive, benevolent and susceptible to information; give background and make the audience understand the subject; present the thesis of the speech; introduce the arguments and finally summarize the content. (Karlberg & Mral, 1998)

According to Quintilian, a classical rhetorician, in Albaladejo (1989), the *dispositio* is the useful arrangement and distribution of things and parts in their places. Therefore the *dispositio* has an important role in web design because it should generate a consistent and navigable structure. The usage of consistent in this context means that the links within the site should correspond to a semantic-logic relation. By semantic-logic relation of the links means that the links should have explanatory names that facilitates navigation. Navigable here alludes to the facility of navigation. The general structure of the web, i.e. the product of the *dispositio*, is the key piece to an easy navigation and hence the persuasion that the user will find what she's looking for, fast and easily. Not only the hypertext design should be persuasive but also the structure of the hypertext. It is important to consider the placing of the hypertext and their connection with other pages. The design of the hypertext structure has a communicative value because it represents the semantic relations between the pages within the site and therefore the possible routes that a user can take. (Navarro Colorado B, 2003)

5.3   Elocutio within Web Sites

Today the content of the online discourse includes more than words. On a web site the information can take form as graphics, video and sound, and each media come with its own style guide. (Price J, 2001)

The style of this media, including hypertext, navigation system, and almost anything that can be found on a web site, represents the *elocutio* of a web site. (Navarro Colorado B, 2003)

The *elocutio* test implies checking spelling and grammar errors, and reliability on the site, *puritas*. If a site contains orthographical mistakes it will not infuse credibility. The test also entails looking at the comprehension, currency, meaningfulness and readability of the content, the *perspicuitas*. If a site does not offer an easy to follow, up to date and meaningful content, it will have problems keeping their users at the site because it will not be a usable site for them. (Alexander & Tate, 1999 Azaustre & Casas, 1997 Powell T, 2002)

When it comes to the adornment, *ornatus*, there are two levels that have to be checked. Firstly a layout check that implies the color, font and size of text, background and images and secondly a check of the rhetorical figures used on the site. (Karlberg & Mral, 1998, Navarro Colorado B, 2003) The consistency of the layout should also be checked. (Nielsen J, 2000) *Urbanitas* on a web site refers to the elegance of style of the interface, which is dependent upon the pleasure that the user experiences whilst using the site.

5.4 Memoria within Web Sites

No web evaluation technique stresses the importance of *memoria*, except Nielsen that discusses memorability in a usability context. He means that a web site must be designed in a way that is easy to remember how it works. A lot of users are not daily net surfers and it is important that they feel at home when they enter the web site and that they don't have to learn how to use the web site every time they enter. (Nielsen J, 1993) According to De Marisco & Levialdi this is best accomplished structuring links among pages as a multigraph rather than a tree. However the last-mentioned authors also state that users might expect different categorizations and therefore the user should be offered different paths. This implies providing more than one path to the same content. The same authors also affirm that navigation tools like site maps and indices are very useful for increasing the memorability. (De Marisco & Levialdi, 2004)

Dr Jonathan Price, object-oriented rhetorician, has a different aspect of what *memoria* on web sites could be. He affirms that the hard disk takes care of the memory on a web site. Since the online discourse on a web site is stored in a hard disk the individual moment is less important. With a back up the lost information can quickly be recuperated. However the web site must have a good structure that facilitates the placing of new information, in that way it is easier to remember where the information can be found. Price (2001, p.149) says: "So we don't have to recall the text – just where we stored it, in electronic memory."

In my opinion *memoria* on web sites has to do with Price's classes of information outlined in 5.1 *Inventio* within web sites. This way of structuring the web site corresponds to the grouping in topics. If content is organized in a subject- or object-oriented way it will be easier for the user to remember how the site works. The different classes, or topics, can be seen as the *imagines* that work as representations of the subjects. The user can remember in what class she finds a certain thing, e.g. courses and programs will most likely be found in the "education"-class. *Loci* have to do with a consistent and standardized navigation structure, which is indispensable for the memorability of the site. If a web site keeps a consistent navigation structure following prevailing

standards it should attain memorability because the user will remember where on the screen she can find a certain thing.

Mral also stresses the importance of welcoming the user when she arrives at a new page within the site, just as Nielsen. She further states that the problems of memory on the web are to be concerned about. The syntax of the links is complicated; the user has a great opportunity to take different paths within the site, and the design should help the user locate himself and to find his way back along the path. (Mral B, 2000b)

This new information technology that Internet provides to us requires rhetorical devices just like other forms of writing. (Landow & Delany, 1990) Designers of hypertext and hypermedia confront three problems. The first one concerns the navigation, how to orient readers and offer a pleasant and efficient reading. The second one concerns exit or departure information, how to indicate the destination of every link; and third, how to welcome the user on arrival at that destination, i.e. how to make the user feel at home. This last problem concerns arrival or entrance information. (Landow & Delany, 1990, Landow G, 1987)

5.5 Actio on Web Sites

The fifth canon of the classical rhetoric, delivery, is in online discourse bound up in the medium of distribution (here web sites). Delivery online means communication to an enormous audience under a time period that is not as short limited as for an example a speech. (Gurak L, 1999)

The *actio*, or delivery, defined as the management of the voice and the gesture (Corbett E, 1990) is concerned by the way the speaker perform his speech. (Karlberg & Mral, 1998) According to Aristotle (in Price J, 2001 p.149) the delivery of the ideas was a: "[…] matter of the right management of the voice to express the various emotions […]." As delivery on web sites is electronic the *actio* is more about upgrading infrastructure and software as publishing objects, in other words making conversation possible. (Price J, 2001)

The relationship between means of persuasion and delivery is clear: credibility, arguments and emotions that a speaker arouses among the audience are linked to the way in which one delivers a speech. (Gurak L, 1999) Conclusions of information set out above must be that the delivery of a web site has to work well to be able to persuade the user.

Summary: Every web site is trying to persuade the user that it is worth navigating on this particular site, and to make the user stay within the site persuasive techniques are indispensable. This chapter deals with the partes artis in a web context, i.e. how to construct persuasive communication on a web site. The first part, inventio, is concerned with the purpose of the site, its target audience and its topics. Dispositio, the useful arrangement and distribution of things and parts in places, should generate a consistent and navigable structure of the web site. The style of the web site including everything one can found within its frames represents the elocutio. The second last part, memoria, is not well represented within traditional web evaluation techniques. Memoria in a web context has to do with the memory support that the web site offers. Actio is closely related to the means of persuasion. If the web site is not delivered in a correct way it will not persuade the user to make use of the site.

6 Web Evaluation Framework

In this chapter the evaluation framework is described, step-by-step. The skeleton for this interdisciplinary framework is the five categories of rhetoric, *partes artis,* with its underlying theory. The rhetorical categories are combined with corresponding steps of evaluation techniques when such equivalence is found in web evaluation theories. Where no corresponding theory is found among traditional web evaluation techniques own definitions are made, always with the classical rhetoric as a starting point. The framework contains a procedure of how to evaluate a web site within a rhetorical perspective including questions and instructions to help accomplish the evaluation successfully.

RHETORICAL CATEGORY	EVALUATION STEP	INSTRUCTIONS
INVENTIO	**FIRST IMPRESSION**	
	pathos	emotions
finding arguments	**START PAGE TEST**	
	ethos, quis?	identity and credibility
	logos	ease of navigation and density of facts
	quid?, cur?	basic points and purspose of site
	topics	what classes can be discerned?
	SUB PAGE TEST	focus on purpose of page
DISPOSITIO	**NAVIGATION TEST**	
arrangement of arguments	navigability	guess clickable zones
	hypertext	style, consistency and reversability
	structure	style and consistency
	findability	search access
ELOCUTIO	**HYPERTEXT TEST**	
elegance & persuadability of text	*puritas*	reliability and correctness
	perspicuitas	comprehension and readability
	ornatus	layout and rhetorical figures
	urbanitas	elegance of style
MEMORIA	**MEMORY TEST**	
memory support	*loci* and *imagines*	navigational structure and *topics*
ACTIO	**DELIVERY TEST**	
delivery	accuracy and quality	validation and browser test
	site policy	cookies
	server resources	responsiveness
	taedium	plug-ins and pop-ups
	interactivity	contact information and fill out forms

Figure 4. Overview of the evaluation steps with a rhetorical perspective. This analysis tool is a result of the interaction of rhetoric and web evaluation techniques.

Important issues in the *inventio* are: *what* is the web site about, *who* is the intended user, and *how* does it work? (Hasle & Braüner, 1998)

1. FIRST IMPRESSION – look at the startpage for 5-10 seconds without clicking.

   - *Pathos*: What emotions are aroused by watching the site? The emotions can be rated by a Likert scale from 1 to 5. 1 (negative feelings), 2 (indifference), 3 (acceptance), 4 (positive feelings) and 5 (very positive feelings). (Powell T, 2002)

2. STARTPAGE TEST – look at the startpage for 30 seconds to a minute without clicking.

   - This step will help to figure out the *ethos* of the site. Questions and instructions:

       i. Identify the site owner, the authority, by only looking at the startpage. (Powell T, 2002, Alexander & Tate, 1999)
       ii. Does the site infuse confidence and credibility? How? (Karlberg & Mral, 1998 Nielsen J, 2000 Powell T, 2002)
       iii. Does the site list any recommendations or ratings from outside sources? (Alexander & Tate, 1999)
       iv. Can it be considered a moral and ethical web site? (Gurak L, 1999)
       v. Does the site have a *techno-ethos*? (Enos & Borrowman, 2001)

   - *Logos* implies that reasoning must be clear and easy to follow and also logical and relevant. (Karlberg & Mral, 1998) A logical structure of the site can assure a clear reasoning and hence an ease of use navigation. (Winn W, 2000) Questions:

       i. Is it easy to understand the navigation system and the content by only looking at the startpage?

   - Try to understand the *quid* and the *cur* of the site. (Powell T, 2002, Alexander & Tate, 1999, De Marisco & Levialdi, 2004) Questions:

       i. What are the basic points of the site and its purpose? (Alexander & Tate, 1999, Powell T, 2002)
       ii. For whom is it created, i.e. who is the intended audience? (Alexander & Tate, 1999, Powell T, 2002)

   - Web sites must have a good structure that facilitates the placing of new information, in that way it is easier to remember where the information can be found. (Price J, 2001) These classes are the topics of the site. Questions:

       i. Are there general classes, or topics, of information on the site, and how does the site deal with them? (Price J, 2001)

3. SUBPAGE TEST – look at the subpage for 30 seconds to a minute without clicking.

- Apply the same procedure as with the startpage test but focus on the purpose of the page and the location indication. (Powell T, 2002, Nielsen J, 2000) Questions:

    i.   What emotions are aroused by watching the site? The emotions can be rated by a Likert scale from 1 to 5. 1 (negative feelings), 2 (indifference), 3 (acceptance), 4 (positive feelings) and 5 (very positive feelings). (Powell T, 2002)
    ii. Does the page provide the logo or name of the organization? (Alexander & Tate, 1999)
    iii. If the material is written by an individual, are author's name and qualifications for providing the information clearly stated? (Alexander & Tate, 1999)
    iv. What are the basic points of the page and its purpose? (Alexander & Tate, 1999, Powell T, 2002)
    v.   For whom is it created, i.e. who is the intended audience? (Alexander & Tate, 1999, Powell T, 2002)
    vi. Does the page infuse confidence and credibility? (Powell T, 2002)
    vii. Is it easy to understand the navigation system and the content on the page?

DISPOSITIO

The arrangement of the content on a web site must fulfill the purposes of *dispositio*: make the audience attentive, benevolent and susceptible to information; give background and make the audience understand the subject; present the thesis of the speech; introduce the arguments and finally summarize the content. (Karlberg & Mral, 1998)

4. NAVIGATION TEST – look at the startpage without clicking.

- Guess the clickable zones and their purposes. Printing the page can help accomplishing this task. When the whole page has been evaluated, one should check ones intuitions by actual test clicking. (Powell T, 2002) Questions:

    i.   Number of believed clickable areas? (Powell T, 2002)
    ii. Actual number of clickable areas? (Powell T, 2002)
    iii. Comments? (Powell T, 2002)

- Check the style, consistency and placing of link labels by making sure they are of similar length, wording, and style, both textually and visually. (Powell T, 2002, Navarro Colorado B, 2003) Questions:

    i.   Do links have explanatory names and what about the navigation label clarity? 1 (unclear), 2 (varying), 3 (fairly clear), 4 (clear) and 5 (very clear) (Powell T, 2002, Navarro Colorado B, 2003)
    ii. Are link colors modified from the blue, red and purple default? (Powell T, 2002)
    iii. Are link colors used consistently throughout the site? (Powell T, 2002)

    iv. Are there any broken links and orphaned files in the site? (Powell T, 2002)

    v. If there are broken links, is helpful information offered? (Powell T, 2002)

- Check the style, consistency and placing of the navigation and the structure. (Powell T, 2002, Navarro Colorado B, 2003) Shifting fast between pages within the site can do this. (Powell T, 2002) Questions:

    i. Consistency of navigation placement? (Powell T, 2002 Navarro Colorado B, 2003)

    ii. Consistency of navigation stile? (Powell T, 2002 Navarro Colorado B, 2003)

    iii. What navigation system is used? Top, bottom, left or right? (Powell T, 2002)

    iv. What is the organization of navigation labels? (Powell T, 2002)

    v. Are frames used? (Powell T, 2002, Nielsen J, 2000)

    vi. Can pages be bookmarked? (Powell T, 2002)

- Make sure the links are reversible. (Shneiderman B, 1987, De Marco & Levialdi, 2004)

- Testing the findability on a web site should focus on how the search is accessed, how it deals with errors, and how results are presented. Try to find contact information and something specific for the site. (Powell T, 2002) Questions:

    i. Does the site have an internal search system? (Alexander & Tate, 1999, Powell T, 2002)

    ii. Is the search function available on all pages? (Nielsen J, 2000)

    iii. Does search retrieve complete and appropriate results? (Alexander & Tate, 1999, Powell T, 2002)

    iv. Are instructions for search form included? (Powell T, 2002)

- Are the purposes of the *dispositio* fulfilled? (Karlberg & Mral, 1998)

ELOCUTIO

The *elocutio* is concerned with the verbal (here hypertextual) expression of the product of the *inventio*, which is organized by the *dispositio*. (Azaustre & Casas, 1997)

5. HYPERTEXT TEST

- Check *puritas*: spelling, grammar and reliability. (Alexander & Tate, 1999, Azaustre & Casas, 1997, Karlberg & Mral, 1998, Mral B, 2000a) Questions:

    i. Does the content appear accurate, truthful and objective? (Powell T, 2002 Alexander & Tate, 1999)

    ii. Is the material free of grammatical, spelling and typographical errors? (Alexander & Tate, 1999 Azaustre & Casas, 1997)

    iii. Are sources for factual information provided so the facts can be verified in the original source? (Alexander & Tate, 1999)

- Look at the comprehension, currency, meaningfulness and readability. The latter can be checked by doing a fuzzy eye test or a paper test and by making sure graphs, charts and tables are clearly labeled and easy to read. (Powell T, 2002, Alexander & Tate, 1999) Questions:

    iv. Is the content comprehensible? (Alexander & Tate, 1999 Powell T, 2002 Azaustre & Casas, 1997)
    v. Is the content readable? (Alexander & Tate, 1999 Powell T, 2002 Azaustre & Casas, 1997)
    vi. Is content updated on the site? (Alexander & Tate, 1999, Powell T, 2002 Azaustre & Casas, 1997)
    vii. Is there a glossary included? (Powell T, 2002)
    viii. Is there enough detail to answer simple user questions? (Powell T, 2002)

- Check *ornatus*: the layout and rhetorical figures. (Karlberg & Mral, 1998, Navarro Colorado B, 2003) Questions:

    i. What color, font and size of text are used? (Powell T, 2002)
    ii. Are images used correctly? (Powell T, 2002)
    iii. Are alternative text used for images? (Powell T, 2002)
    iv. What rhetorical figures can be detected? (Karlberg & Mral, 1998, Navarro Colorado B, 2003)

- Check consistency and homogeneity of layout by doing a browse test on the pages within the site. (Powell T, 2002, Nielsen J, 2000)

- The *urbanitas* depends on the pleasure that the elegance of style produces. (Azaustre & Casas, 1997) Instructions:
    i. Estimate the pleasure that the graphical interface produces.

MEMORIA

The *memoria* is concerned by the memory support that a site provides.

6. MEMORY TEST

- The topics of the site represent the *imagines* whilst the *loci* is constituted by the consistency of navigation structure. Questions:
    i. Does the site provide a clear *imagines* and *loci*? How?

- The memorability of a web site aims to how easy it is to learn how to use the site. (Nielsen J, 1993) Questions:

    i. Is any aid offered to help, like site map or index? (Powell T, 2002, Nielsen J, 1993)
    ii. Is it easy to discern the actual location? (Mral B, 2000b)

iii. How is location indicated? URL, page label, deselected labels, breadcrumbs, color, design style? (Powell T, 2002)

ACTIO

The *actio* is concerned with the performance of a discourse (Karlberg & Mral, 1998), in other words the infrastructure and software of the web site.

7. DELIVERY TEST

- The accuracy and quality of the HTML-code can be checked with validating tools as *Markup Validation Service v0.6.7*[11], *CSE Validator*[12] and by setting the browser to show errors. Testing the site in different browsers is also important. (Powell T, 2002) Questions:

    i. What kind of web server and operating system is used? (Powell T, 2002)
    ii. What version of HTML is used? (Powell T, 2002)
    iii. Does the browser support show any error on the site? Which ones? (Powell T, 2002)
    iv. Does the site work in other browsers? Which ones are tested? (Powell T, 2002)
    v. How large is the size, byte wise? (Powell T, 2002)

- Check the site policy for information about cookies used on the site and their purpose. (Powell T, 2002, Alexander & Tate, 1999)

- Check the responsiveness of a server to see how fast connection the site has to Internet. The network tool "ping" can be used. (Powell T, 2002)

- Audio or video programs that have to be installed separately cause *taedium* on a web site. (Mral B, 2000b) Questions:

    i. Are plug-ins used on the site?
    ii. Does the site use pop-ups?

- Checking contact information, filling out forms, ordering products etc, can test the interactivity. The test should be conducted correctly and then trying out-of-range values. (Powell T, 2002) Questions:

    i. Is contact information provided? (Alexander & Tate, 1999)
    ii. Is informative feedback offered? (Powell T, 2002, Shneiderman B, 1987)
    iii. Is there any feedback mechanism for users to comment about the site? (Alexander & Tate, 1999)

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[11] Markup Validation Service v0.6.7 [http://validator.w3.org] 2004-09-24
[12] CSE Validator [http://htmlvalidator.com] 2004-09-24

7 Evaluation of Web Sites

There are many different categories of web sites, e.g. entertainment, commercial, informational and governmental sites to mention a few. (Alexander & Tate, 1999, Calongne C. M, 2001, Powell T, 2002)

On the basis of the convenience sample by Trost (1994) the category of governmental sites was selected. This category was chosen since university sites fall under this classification and that kind of site seemed to be a suitable choice for this academic essay. The authority of this category is a government organization, and the purpose of the site is to satisfy some social or legal need. (Powell T, 2002) The web sites were selected with the help of a search engine, www.google.se, by searching for "universitet +Sverige", i.e. universities in Sweden. The two first results: Lund University and Uppsala University[13] were selected as objects for the evaluation. The total number of visitors on both web sites have been searched but not found. However Lund University has a total of 47.000[14] users only within the university, and Uppsala University has 44.900[15] of potential users. The author of this essay had never visited these two sites before the actual evaluation.

Below follow a compilation of the two evaluations. The complete result with screenshots can be found in appendix 1.

7.1 Lund University

The evaluation test of www.lu.se was made on the 11th of October 2004.

7.1.1 Inventio

The startpage of the University of Lund makes a good impression at first sight. The choice of color is both pleasant and stimulating but at the same time simple. The identity of the web page can easily be ascertained in the bottom of the center field and it is also clearly indicated by the placement of a logotype in the upper left corner. During the first glance the web page exudes confidence and credibility, there is nothing that could indicate that the site would be non-ethical or have a low moral. The design of the page promises a *techno-ethos*.

The hypertext of the startpage has a clear reasoning and the structure is quite logical and therefore the *logos* is fulfilled. There are five main links in a horizontal menu placed in the upper field and also five different entrances for different kinds of audiences placed in the center field. The basic point of the web site seems to be to offer information about the university for various audiences: the new student, the existing student, community and industry, media and employees. The site is not only presented in the Swedish language but also has the additional choice of both English and Chinese translations of selected parts.

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[13] The search was made on October the 1st, 2004. University of Lund [http://www.lu.se] and University of Uppsala [http://www.uu.se]

[14] Lund University [http://www.lu.se/o.o.i.s/182] 22-10-2004

[15] Uppsala University (http://info.uu.se/fakta.nsf/sidor/uu.i.idC8.html] 22-10-2004

The subpage test is made on subpages related to the five main links in the horizontal menu at the startpage. These subpages are quite similar to the startpage. The same style is used and the identity of the pages is not hard to discern. The author's name is always shown at the end of the page and there is always a possibility to contact the author. These subpages are intended to the community, industry and media, not so much to the student. The *logos* of the subpages is fulfilled, i.e. the reasoning is clear and the pages have a quite logical structure. The horizontal menu is still present but has changed in style; there is also a vertical menu on the left side of the pages.

7.1.2   Dispositio

The arrangement of the web site is performed consistently. The navigation and the style are coherent throughout the site but the links are not totally consistent. Different colors of links exist and they do not react the same way. Some links are blue, white or black and some of them change color whilst others do not. The links do not follow the default colors. However they are reversible and only three broken links were found during the evaluation test.[16] The search test is made in two steps; first contact information is searched and can be found easily, however the second step doesn't turn out to be as successful as the first. A list of the different departments is looked for but cannot be found without the search engine. The search function is available on all pages within the site.

7.1.3   Elocutio

On most occasions when factual information appears there are sources provided, which raises the reliability of the content. No evident shortcomings in the orthography or grammar can be found on the site and therefore the *puritas* is fulfilled. The content is readable, no long texts make reading difficult and there is also a function that makes it possible to enlarge the text and sharpen the contrast. The *ornatus* of the site is represented by a 12 pts text in Arial, photos in jpg with alternative text, background color in light blue, text background in white, information boxes in beige, and some frames in brown. The navigating on the site is compared to roads. A metaphorical arrow on the startpage indicates the different entrances to the subpages of the site, just like a road. A photo on the startpage represents a part of the university building, which could be a way of resembling the site to the university. The graphical interface on this web site produces great pleasure, i.e. the *urbanitas* is fulfilled.

7.1.4   Memoria

The content on the web site is structured in classes that represent the different target audiences: new students, existing students, community and industry, the media and employees; and also the main subjects: information about Lund University, education, research, library and contact details. Other memoria aids on the site are index and overview. To indicate the location the web master has adopted an index for the main areas and indentation in the vertical menu on the left side.

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[16] The broken link test was made on the 28 different subpages linked at the startpage.

7.1.5 Delivery

The *actio* of the site is implemented with a Linux server and the web server software Apache. HTML version 4.01 is adopted, although the Markup Validation Service[17] states that the site does not use a valid version of HTML. The startpage uses 84.5 KB, which would take approximately 23.5 seconds to load over a 28.8 kbps network connection.

No separate audio or video programs have to be installed, but a web questionnaire pops up sometimes. The only way to interact on the web site is through the contact information.

7.2 Uppsala University

The evaluation test of www.uu.se was made on the 12th of October 2004.

7.2.1 Inventio

At first sight the web of the University of Uppsala gives *pathos* of Christmas with its red, grey and golden elements. The haphazard compositional structuring of the different elements doesn't give an impression of a professional site.

The identity of the web site is not hard to figure out. In the upper left corner the logo of the university is placed, and the name of the university is also featured both as a large banner across the top of the site as well as being repeated again at the bottom. Since the first impression isn't that of a professional site, the confidence and credibility are affected but the actual content in the news box counteracts this initial impression. The news window mention honorary doctors, awards, and boasts of good grades for the University of Uppsala. Two links on the startpage: xhtml and css assure the user that the site has a *techno-ethos*. There is also an icon offered representing a sound version of the page.[18] Nothing on the page can be interpreted as non ethical or of a low moral.

The intended audience and purpose of the site are hard to discern, which have the result that the basic points are blurred.

The subpage test is made on the four main areas in the horizontal menu at the startpage: education, research, student, and collaboration. The first impression whilst looking at the four different subpages is one of non-consistency since they do not apply the same structure and layout. This contributes to a low confidence and low credibility, however the useful content raises the credibility a little. Another factor that decreases the credibility is that the information that appears on these subpages is not always connected to an author. The function of these subpages is as sub-sites and therefore they work as entrances to their respective subpages. Focus seems to be more on students than on the surrounding world.

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[17] Markup Validation Service v0.6.7 [http://validator.w3.org] 13-10-2004
[18] ReadSpeaker V2.0 from Phoneticon AB [http://isi.phoneticom.com/cgi-bin/uursnav?url=www.uu.se/&cmd10.x =0&cmd10.y=0&snd=/customer/uu/misc/sv/uuintro.wav/] 12-10-2004

7.2.2 Dispositio

The arrangement of the web site of Uppsala University is not done consistently. The links differ a lot in color and length. Some links consist of only one word while other is constituted by whole sentences. Some are red, white, black or blue, and some changes after visited while others not. The only consistency of links found is that all active links are underlined. On the majority of the pages the vertical menu to the left remains but on some pages it is absent, therefore not even the navigation system is consistent. The search test is made in two steps; first contact information is searched, which can be found easily on the startpage, but when the contact information is searched with the search engine it is not found. The second step, to find a list of the institutions, is a little harder to accomplish. There is a link to all faculties on the startpage, and the institutions can be found on each faculty's web page respectively. The search function is not available on all pages within the site.

7.2.3 Elocutio

When it comes to the puritas of the site there are no evident shortcomings in the orthography or grammar but there are no sources provided for factual information and that does not make the information seem reliable. Information is understandable and readable but the currency cannot be checked since no update or initial date can be found on the site. The ornatus of the site is represented by a 10 pts text in Verdana, jpg-photos with and without alternative text, red or grey navigation field, and white or grey text background. The layout is not consistent throughout the site, some sites have a red navigation field on the left, others have grey, and some have none. The graphical interface does not produce great pleasure. In other words, the site is lacking in stylistic elegance and hence it also lacks urbanitas.

7.2.4 Memoria

Some of the content is structured in classes like education, student, research and collaboration while other content seems to exist outside of these classes. There is no site map within the site that can make it easier to learn how to use the site besides a kind of index (A-Ö) divided into five categories. Thanks to a heading, in the upper middle field that tells the actual location, it is easy to know on which page one is but there is no way to tell where within the site one is located.

7.2.5 Delivery

The actio of the site is implemented with a Unix server and the web server software Apache. A valid document type is used: XHTML 1.0 Transitional. The startpage has a size of 35.3 KB and that would take approximately 9.8 seconds to load over a 28.8 kbps network connection. No separate audio or video programs have to be installed but if the sound version is used than it is impossible to close the frame that opens up when clicking on the sound icon. The only way to interact is through the contact information provided on the startpage.

Summary: Lund University fulfills the inventio and memoria in a satisfying way. Some scarcities are found in the dispositio, elocutio and actio but the overall mark for this site is very good. Uppsala University on the other hand has problems with all parts of the partes artis, which lower the overall mark.

8   Analysis

In this chapter an analysis of the result is made according to the analysis model in chapter two. The result of the analysis is arranged on the basis of the evaluation framework. Every step of the evaluation framework is studied and compared with the theory for each web site. Thereafter the two web sites are compared to each other. Only the highlights of every main section of the evaluation framework are presented. Lund University is from now on called LU and Uppsala University is called UU. Sometimes these abbreviations refer to the site and not to the university as an organization.

8.1   Inventio

Both universities are well known, respected and have long standing classical faculties of philosophy, law and theology. This gives the sites a good initial position when it comes to *ethos*. However it seems like LU has managed better than UU to maintain the confidence and credibility on the web site. UU gives the impression to rely on its good reputation and makes no further attempt to reinforce it. Nielsen (2000) suggests that the credibility can be achieved with good visuals, and that is exactly what LU has done. LU gives proof of *techno-ethos* with its professional design meanwhile UU can demonstrate that a valid XHTML version and CSS have been applied.

Thanks to a list of links in a vertical menu UU manages to communicate a part of the total content but the reasoning is not very clear. The purpose of the horizontal menu does not seem that clear and logical either because the links in the horizontal menu are also present in the vertical menu. According to Winn (2000) a logical structure can assure a clear reasoning and hence an ease of use navigation. Even though the vertical menu of UU does not seem to be logical, it gives a better overview of the content compared to the LU. The latter doesn't reveal much of the underlying content but it demonstrates its target audiences and *cur* in a more distinct way than UU does. However a look at LU's sitemap solves the inconvenience of hiding the content because it shows a very clear reasoning. The purpose of LU appears to be to offer convincing information to an audience outside the university. There is not much focus on the existing student.

The subpages of LU live up to the good impression that the startpage produced. The authority is still present throughout the site. Those responsible for each piece of information is clearly visible and hence a great contribution to the overall *ethos* of the site. The information needs to be clearly stated to infuse confidence and credibility (Karlberg & Mral, 1998 and Alexander & Tate, 1999). The focus on research and its connection to the community and industry contributes further to emphasize the skills within the area. This way of referring to ones own authority is one way of achieving credibility. (Karlberg & Mral, 1998)

The author of the "about the university"-text affirms that thanks to research at LU many companies have been created in the surroundings of the university. LU contributes to the trade and industry. UU on the other hand has not managed to keep up the *ethos* all through since the information lacks of authority on most occasions. The "about the university"-text does not convince the user that Uppsala University is that eminent as it actually is.

This part of the evaluation, the *inventio*, is about how well the sites presents its arguments. (Azaustre & Casas, 1997) It should answer to the question on how the site manages to exert an affect on the audience, i.e. how does it manage to persuade the user about what the site is about, how it works and for whom it is created?

LU manages very well to affect the audience. It makes clear which the target audience is through its target-oriented entrances. One gets a pretty good picture of how the sites works and of the content even though it is somewhat hidden behind the different links to the subpages. Thanks to a positive *pathos* that covers up where other components might have failed, the site manages to persuade the user.

UU fails to convince the user about its target audience. The content is more visible than on LU but its logical structure is hard to discern and therefore it is not easy to figure out how the site works. The *pathos* does not contribute at all to exert an affect on the audience. According to Corbett (1990) people are often swayed more by their emotions than by their reasons, which partly explains the bad result that UU gets so far. In other words, LU has strong arguments and manages to persuade its user to stay and explore the site meanwhile UU does not succeed that well.

8.2 Dispositio

The navigation system of LU is the definition of consistency itself. Navarro Colorado (2003) stresses the importance of a good general structure of the web because it is the key piece to the persuasion of the user. In other words LU's consistent navigation system contributes to the effective persuasion of the user that the site is easy to navigate. In the case of UU, it seems as one general navigation system has been the original starting point but this system does not get applied throughout the site. This lack of consistency prevents the purpose of the *dispositio* being fulfilled on UU. Nielsen (2000) affirms that it is legitimate to give a subpage a more local structure to help users feel welcome in the part of a site that is of most importance to them, but he also adds that one should strive for a common style and a shared navigation mechanism. Perhaps this is what UU has tried to do but without success.

The hypertext links on both sites do not follow the default colors that Powell suggests (2002) and their length is not consistent at all; some links are constituted by 3 characters and some by over 100 characters. Nielsen (2000) and De Marisco & Levialdi (2004) stresses the importance of a correct usage of links since they connect the different pages on the site and hence make navigation possible. The links lack of consistency on both sites and according to Shneiderman (1987), consistency is one of the eight golden rules for system design. He states that this principle is the most violated of them all and also the easiest to repair and avoid.

Finding what one is looking for is closely related to the navigation (Powell T, 2002) and the search test under the theme "departments" on the site of LU has to be made through the search engine. On UU the departments are found without the search engine but it can be tricky for a person without any knowledge about the organization of a university to accomplish this task. The fact that institutions are subordinated to faculties may not be known. According to Nielsen (2000) the structure of the site should not be determined by the structure of the organization behind the web but by the tasks users want to perform on the site.

The purpose of *dispositio* is to make the audience attentive, benevolent and susceptible for information; give background and make the audience understand the subject; present the thesis of the speech; introduce the arguments and finally summarize the content. (Karlberg & Mral, 1998)
The consistency throughout LU and good search availability contribute to make the audience attentive, benevolent and susceptible for information. Information can easily be found in "about the university", which gives a satisfying background to the university. The site map works as a splendid summary of the content. The arguments of LU are easy to discern. It is a university with a broad supply of university studies that concentrates on research and close collaboration with trade and industry.

UU makes the user attentive but perhaps not benevolent and susceptible to information because of these inconsistencies. However the list of links in the vertical left menu can serve as an overview and a summery of the content. Since the target audience and the purpose of the site is hard to discern the arguments fall. The purpose of the *dispositio* does not get fulfilled.

8.3 Elocutio

Flawless orthography, accurate content and high reliability strongly contributes to the *puritas* of LU. Since no original sources for factual information is provided on UU the reliability of the site gets affected and the *puritas* does not get fulfilled. However both sites have achieved great readability on the screen. The texts are spacious and kept short just along the guidelines of Nielsen (2000).

When it comes to the currency both sites have problems. On LU dates for update is provided on subpages but on some occasions information on the site makes the update date inadequate. Incidents like this make the persuasion less powerful. UU doesn't even provide an update date on any page. If a site does not fulfill the *perspicuitas*, i.e. does not offer an easy to follow, up to date and meaningful content, it will have problems keeping their users within the site because it will not be a usable site for them. (Azaustre & Casas, 1997, Powell T, 2002, Alexander & Tate, 1999)

LU manages to embellish the site by using pleasant colors, a sans-serif font for the text and providing a consistent and homogenous design throughout the site. High contrast is achieved between text and background just as Nielsen (2000) points out. Yet another advantage for this site is the possibility to enlarge the text and to adjust the contrast. The photographs are in the main adequately applied with alternative texts, and on some occasions the photos seem to be justified, as for example the photo on the startpage. It represents a part of the university building, which could be a way of resembling the site to the university. The site is a virtual representation of the university building. The university's essence is held within the site just as it is held within the university building. Another metaphor contained within the site is the way of navigating on

the site that resembles highway navigation. The arrow is used to indicate the different exits through the startpage; these exits are actually entrances to the different sub-sites located within the site.

The lack of consistency and absence of homogeneity of the layout of UU negate the *ornatus*. Even though few colors are used and a sans-serif font is applied for text, the layout never seems capable of persuading the user. Photos are correctly used but alternative text is not always offered. The only image on the startpage is a photo of a part of the old university building's ceiling. The photo, placed quite high up on the site, works as the ceiling of the site. Above the photo the university name is written, just as on a university building. This can be a way of creating a feeling of being inside the actual university building.

The layout of LU produces great pleasure and therefore its *urbanitas* is positive. The colors are pleasant and at the same time appealing. Visiting UU is not remarkably pleasant; the use of coloring communicates a rather inappropriate Christmas feeling.

8.4 Memoria

On LU eight different classes of information (*imagines*) can be discerned. The structuring has been carried out with the different target audiences and subjects in mind. These topics of information should help the user to figure out the content and how the site works. (Price J, 2001) On UU there is no overview that can help the user to figure out the different classes, however four subject-oriented classes have been discerned that could be a help to the user: education, student, research and collaboration. After a quick browsing on different sites of universities it is easy to state that these categories are common within universities.

With an index or overview as LU uses, the navigation system is much easier to figure out and hence a great aid for the memorability of the site. Another great aid to help user to navigate on the site are breadcrumbs (Powell T, 2002), but neither LU nor UU make use of them to indicate the actual location. Mral (2000b) and Landow & Delany (1990) stresses the importance on providing some kind of information on where on the site the user has landed since it is very easy to forget where the reading process started or where to find interesting pages found earlier in the process. LU uses an index and highlights the active flap but it is still difficult to know exactly where on the site one is located. Just as hard is it to discern the exact location at the site of UU. The consistent navigation placement, style and distinct information classes on LU, gives great proofs of memorability thanks to its *imagines* and *loci*.

8.5 Actio

The relationship between means of persuasion and delivery is clear: credibility, arguments and emotions that a speaker arouses among the audience are linked to the way in which one delivers a speech. (Gurak L, 1999) Since the *actio* on web sites is about making communication possible it is very important that the infrastructure works in a satisfactory way. (Price J, 2001)

According to Markup Validation Service[19] LU is not applying a valid HTML version and according to another web site analyzing tool, Doctor-HTML[20], the total number of bytes found on the startpage (62.6 KB) makes the page slow. With a 28.8 kbps network connection it would take 23.5 seconds to load the page. This download time is way to long according to Nielsen (2000) that affirms that users only wait up to 10 seconds for a page to load before they abandon the site. It is not only the startpage that contains many bytes of images; it is general for the whole site.

UU on the other hand is applying a valid XHTML version[21] and the startpage manages the 10 seconds limit of loading the page. This is due to sparse use of images. UU uses only one image on the startpage and according to Doctor-HTML it would only take 9.8 seconds to load the page with a 28.8 kbps network connection.

The responsiveness of the two sites to their servers is quite low, which goes along with the second golden rule about short response time and fast display rates by Shneiderman (1987).

If the communication is not performed properly *taedium* is produced. (Mral B, 2000) A web questionnaire pops up now and then while navigating on LU, which causes *taedium*. Pop-up windows are not used at UU but another *taedium* is produced. By clicking on the sound version icon a vertical frame opens up in the upper field of the page. It is impossible to close this frame without closing the window and then entering the site again.

Both sites have contact information easy at hand and can make interactivity possible. Interactivity is one of the promises of the web (Mral B, 2000).

Summary and conclusion: The web site of LU gives a more professional visual impression than UU does. Even though UU offers less visuality it is quite easy to understand how to navigate since it applies the common vertical menu placed to the left. On the other hand LU offers both an index and an overview that can help the user to navigate on the site. UU has less pictorial elements on the site and makes a faster navigation possible for user on modem. LU manages to remain, and reinforce, its confidence and credibility with good visuals and shows its authority throughout the site. The consistency of navigation structure of LU makes it easy for the user to figure out how the site works and also remember how it works until next occasion. LU knows how to capture the user's attention and infuse confidence. On the other hand UU has problems reinforcing the confidence and credibility on the site. The somewhat amateurish design is a disadvantage but the site can boast a low loading time. UU does not manage to persuade the user that she will find what she is looking for because of bad search possibilities and no overview.

LU produces a positive affect on the user thanks to consistency in navigation, distinct topics and an elegant style. The effect that UU produces is less positive. The Christmassy pathos; the lack of logical structure; and diffuse purpose and target audience makes it difficult for the user to carry along a good impression.

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[19] Markup Validation Service v.06 [http://validator.w3.org] 15-10-2004
[20] Doctor-HTML v.6 [www.doctor-html.com/RxHTML/] 11-10-2004
[21] Markup Validation Service v.06 [http://validator.w3.org] 15-10-2004

9 Discussion and Conclusions

The purpose of this essay has been to apply a rhetorical perspective to traditional web evaluation methods by compiling a framework of classical rhetoric and traditional web evaluation techniques. After a validation through an evaluation of two web sites I have come to some conclusions regarding this framework, which are:

- The framework implies a holistic concept that other web evaluation techniques lack.
- There is a strong relation between the different parts of the framework.
- The focus of the framework is the persuasion, which entails knowledge about human psychology and good argumentation techniques
- The framework emphasizes the target audience and the purpose of the site.
- The framework, unlike traditional web evaluation methods, include *memoria* as a natural step in the evaluation process.

The framework implies a holistic concept that other web evaluation techniques lack. Corbett (1990) states that the *inventio* and *dispositio* are in some books treated under the same head. I will take this reasoning even further and state that in a web context there is a relation between all parts in the *partes artis*. The *elocutio* is closely related to the *pathos* since it determines how to express the material in an elegant and convincing way. The *memoria* with its *imagines* and *loci* has a relation to the topics discovered in the *inventio* and to the structure of the navigation, the *dispositio*. The last part of the framework, *actio*, has also a close relationship to the *inventio*. Credibility, arguments and emotions that a discourse arouses are linked to the way in which one delivers a speech (Gurak L, 1999). I believe that the strength of a rhetorical perspective and using the *partes artis* of the classical rhetoric in the framework is that it ties up the separate part of a traditional web evaluation method and works as glue between the pieces.

Since this evaluation framework, within a rhetorical perspective, focus on persuading the web site visitor it also entails the knowledge about human psychology and good argumentation techniques; LU demonstrates both. I believe, just like Winn (2000) that web designers could learn a lot from ad-writers, some of the most skillful rhetoricians in our society. A web site is in somewhat way publicity for its owner. If a university doesn't have a site today it will have major problems to reach out to new students and even if it does have a site it can have problems to attract the students to the university. Therefore the site needs to be convincing to be able to attract the students. In my opinion web designers should, just as the ad-writers be skillful rhetoricians to be able to present the arguments in a convincing way.

In traditional web evaluation techniques there is no focus on the persuasion. Other methods might have usability as a focal point but in this framework usability is just a tool to persuade the user. Usability is not the goal of the framework, only a means of persuasion just as *ethos, pathos* and *logos*. Among the last-mentioned means I believe that *pathos* is of great importance for the overall impression. In traditional web evaluation techniques the first impression is just a first impression. In the light of Aristotle (Corbett E, 1990) the will of the audiences is often swayed more by their passion and emotions (*pathos*) than by their reason (*ethos*). I stick to that first impression lasts and I believe it can last through the whole stay at the site. Therefore it is of most importance that the first impression, the *pathos*, is worked out well with the help of human

psychology and argumentation techniques. As an example of its great importance we can take the deceptive *pathos* of UU that result in a bad overall impression for the site.

Another important contribution of the classical rhetoric to already existing web evaluation techniques is the emphasis on the target audience and the purpose, the *cur*, of the discourse. Before the construction of a site its future target audience needs to be clearly defined. UU does not seem to know who the intended audience is and therefore the content doesn't follow a logical structure. LU on the other hand is aware of its different audiences and has organized the content thereafter. LU shows that a clear definition of the *cur* and the target audience makes it easier to find the arguments.

This framework, unlike others, includes *memoria* as a natural step in the evaluation process, which in my opinion will contribute to better memory support on web sites. Even though books on rhetoric and web evaluation methods do not stress the importance of *memoria* I consider it valuable in a web evaluation process. Both *loci* and *imagines* play its role as memory support on web sites. Perhaps this modern medium, as the web site is, can give *memoria* the significance it never has had in the history.

By using this framework in the evaluation of LU and UU I believe that a more complete result has been achieved. It demonstrates how important each part is and its relations to others. I consider all parts of the framework significant but I dare to state that the *inventio* is especially important since it lays the foundations of the whole site. It is essential to ascertain the purpose and intended audience of the web site before constructing it.

I am convinced that a web designer of today not only needs good command of information technology but also of cognition, business and rhetoric.

Another important conclusion of this essay is that the result of this study can be seen as a compilation of state of the art of this research area.

The weakness of this framework is the lack of acknowledgement among rhetoricians and web evaluators. I would've liked to see the framework validated during a seminar with people from this specific research area or a mix of people from both rhetoric and web evaluation.

9.1   Method Discussion

The analysis method created for this essay contains superfluous steps, e.g. the comparison of one web site with the theory and then it repeats the same procedure for the second site. This results in heaps of text and could therefore be done by comparing the two sites directly with each other and then see what the theory has to say about the issue.

9.2 Future research

A web site of today is not far from being an information system so why not evaluate information systems from a rhetorical perspective? The information system also needs to persuade so that the user feels encouraged to use it.

9.3 Personal reflections

The autumn term of 2003 I studied Spanish Philology at the University of Valencia, Spain. One of the courses that I took part of was Rhetorical Analysis. As a part of this module I wrote an essay concerning rhetoric and web sites. I found that this subject aroused a strong interest within me and ever since I have wanted to develop this primary investigation. This combination of rhetoric and web sites, appeals to me since it gives me chance to integrate my previous two lines of university studies: System Science and Philology.

Eight weeks is not enough time for an extensive task like this. I would like to broaden my knowledge about rhetoric and I hope that I get the chance to continue this study where I have left it.

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Appendix 1 – Complete Result of the Evaluation Test

UNIVERSITY OF LUND
URL: http://www.lu.se
Time: 11-10-2004 09:00-15:00

Figure 5. A screenshot of the web site of the University of Uppsala

1. FIRST IMPRESSION – look at the startpage for 5-10 seconds without clicking.

   - *Pathos*: What emotions are aroused by watching the site? The emotions can be rated by a Likert scale from 1 to 5. 1 (negative feelings), 2 (indifference), 3 (acceptance), 4 (positive feelings) and 5 (very positive feelings). (Powell T, 2002)

     It is a positive feeling; the colors are pleasant and at the same time attract the attention. Rating: 4/5. I feel encouraged to continue exploring the site.

2. STARTPAGE TEST – look at the startpage for 30 seconds to a minute without clicking.

   - Look to see if it is possible to discern the authority of the site, i.e. the *quis* of the site. (Alexander & Tate, 1999) This step will help to figure out the *ethos* of the site. Questions:

     i. Identify the site owner by only looking at the startpage. (Powell T, 2002, Alexander & Tate, 1999)

        The logotype of the University of Lund is clearly indicated in the upper left corner. On the bottom of the news box the name of the university is present and its address and telephone number. The identity is very visible.

     ii. Does the site infuse confidence and credibility? How? (Karlberg & Mral, 1998 Nielsen J, 2000 Powell T, 2002)

         Yes, the colors and their composition infuse confidence. The first impression is a clean but stimulating site. Below the menu there is a news box with news that really increases the confidence. One can read about a doctoral student that has won a "Medicon Valley Academy" award. The site is offered in Swedish, English and Chinese. The fact that the site is offered in English is more of an obligation for a university site but it certainly arouses curiosity about the purpose of such an offer as Chinese.

     iii. Does the site list any recommendations or ratings from outside sources? (Alexander & Tate, 1999)

         No

     iv. Can it be considered a moral and ethical web site? (Gurak L, 1999)

         The site does not publish anything that can indicate that the site wouldn't be moral or ethical but nothing actually verifies a high moral or ethics. However the site seems to be serious.

v. Does the site have a *techno-ethos*? (Enos & Borrowman, 2001)

It would be wrong to say that the site has a techno-ethos because with the naked eye one can only see appealing interface design, however this design gives the impression of good technology know-how.

- *Logos* implies that reasoning must be clear and easy to follow and also logical and relevant. (Karlberg & Mral, 1998) A logical structure of the site can assure a clear reasoning and hence an ease of use navigation. (Winn W, 2000) Questions:

    i. Is it easy to understand the navigation system and the content by only looking at the startpage?

    It is quite easy to understand how the site is organized because it uses a common navigation system like a horizontal menu in the upper part of the site and also uses standard titles of the links as: About the University of Lund, Education, and Research; and also offers different entrances for those who want to navigate the site: new students, existing students, employees, community and industry, and media.

- Try to understand the *quid* and the *cur* of the site. (Powell T, 2002, Alexander & Tate, 1999, De Marisco & Levialdi, 2004) Questions:

    i. What are the basic points of the site and its purpose? (Alexander & Tate, 1999, Powell T, 2002)

    The basic points and purpose of the site seem to offer information about the university for different kinds of audiences.

    ii. For whom is it created, i.e. who is the intended audience? (Alexander & Tate, 1999, Powell T, 2002)

    For people outside the university but that may have an interest in this university, as for an example media and the community. The audience is not only Swedish-speaking but English- and Chinese-speaking as well.

- Web sites must have a good structure that facilitates the placing of new information, in that way it is easier to remember where the information can be found. (Price J, 2001) These classes are the topics of the site. Questions:

    i. Are there general classes, or topics, of information on the site, and how does the site deal with them? (Price J, 2001)

    Yes, the content is structured in different target audiences: becoming student, existing student, community and industry, and media.

3. SUBPAGE TEST – look at the subpage for 30 seconds to a minute without clicking.

- Apply the same procedure as with the startpage test but focus on the purpose of the page and the location indication. (Powell T, 2002, Nielsen J, 2000)
  Subpages tested:

About the University:	http://www.lu.se/o.o.i.s/182
Education:	http://www.lu.se/o.o.i.s/183
Research:	http://www.lu.se/o.o.i.s/184
Library:	http://www.lu.se/o.o.i.s/1398
Contact:	http://www.lu.se/o.o.i.s/190

  i. What emotions are aroused by watching the page? The emotions can be rated by a Likert scale from 1 to 5. 1 (negative feelings), 2 (indifference), 3 (acceptance), 4 (positive feelings) and 5 (very positive feelings). (Powell T, 2002)

  Positive feelings as well as for the startpage. The same colors are applied but the text is provided on a white background.

  ii. Does the page provide the logo or name of the organization? (Alexander & Tate, 1999)

  Yes it does, in the left upper corner as on the startpage.

  iii. If the material is written by an individual, are author's name and qualifications for providing the information clearly stated? (Alexander & Tate, 1999)

  The information is written by an individual and the authors' name is shown at the end of the text as a link. The link goes to an e-mail application that offer the user to send an e-mail to the author without opening the own e-mail program.

  iv. What are the basic points of the page and its purpose? (Alexander & Tate, 1999, Powell T, 2002)

  To provide overall information about the university, its alignment, research, the library and contact information.

  v. For whom is it created, i.e. who is the intended audience? (Alexander & Tate, 1999, Powell T, 2002)

  The information does not seem to be intended for a new student, it is more likely considered as information useful for community, industry and media.

vi. Does the page infuse confidence and credibility? (Powell T, 2002)

The consistency and content make an impression of a serious university, but for me as a student I think they attach too much importance on other audiences than on the student.

vii. Is it easy to understand the navigation system and the content on the page?

Quite easy .Now there is an additional vertical menu placed in the left side of the page. The upper horizontal menu indicates the location and the vertical left side menu provides subpages to this particular subpage that now works as a sub-site.

DISPOSITIO

4. NAVIGATION TEST – look at the startpage without clicking.

- Guess the clickable zones and their purposes. Printing the page can help accomplishing this task. When the whole page has been evaluated, one should check ones intuitions by actual test clicking. (Powell T, 2002) Questions:

    i. Number of believed clickable areas? (Powell T, 2002)

    27

    ii. Actual number of clickable areas? (Powell T, 2002)

    28, the logotype on the startpage turned out to be clickable.

    iii. Comments? (Powell T, 2002)

    The result does not differ much from the believed clickable areas.

- Check the style, consistency and placing of link labels by making sure they are of similar length, wording, and style, both textually and visually. (Powell T, 2002, Navarro Colorado B, 2003) Questions:

    i. Do links have explanatory names and what about the navigation label clarity? 1 (unclear), 2 (varying), 3 (fairly clear), 4 (clear) and 5 (very clear) (Powell T, 2002, Navarro Colorado B, 2003)

    Links have explanatory names and the label clarity is clear and. I would say 4 out of 5.

ii. Are link colors modified from the blue, red and purple default? (Powell T, 2002)

No

iii. Are link colors used consistently throughout the site? (Powell T, 2002)

It seems like links on a certain background have a certain link. Links in text are indicated in blue but does not change color while active or visited, however they are underlined while active. Links in menus are black or white, depending on the background. Long and short links (3 to 60 characters) are mixed.

non active	active	visited
blue on white background	blue underlined	blue
black on white background	black underlined	black, and sometimes brown
white on blue or brown background	white underlined	white

Figure 6. An overview of the different link colors

iv. Are there any broken links and orphaned files in the site? (Powell T, 2002)

The test was done by checking the links on the 28 different subpages linked at the startpage with an html validating tool. (www.doctor-html.com)

- *One broken link on the Chinese page (http://www.lu.se/o.o.i.s/1353):* http://www.sphosting.com/lca/.
- *Another one was found on "Anställd" (http://www.lu.se/o.o.i.s/773), the dead link is "Studentrekrytering":* http://www3.lu.se/info/intra/rekrytering/, *"Forbidden! You don't have permission to access /info/intra/rekrytering/ on this server."*
- *A third was found on the same page as the former: "Anställd". The link: "Tillgänglighet för funktionshindrade"* http://thut.sisus.se/: *"The page cannot be displayed".[22]*

v. If there are broken links, is helpful information offered? (Powell T, 2002)

No only: "The page cannot be displayed".

- Check the style, consistency and placing of the navigation and the structure. (Powell T, 2002, Navarro Colorado B, 2003) Shifting fast between pages within the site can do this. (Powell T, 2002) Questions:

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[22] When the test was accomplished on the 11th of October these links were broken but when the same test was made on later dates only one broken links could be found [http://www3.lu.se/info/intra/rekrytering/]

i. Consistency of navigation placement? (Powell T, 2002 Navarro Colorado B, 2003)

   Very consistent

ii. Consistency of navigation style? (Powell T, 2002 Navarro Colorado B, 2003)

   The style is very consistent. Same colors and structure is used on the whole site. It is only the startpage that is a little different. But of course there is an exception, the different departments seems to have free hands to design their own web page. All pages have a link to the startpage of the University of Lund.

iii. What navigation system is used? Top, bottom, left or right? (Powell T, 2002)

   Combined top and left. In the top-menu one can see main subject areas as: about the university, education, research, library or contact. In the left menu the subpages to these submenus are shown.

iv. What is the organization of navigation labels? (Powell T, 2002)

   The navigation labels are organized in different tables as shown below.
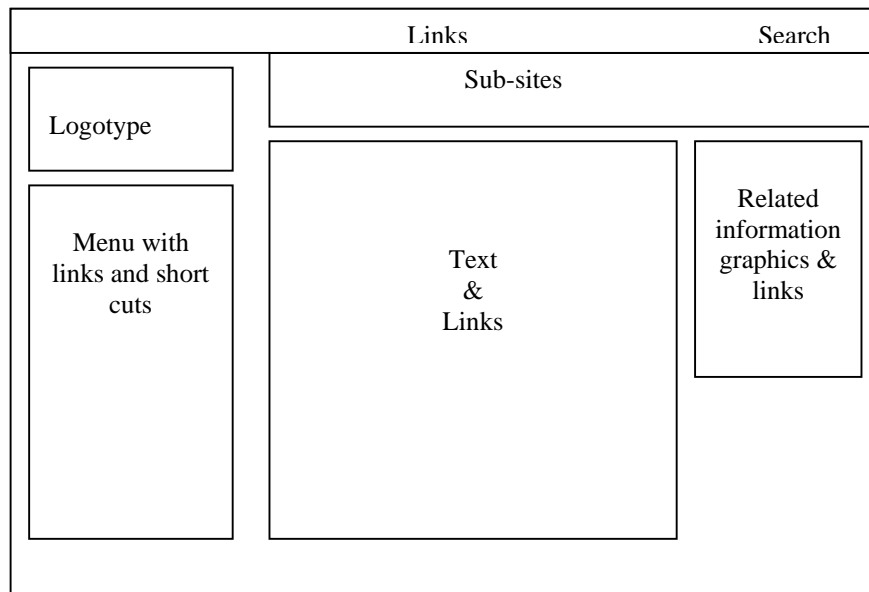
Figure 7. Simplified illustration of the structure of the design of the web site of the University of Lund.

v. Are frames used? (Powell T, 2002, Nielsen J, 2000)

   No

vi. Can pages be bookmarked? (Powell T, 2002)

Yes, and bookmarks get explicable names.

- Make sure the links are reversible. (Shneiderman B, 1987, De Marco & Levialdi, 2004)

Yes, links are reversible

- Testing the findability on a web site should focus on how the search is accessed, how it deals with errors, and how results are presented. Try to find contact information and something specific for the site. (Powell T, 2002)

Contact information is very easy to find. The specific search was not that successful. I tried to find a list of the different departments of the university but had to use the search function to find it.

i. Does the site have an internal search system? (Alexander & Tate, 1999, Powell T, 2002)

Yes

ii. Is the search function available on all pages? (Nielsen J, 2000)

Yes

iii. Does search retrieve complete and appropriate results? (Alexander & Tate, 1999, Powell T, 2002)

Yes, there is an explaining message when search doesn't generate a result. If words are misspelled the search engine suggests similar words.

iv. Are instructions for search form included? (Powell T, 2002)

Yes, there are instructions for searching with SiteSeeker.

- Are the purposes of the *dispositio* fulfilled? (Karlberg & Mral, 1998)

Yes, but perhaps a little presentation of the university could be offered at the startpage. It seems like the purpose of the page is to provide information for the surrounding world and therefore a presentation could be more suitable than news. In that presentation the alignment of the university could be explained.

5. HYPERTEXT TEST

- Check *puritas*: spelling, grammar and reliability. (Alexander & Tate, 1999, Azaustre & Casas, 1997, Karlberg & Mral, 1998, Mral B, 2000a) Questions:

    i. Does the content appear accurate, truthful and objective? (Powell T, 2002 Alexander & Tate, 1999)

       Yes

    ii. Is the material free of grammatical, spelling and typographical errors? (Alexander & Tate, 1999)

       Yes, no evident shortcomings in the orthography and grammar can be found.

    iii. Are sources for factual information provided so the facts can be verified in the original source? (Alexander & Tate, 1999)

       Mostly

- Look at the comprehension, currency, meaningfulness and readability. The latter can be checked by doing a fuzzy eye test or a paper test and by making sure graphs; charts and tables are clearly labeled and easy to read. (Powell T, 2002, Alexander & Tate, 1999) Questions:

    i. Is the content comprehensible? (Alexander & Tate, 1999, Powell T, 2002 Azaustre & Casas, 1997)

       Yes, there is no information that cannot be understood.

    ii. Is the content readable? (Alexander & Tate, 1999, Powell T, 2002 Azaustre & Casas, 1997)

       Yes, there are no long texts that make reading difficult. There is a function that makes it possible to enlarge the text and sharpen the contrast.

    iii. Is content updated on the site? (Alexander & Tate, 1999, Powell T, 2002 Azaustre & Casas, 1997)

       There is no update date on the startpage but on subpages. Most of time the updating is made correctly but on one occasion the updating is inadequate, e.g. news later than September the 14th 2004 has a later date than the update of the page.

iv. Is there a glossary included? (Powell T, 2002)

There is a glossary for the student at "Studentens A-Ö", http://www4.lu.se/o.o.i.s/836

v. Is there enough detail to answer simple user questions? (Powell T, 2002)

There is no FAQ included, only the glossary for the students.

- Check *ornatus*: the layout and rhetorical figures. (Karlberg & Mral, 1998, Navarro Colorado B, 2003) Questions:

  i. What color, font and size of text are used? (Powell T, 2002)

  Arial, 12 pts.

  ii. Are images used correctly? (Powell T, 2002)

  Yes, photos appears as jpeg files

  iii. Are alternative text used for images? (Powell T, 2002)

  Yes, an alternative text is provided.

  iv. What rhetorical figures can be detected? (Karlberg & Mral, 1998, Navarro Colorado B, 2003)

  The way of navigating on the site is liken to roads. An arrow indicates the different entrances to the subpages of the site.

- Check consistency and homogeneity of layout by doing a browse test on the pages within the site. (Powell T, 2002, Nielsen J, 2000)

The design is consistent, the layout is the same on the whole site.

- The *urbanitas* depends on the pleasure that the elegance of style produces. (Azaustre & Casas, 1997) Instructions:
  i. Estimate the pleasure that the graphical interface produces.

  Great pleasure

6. MEMORY TEST

- The topics of the site represent the *imagines* whilst the *loci* is constituted by the consistency of navigation structure. Questions:

    i. Does the site provide a clear *imagines* and *loci*? How?

    Yes by its distinct topics and consistent structure of navigation.

- The memorability of a web site aims to how easy it is to learn how to use the site. (Nielsen J, 1993) Questions:

    iv. Is any aid offered to help, like site map or index? (Powell T, 2002, Nielsen J, 1993)

    Yes, both index and an overview.

    v. Is it easy to discern the actual location? (Mral B, 2000b)

    It is quite easy but could be more obvious by using breadcrumbs.

    vi. How is location indicated? URL, page label, deselected labels, breadcrumbs, color, design style? (Powell T, 2002)

    By an index and headings.

ACTIO

7. DELIVERY TEST

- The accuracy and quality of the HTML-code can be checked with validating tools as *Markup Validation Service v0.6.7*[23], *CSE Validator*[24] and by setting the browser to show errors. Testing the site in different browsers is also important. (Powell T, 2002) Questions:

    i. What kind of web server and operating system is used? (Powell T, 2002)

    Linux server with Apache

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[23] Markup Validation Service v0.6.7 [http://validator.w3.org] 2004-09-24
[24] CSE Validator [http://htmlvalidator.com] 2004-09-24

ii. What version of HTML is used? (Powell T, 2002)

HTML 4.01 but according to Markup Validation Service it is not a valid version of HTML.

iii. Does the browser support show any error on the site? Which ones? (Powell T, 2002)

No

iv. Does the site work in other browsers? Which ones are tested? (Powell T, 2002)

The site is also tested in Mozilla 1.7 with good results. No change in layout is and functionality can be detected.

v. How large is the startpage? (Powell T, 2002)
84.5 KB

- Check the site policy for information about cookies used on the site and their purpose. (Powell T, 2002, Alexander & Tate, 1999)

Cookies are used and an explanation on why and how they work is available on the site.

- Check the responsiveness of a server to see how fast connection the site has to Internet. The network tool "ping" can be used. (Powell T, 2002)

11 ms

- Audio or video programs that have to be installed separately cause *taedium* on a web site. (Mral B, 2000b) Questions:

i. Are plug-ins used on the site?

No

ii. Does the site use pop-ups?

Yes a web questionnaire form pops up now and then. There is also a very annoying error message when the "Presentation"-link is clicked on "about the university"-page.

- Checking contact information, filling out forms, ordering products etc, can test the interactivity. The test should be conducted correctly and then trying out-of-range values. (Powell T, 2002) Questions:

i. Is contact information provided? (Alexander & Tate, 1999)

Yes, it is very easy to find it

ii. Is informative feedback offered? (Powell T, 2002, Shneiderman B, 1987)

No

iii. Is there any feedback mechanism for users to comment about the site? (Alexander & Tate, 1999)

No, only to send e-mails

_____

UNIVERSITY OF UPPSALA
URL: http://www.uu.se
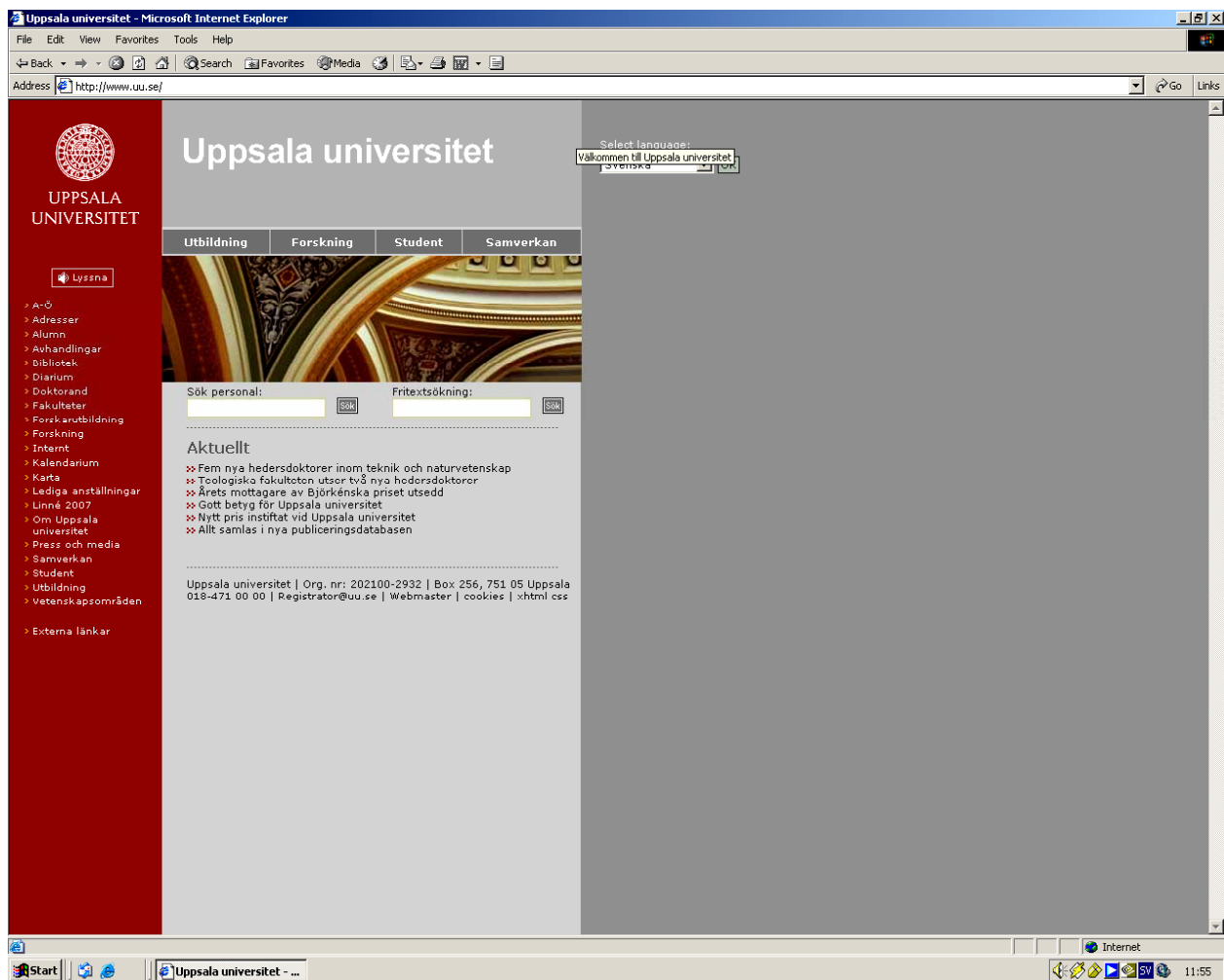Time: 12-10-2004 11:00-17.00

Figure 8. A screenshot of the web site of the University of Uppsala

INVENTIO

1. FIRST IMPRESSION – look at the startpage for 5-10 seconds without clicking.

   - *Pathos*: What emotions are aroused by watching the site? The emotions can be rated by a Likert scale from 1 to 5. 1 (negative feelings), 2 (indifference), 3 (acceptance), 4 (positive feelings) and 5 (very positive feelings). (Powell T, 2002)

     Christmas feelings, red, two different grey tones and a photo in the middle that contains golden. It is acceptable but no positive feelings are produced. 3/5

2. STARTPAGE TEST – look at the startpage for 30 seconds to a minute without clicking.

   - Look to see if it is possible to discern the authority of the site, i.e. the *quis* of the site. (Alexander & Tate, 1999) This step will help to figure out the *ethos* of the site. Questions:

     i. Identify the site owner by only looking at the startpage. (Powell T, 2002, Alexander & Tate, 1999)

        "The University of Uppsala" in a quite big heading in the top of the page. At the bottom of the center field one can find the name of the university, its corporate identification number, contact information etc.

     ii. Does the site infuse confidence and credibility? How? (Karlberg & Mral, 1998 Nielsen J, 2000 Powell T, 2002)

        The first impression is not that of watching a professional site. However the content raises the rating by presenting news like appointing two honorary doctors, distribution of prizes, good marks for the university etc.

     iii. Does the site list any recommendations or ratings from outside sources? (Alexander & Tate, 1999)

        No

     iv. Can it be considered a moral and ethical web site? (Gurak L, 1999)

        The site doesn't present anything that could be interpreted as non-ethical or low moral.

v. Does the site have a *techno-ethos*? (Enos & Borrowman, 2001)

The design doesn't really make a great impression but on the bottom of the center field there are two links that certifies that the page is a valid XHTML 1.0 Transitional page and that it is validated as CSS. A sound version of the page is also offered.[25]

- *Logos* implies that reasoning must be clear and easy to follow and also logical and relevant. (Karlberg & Mral, 1998) A logical structure of the site can assure a clear reasoning and hence an ease of use navigation. (Winn W, 2000) Questions:

  i. Is it easy to understand the navigation system and the content by only looking at the startpage?

  Quite easy. The page uses a top horizontal menu for the center field and a vertical left menu in alphabetical order. The top menu seems to contain four different entrances to the site: education, research, student, and collaboration.

- Try to understand the *quid* and the *cur* of the site. (Powell T, 2002, Alexander & Tate, 1999, De Marisco & Levialdi, 2004) Questions:

  i. What are the basic points of the site and its purpose? (Alexander & Tate, 1999, Powell T, 2002)

  This site offers more alternatives to enter the site than the web of Lund, however I cannot discern a specific purpose more than offering a web site.

  ii. For whom is it created, i.e. who is the intended audience? (Alexander & Tate, 1999, Powell T, 2002)

  The intended audience is not very specified. No great importance is attached to students, employees or community and industry. The audience is not only Swedish-speaking since the startpage is also offered in English, German, Spanish, French, Italian and Japanese.

- Web sites must have a good structure that facilitates the placing of new information, in that way it is easier to remember where the information can be found. (Price J, 2001) These classes are the topics of the site. Questions:

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[25] ReadSpeaker V2.0 from Phoneticon AB
[http://isi.phoneticom.com/cgi-bin/uursnav?url=www.uu.se/&cmd10.x=0&cmd10.y=0&snd=/customer/uu/misc/sv/uuintro.wav/] 12-10-2004

i. Are there general classes, or topics, of information on the site, and how does the site deal with them? (Price J, 2001)

Yes but only partly. Some of the content is structured in four classes as: education, research, student, and collaboration. Other content fall outside these classes.

3. SUBPAGE TEST – look at the subpage for 30 seconds to a minute without clicking.

- Apply the same procedure as with the startpage test but focus on the purpose of the page and the location indication. (Powell T, 2002, Nielsen J, 2000) Questions:

Sub page tested:

Education:	http://www.uu.se/Utbildning/
Research:	http://info.uu.se/fakta.nsf/sidor/forskning.id73.html
Student:	http://www.student.uu.se/
Collaboration:	http://info.uu.se/fakta.nsf/sidor/samverkan.idC9.html

i. What emotions are aroused by watching the page? The emotions can be rated by a Likert scale from 1 to 5. 1 (negative feelings), 2 (indifference), 3 (acceptance), 4 (positive feelings) and 5 (very positive feelings). (Powell T, 2002)

The subpages don't have the grey background as the startpage has. It makes a better impression, its simpler but at the same time more professional. The disadvantage is that the design is not consistent among the subpages. 3/5

ii. Does the page provide the logo or name of the organization? (Alexander & Tate, 1999)

Yes it does, in the left upper corner as on the startpage.

iii. If the material is written by an individual, are author's name and qualifications for providing the information clearly stated? (Alexander & Tate, 1999)

No author's name is presented at the subpages. However on two of them: Research and Collaboration, there is a link that takes the user to a page of search results, i.e. a click at the link generates a search and the result presents contact information about the author.

iv. What are the basic points of the page and its purpose? (Alexander & Tate, 1999, Powell T, 2002)

The subpages work as sub-sites and therefore as entrances to its subpages. Their function is more of a node than an information sheet.

v. For whom is it created, i.e. who is the intended audience? (Alexander & Tate, 1999, Powell T, 2002)

The subpages seem to have more focus on the student than the surrounding world.

vi. Does the page infuse confidence and credibility? (Powell T, 2002)

The lack of consistency in design is a disadvantage but the usable content on the subpages raises the credibility. When the site lack of consistency it is hard to think that there is consistency in the university.

vii. Is it easy to understand the navigation system and the content on the page?

Yes it is quite easy; it is the same navigation system as on the startpage.

DISPOSITIO

4. NAVIGATION TEST – look at the startpage without clicking.

- Guess the clickable zones and their purposes. Printing the page can help accomplishing this task. When the whole page has been evaluated, one should check ones intuitions by actual test clicking. (Powell T, 2002) Questions:

    i. Number of believed clickable areas? (Powell T, 2002)

    36

    ii. Actual number of clickable areas? (Powell T, 2002)

    41. In the field of contact information in the bottom of the center field there are five links that are not indicated as links. The turn from black to red and underlined while active but in non-active mode they are not indicated as links.

    iii. Comments? (Powell T, 2002)

    The result differs a lot due to the not indicated links in the information field.

- Check the style, consistency and placing of link labels by making sure they are of similar length, wording, and style, both textually and visually. (Powell T, 2002, Navarro Colorado B, 2003) Questions:

i. Do links have explanatory names and what about the navigation label clarity? 1 (unclear), 2 (varying), 3 (fairly clear), 4 (clear) and 5 (very clear) (Powell T, 2002, Navarro Colorado B, 2003)

The links on the startpage have quite explanatory names but the label clarity is not very clear. The mark is only 2/5.

ii. Are link colors modified from the blue, red and purple default? (Powell T, 2002)

No

iii. Are link colors used consistently throughout the site? (Powell T, 2002)

No, there is no consistency in style of link labels. The length differ from 3 characters to 173. The color of the links differ a lot.

non active	active	visited
white on red background	white underlined	white, some changes to yellow
black on white background	red underlined	black
blue and underlined on white background	blue underlined	purple, some changes to dark grey
red on white background	blue underlined	red

Figure 9. An overview of the different link colors

iv. Are there any broken links and orphaned files in the site? (Powell T, 2002)

The test was done by checking all the links on subpages linked from the startpage with an html validating tool.[26]Following broken links were found at the "Doktorand" page (http://www.uu.se/doktorand/): "Juridisk", "Teologisk", and "Promotionsvideo".

v. If there are broken links, is helpful information offered? (Powell T, 2002)

No only: "The page cannot be displayed".

- Check the style, consistency and placing of the navigation and the structure. (Powell T, 2002, Navarro Colorado B, 2003) Shifting fast between pages within the site can do this. (Powell T, 2002) Questions:

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[26] Doctor HTML [www.doctor-html.com] 12-10-2004

i. Consistency of navigation placement? (Powell T, 2002 Navarro Colorado B, 2003)

Not very consistent. Not a single consistent component can be found. On most of pages the red left menu remains but not on all.[27] On some pages it falls of and in some occasion it turns grey.

ii. Consistency of navigation style? (Powell T, 2002 Navarro Colorado B, 2003)
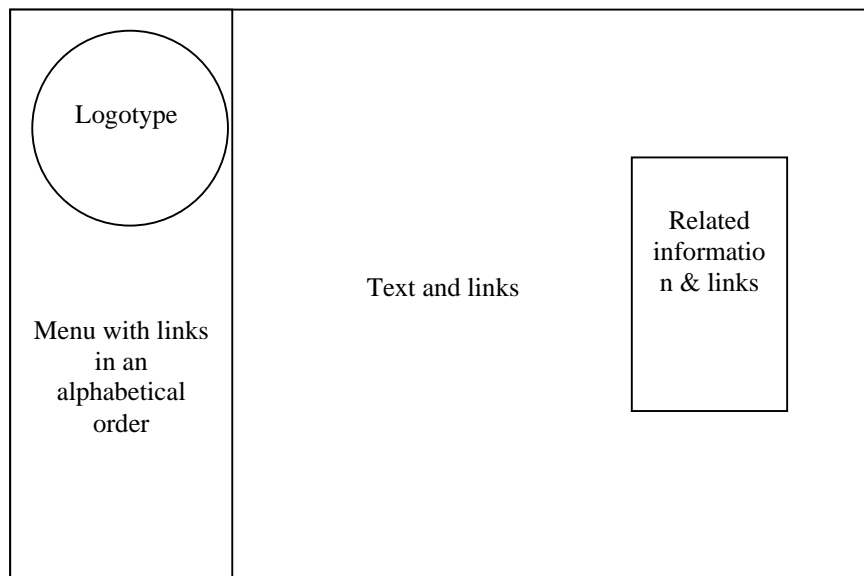
It seems like they are trying to keep one style throughout the site but it is not always fulfilled. They have tried to use the same colors, red, white and grey, on the site but the different combinations don't make a good impression.

iii. What navigation system is used? Top, bottom, left or right? (Powell T, 2002)

Combined top and left on the startpage. In the top-menu one can see the selected main subject area as: Education, Research, Student, and Collaboration. On subpages there is only a vertical left menu.

iv. What is the organization of navigation labels? (Powell T, 2002)

The navigation labels are mostly presented in the left menu but sometimes there are links in the centerfield and right field as well.

Logotype

Menu with links in an alphabetical order

Text and links

Related information & links

Figure 10. Simplified illustration of the structure of the design of the web site of the University of Uppsala

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[27] see [http://www.uu.se/Adresser/] [http://www.uu.se/map/] and [http://www.uu.se/linne2007/] 12-10-2004

v. Are frames used? (Powell T, 2002, Nielsen J, 2000)

Yes, when the sound version is activated a frame creates.

vi. Can pages be bookmarked? (Powell T, 2002)

Yes, but bookmark do not always get explicable names, as on the student page: http://www.student.uu.se/ *where the bookmark is: "Student i Uppsala" which doesn't really indicate that the page belongs to the University of Uppsala. The same thing happens with the pages in foreign languages.*

- Make sure the links are reversible. (Shneiderman B, 1987, De Marco & Levialdi, 2004)

Yes, links are reversible but there is no "back"-button offered.

- Testing the findability on a web site should focus on how the search is accessed, how it deals with errors, and how results are presented. Try to find contact information and something specific for the site. (Powell T, 2002)

Contact information is searched and it can be found easily on the startpage, but when the contact information is searched with the search engine it is not found. The second step, to find a list of the institutions, is a little harder to accomplish. There is a link to all faculties on the startpage, and the institutions can be found on respectively web page. A person not used to university concepts can have trouble finding the institutions and therefore the search engine can be useful. The fact that institutions are subordinated to faculties may not be known.

i. Does the site have an internal search system? (Alexander & Tate, 1999, Powell T, 2002)

Yes, but it is only available from the startpage. It is a google search.

ii. Is the search function available on all pages? (Nielsen J, 2000)

No, only on the startpage and on a few subpages.

iii. Does search retrieve complete and appropriate results? (Alexander & Tate, 1999, Powell T, 2002)

Yes, there is an explaining message when search doesn't generate a result.

iv. Are instructions for search form included? (Powell T, 2002)

No

- Are the purposes of the *dispositio* fulfilled? (Karlberg & Mral, 1998)

  This site makes the user attentive but maybe not benevolent and susceptible for information because of the inconsistency. Since a lot of links are presented in the left menu one get an overview over the content that can work as a summary of the content.

ELOCUTIO

5. HYPERTEXT TEST

- Check *puritas*: spelling, grammar and reliability. (Alexander & Tate, 1999, Azaustre & Casas, 1997, Karlberg & Mral, 1998, Mral B, 2000a) Questions:

  i. Does the content appear accurate, truthful and objective? (Powell T, 2002 Alexander & Tate, 1999)

     Yes

  ii. Is the material free of grammatical, spelling and typographical errors? (Alexander & Tate, 1999)

     Yes, no evident shortcomings in the orthography and grammar can be found.

  iii. Are sources for factual information provided so the facts can be verified in the original source? (Alexander & Tate, 1999)

     No

- Look at the comprehension, currency, meaningfulness and readability. The latter can be checked by doing a fuzzy eye test or a paper test and by making sure graphs, charts and tables are clearly labeled and easy to read. (Powell T, 2002, Alexander & Tate, 1999) Questions:

  i. Is the content comprehensible? (Alexander & Tate, 1999, Powell T, 2002 Azaustre & Casas, 1997)

     Yes, there is no information that cannot be understood.

  ii. Is the content readable? (Alexander & Tate, 1999, Powell T, 2002 Azaustre & Casas, 1997)

     Yes, there are no long texts that make reading difficult.

iii. Is content updated on the site? (Alexander & Tate, 1999, Powell T, 2002 Azaustre & Casas, 1997)

There is no update date on the site.

iv. Is there a glossary included? (Powell T, 2002)

No

v. Is there enough detail to answer simple user questions? (Powell T, 2002)

There is no FAQ included.

- Check *ornatus*: the layout and rhetorical figures. (Karlberg & Mral, 1998, Navarro Colorado B, 2003) Questions:

  i. What color, font and size of text are used? (Powell T, 2002)

  Verdana, 10 pts.

  ii. Are images used correctly? (Powell T, 2002)

  Yes, photos appears as jpeg files

  iii. Are alternative text used for images? (Powell T, 2002)

  Not for all images

  iv. What rhetorical figures can be detected?

  On the startpage there is a photo of the ceiling of the university building that can serve as the ceiling of the web site.

- Check consistency and homogeneity of layout by doing a browse test on the pages within the site. (Powell T, 2002, Nielsen J, 2000)

  The design is not consistent, the layout on some pages within the site

- The *urbanitas* depends on the pleasure that the elegance of style produces. (Azaustre & Casas, 1997) Instructions:

  i. Estimate the pleasure that the graphical interface produces.

The site lacks of elegance of style and hence it also lacks of urbanitas.

6. MEMORY TEST

- The topics of the site represent the *imagines* whilst the *loci* is constituted by the consistency of navigation structure. Questions:

    i. Does the site provide a clear *imagines* and *loci*? How?

    No, the topics are not distinct and no consistent structure of navigation is provided, therefore the site lack imagines and loci.

- The memorability of a web site aims to how easy it is to learn how to use the site. (Nielsen J, 1993) Questions:

    iv. Is any aid offered to help, like site map or index? (Powell T, 2002, Nielsen J, 1993)

    Only a kind of index that is divided into five categories: units, library resources, research, courses and programs, and about the university.

    v. Is it easy to discern the actual location? (Mral B, 2000b)

    One can almost always tell that one is visiting a page of the University of Uppsala, but it is not possible to see where on the site one is situated.

    vi. How is location indicated? URL, page label, deselected labels, breadcrumbs, color, design style? (Powell T, 2002)
    By a heading in the upper middle field

ACTIO

7. DELIVERY TEST

- The accuracy and quality of the HTML-code can be checked with validating tools as *Markup Validation Service v0.6.7*[28], *CSE Validator*[29] and by setting the browser to show errors. Testing the site in different browsers is also important. (Powell T, 2002) Questions:

    i. What kind of web server and operating system is used? (Powell T, 2002)

      Unix server with Apache

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[28] Markup Validation Service v0.6.7 [http://validator.w3.org] 2004-09-24
[29] CSE Validator [http://htmlvalidator.com] 2004-09-24

ii. What version of HTML is used? (Powell T, 2002)

XHTML 1.0 Transitional

iii. Does the browser support show any error on the site? Which ones? (Powell T, 2002)

No

iv. Does the site work in other browsers? Which ones are tested? (Powell T, 2002)

The site is also tested in Mozilla 1.7 with good results. No change in layout is made but an improvement of the functionality. The sound version of the site is opened in a new window and not in a frame, as was the case of the test in ME 6.0.

v. How large is the startpage? (Powell T, 2002)

35.3 KB. According to the network tool Doctor-HTML this will take approximately 9.8 seconds to load over a 28.8 kbps network connection.

- Check the site policy for information about cookies used on the site and their purpose. (Powell T, 2002, Alexander & Tate, 1999)

Cookies are used and an explanation on why and how they work is available on the site.

- Check the responsiveness of a server to see how fast connection the site has to Internet. The network tool "ping" can be used. (Powell T, 2002)

8 ms

- Audio or video programs that have to be installed separately cause *taedium* on a web site. (Mral B, 2000b)

No separate audio or video programs have to be installed but if the sound version is used than it is impossible to close the frame that opens up when clicking on the sound icon.

i. Are plug-ins used on the site?

No

ii. Does the site use pop-ups?

No

- Checking contact information, filling out forms, ordering products etc, can test the interactivity. The test should be conducted correctly and then trying out-of-range values. (Powell T, 2002) Questions:

    i. Is contact information provided? (Alexander & Tate, 1999)

    Yes on the startpage, however contact information cannot be found in the search engine.

    ii. Is informative feedback offered? (Powell T, 2002, Shneiderman B, 1987)

    No

    iii. Is there any feedback mechanism for users to comment about the site? (Alexander & Tate, 1999)

    No, only to send e-mails